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JOURNAL
OF THE
CEYLON BRANCH
OF THE
ROYAL ASIATIC SOCIETY,
1848.

VOLUME II.—PART I.

No. 4.



“The design of the Society is to institute and promote inquiries into the History, Religion, Literature, Arts, and Social Condition of the present and former Inhabitants of the Island, with its Geology, Mineralogy, its Climate and Meteorology, its Botany and Zoology.”

COLOMBO:
GEORGE J. A. SKEEN, GOVERNMENT PRINTER, CEYLON.

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CONTENTS.

	PAGE
On the Formation of a Collection of Lepidoptera in Ceylon.— By EDGAR L. LAYARD, Esq.	5
On Buddhism : Patta Kamma, or the present result of Virtuous Conduct.—By the Rev. D. J. GÖGERLY	17
The Rural Economy of the Siyhalese (more particularly with reference to the District of Sabaragamuwa), with some account of their Superstitions.—By R. E. LEWIS, Esq... ..	31
Sketches in the Natural History of Ceylon.—By EDGAR L. LAYARD, Esq.	53
A Catalogue of Books in the Tamil Language, with the Names of the Authors, the Subjects, and Dates.—By SIMON CASIE CHETTY, Esq.	59
Sketches in the Natural History of Ceylon.—By EDGAR L. LAYARD, Esq.	81
On Ceylonite found near Trincomalee.—By Lieut. HENDER- SON, C.R.R.	97

APPENDIX.

Hints to Amateur Conchologists.—By HUGH CUMING, Esq., F.R.S.	100
Proceedings of Anniversary Meeting—March 31, 1849	107
Books presented to and purchased by the Society	116
List of Members	117
Register of Temperature kept at Puttalam for the Twelve Months ended July 31, 1848, with Remarks.—By A. O. BRODIE, Esq.	118
Abstract of a Meteorological Register kept at Batticotta during 1847 and 1848	121
Rules of the Society	123

ROYAL ASIATIC SOCIETY.

CEYLON BRANCH.

ON THE FORMATION OF A COLLECTION OF LEPIDOPTERA IN CEYLON.

BY EDGAR L. LAYARD, ESQ.

(*Read 3rd June, 1848.*)

THE small progress which has hitherto been made towards a knowledge of the Natural History of the Island, and the total absence of all public and private collections, contrasted with the rich and extensive field which the country affords to the Naturalist, induce me to offer to the Society a few hints on the formation of a collection of Lepidoptera.

The caterpillars, or larvæ, of butterflies and moths, (or more scientifically speaking, of Diurnal and Nocturnal Lepidoptera,) may be sought for on almost every plant and shrub met in our daily walks. Morning and evening, in a tropical country, are their feeding times, and they may then be found making good use of their powerful jaws, clinging to the underside or edges of the leaves. During the heat of the day they conceal themselves in the thickest and shadiest parts of the plant, and remain perfectly motionless, till hunger and the cool breezes of evening again summon them to their pleasing labours. Some species, such as many of the grass-feeding *Noctua*, feed only at night, and must then be carefully sought with a lantern ;

though some may occasionally be found by pulling up tufts of grass, and examining the roots among which they lie concealed. Some of the internal feeders upon the wood and pith of trees, &c., are also active during the night, lengthening their covered galleries, which are formed from the digested particles of their food. The best means of capturing these is to watch the covered way (which may sometimes be seen of several inches in length hanging down the trunk of a tree), and, on ascertaining which is the end attached to the hole in the wood, suddenly to press the finger over it, thus stopping the return of the inmate, who is capable of a swift retrograde movement and can progress either way with astonishing speed. On lifting the web, if the larvæ is not visible, rest assured he is inside the stem far out of reach. These internal feeders are most difficult to rear, the surest method being to fasten a piece of strong gauze in in the shape of a bag over the aperture, and watch the natural egress of the moth. The watcher's patience, however, may perhaps be tried, as several of these species are three or four years in the larvæ and pupa (chrysalis) state. Nevertheless, as it is most probable that the discovery of the larvæ is owing to the large size of its web, it will be nearly full-grown.

Some species, again, are gregarious feeders. Some of these envelope themselves in a large mass of leaves and silk, and as they consume the foliage around them keep adding fresh materials to their domicile. Others march out in order in a wedge shape, stripping the leafy covering of the trees most completely, leaving them almost, if not entirely, bare. These larvæ are termed "processionary caterpillars." Most of the gregarious feeders are very common, and are easily found. Some of them shed their hair when handled, which, entering the uncovered skin of the face and hands, causes extreme and long irritation.

Others, again, such as some of the *Limacodes*, actually sting, their spines being sharp and furnished with a very pungent acid.

These larvæ are shaped somewhat like the common "wood-louse" (*Oniscus*) with the head and feet hidden. They spin themselves little round or oblong hard cocoons, in which they undergo their transformations; and the perfect fly on emerging pushes open a little trap door, hitherto fastened by means of a natural gum, which is now melted by a strong acid secreted by the moth. All insects which spin cocoons are furnished with the abovenamed fluid, with the exception perhaps of some of the *Saturnia* tribe, which do not close the ends of the cocoon, but spin thick hairs over them in the shape of an "eel pot."

As my object in writing is the advancement of science and to assist those who desire to collect for the purpose of investigating the habits and peculiarities of insects, I would direct the reader's attention to the advantage, in the rearing of larvæ, of ascertaining the moth or butterfly to which each belongs. To effect this, several gauze cages should be made for the purpose of separating the larvæ. The reason of this is obvious. The larvæ of many *Noctua* descend into the earth to effect their final change, and the pupæ being of one uniform shape and colour, it is impossible to distinguish between them; and if all be put in the same case, they, by coming out together, make "confusion worse confounded." Let each caterpillar have, if possible, its own cage; let it be numbered and sketched; write down the name of the plant on which it feeds, with the dates of its entering into and emerging from the pupa state. These notes will not occupy much time, and, if not valuable to the observer, may, if properly and carefully kept, be of great service to a scientific man.

Butterflies and the larger moths and *Sphingidæ* require a large roomy box to expand their wings in on first emerging; they also require to creep with facility up the sides of the cage, that their bodies and wings, by hanging down, may stretch and harden. The very act of creeping upwards forces the fluids from the body (which may be seen alternately contracting and

expanding) into the nervures of the wings. The common large *Saturnia*, feeding on cinnamon, requires six or eight hours to harden it for flight.

The bottom of the breeding cage should be furnished with a zinc tray about three inches deep—zinc, as it does not corrode, is preferable to iron or tin; fine earth and rotten wood, well mixed together, should be laid in the tray, and over this a layer of damp moss. Into the moist earth a branch of the larva's food should be stuck to keep fresh; the oftener the leaf is changed the better; once a day at least is absolutely necessary to obtain fine full-grown specimens. Light and air also are required. The cages are best swung from the ceiling by a pulley, to facilitate the drawing up and down; they are thus secure from ants and rats and children's fingers; native servants also are too fond of meddling. Larvæ may be collected from shrubs and trees by placing a sheet or table cloth under the branches, and beating them with a long stick. An umbrella with a hooked handle makes a good portable substitute, and is otherwise useful. This plan however of beating for caterpillars is attended with much inconvenience in this country from the showers of ants which fall from each blow. Some larvæ form themselves moveable domiciles, which they never quit, except in the winged state. These tribes consist of *Oiketicus*, *Cryptothelea*, *Psyche*, and the numerous *Tinæ*; these latter are more familiarly known by the name of "clothes' moths." The first fabricate their dwellings of pieces of stick laid lengthways, and as they increase in size they open one side of their habitaculum between two bits of stick, and let in another of proper size and length, which by means of their strong jaws they detach from the plant on which they are feeding. The second tribe are smaller and more delicate, using in the fabrication of their dwellings small pieces of leaves and the cast skin of their own heads. The third, more delicate still, simply weave their own silk. These three species are the most remarkable in their natural

economy. The female is perfectly wingless (apterous), never quitting the case in which she has passed her two previous stages of existence. The larvæ of both sexes, when about to undergo their final change, fix themselves by the apex to a twig or leaf, and when the male emerges from his living tomb the female has changed to a pulpy maggot, wholly differing from the swiftly flying male. Impregnation takes place within the case, and the female dies, becoming a mass of fine downy silk, and eggs. The young larvæ are excluded from the eggs, and immediately form their cases from the substance of their dead mother; then dropping by hundreds from the empty case they each eagerly seek a tender leaf, and commence their great work of existence—eating, changing, and reproducing. Twelve species of these have been found in Ceylon. The *Tinæ* are unluckily too well known, and dreaded, to need any particular mention, except that the insect collector, if not attending strictly to the directions hereafter laid down for preserving his specimens, will find he has made a fine collection of these species to the loss of all his others.

Care must be taken never to disturb a caterpillar that is stationary—in fact, larvæ should never be handled if possible; they may always be captured by gathering the leaf on which they are found. A stationary larvæ is most likely undergoing his “moult” or change of skin. This change occurs several times in his life, and a slight squeeze would at such a period probably prove fatal. If injured at the last change to a chrysalis, a deformed fly will be the result. The caterpillar of a fine unique moth (*Ptoatoria*) that I transmitted to Colombo by post from Chilaw, received a bruise, and one of its inferior wings is perfectly white and clear with no scales upon it.

In this country I have observed the final change is not so visible in its approach as in England. There, the larvæ often neglects his food for several days, is restless, and sickly; here, he eats till the last moment, and the only sign (and that not

always apparent) is the digested particles of food, instead of being as usual disposed in beautiful and regular forms, are humid and flaccid.

Of the pupa, little can be said as to collecting them ; they may be found in all situations. The most likely places are behind the loose bark, and in crevices of trees, about their roots, in holes in old walks, and among dead leaves, &c. The pupæ of butterflies are usually attached to, or suspended from, or near, the plant on which they feed. It may not perhaps be out of place to mention here that European collectors have a method of capturing the perfect fly which is termed “sembling.” This consists in exposing a virgin female of some of the large moths in a small cage in the open air ; the males of the same species will surround her prison house, and are so intent upon their amorous chase that they may easily be captured by the hand. By this means some of the rarest moths are taken. Exposing an old sugar cask or basket smeared with honey, is also a good plan ; and I have taken a fine yellow underwing (*Triphæna*) in the toddy vessels and only there. A bright light at night near an open window attracts many insects not otherwise found.

Rearing Lepidoptera from the larvæ and pupæ is doubtless the best way to obtain fine and perfect insects, and consequently a more valuable collection ; but all insects cannot be found in these states, from the inaccessible nature of their haunts, which are deep jungles, lofty trees, thick bushes, and the interior of water plants, where the larvæ, by a kind and wise Providence, have been taught to conceal themselves. Some also inhabiting more open situations, escape the attacks of even their natural enemies—birds—by their exact resemblance to the branches and leaves of trees. Many of the *Geometridæ*—“surveyors” as they are termed—are capable of standing erect and motionless for hours together, like a dead twig. To the touch even they are hard and round, owing to the amazing force of their muscles.

I will now proceed to describe the best method of capturing the perfect fly. Nets of various forms are used by collectors at home and abroad. Of all, I prefer the common ring or bag net. This is made of a thin piece of rattan, bent circular, and fastened to a handle about three and a-half or four feet long, according to the strength of the user. The best handle is a ground rattan, about three-quarters of an inch in diameter; this is light, flexible, and will not break in a rough fall. The ring should be one foot and a-half in diameter—more, if practicable and manageable,—and a permanent fixture to the handle.

The net itself should be of some soft transparent material, (silk gauze is best, as it least injures the down on the insect's wings), shaped like a bag and about the depth of the user's arm, to enable him to reach to the bottom and secure his capture. The net should be fastened to the ring by a band of calico three or four inches broad; this is a great protection to the net when striking at an insect resting on a leaf. A good-sized collecting box is required to secure the captured insect, and should be made with rounded corners to prevent an awkward bruise to the owner in case of a fall. It should open easily when held in one hand—by a spring is preferable—leaving the other at liberty to handle the specimen. It should also be lined at the top and bottom with cork, or *kirrilla-mulla*—a substance more fully described hereafter—to receive the pins. For this, and other tropical climates, let the boxes be twice the size of those used at home.

Thus equipped, let the collector (who should be dressed in darkish clothes) repair to any open space in the jungle between the hours of 7 and 10 A.M.; after that time it becomes too hot, and the insects keep in the deep shade. Let him select an overhanging tree, affording him shelter from the sun, and a screen from the insects, and from thence watch his insect game come gliding past, or hovering over some favourite flower, and use his best efforts to capture it. Practice will teach this better

than I can, except that it may not be amiss to mention that when the insect is fairly within the net, a sudden turn of the wrist will, by doubling the gauze over the handle, prevent its escape. I have always observed that butterflies fear a stationary object much less than a moving one, and will often fly within reach of your net when *standing still*, although they will not suffer you to *approach* them; they are quickly alarmed on being followed, and generally fly high over head. Butterflies delight in alternate shade and sunshine, and will keep about the same spot for days together, particularly in the neighbourhood of water, by which they will settle and drink copiously, and many insects seldom captured on the wing may be taken whilst drinking. *Ipias Glaucippe*, for instance, a most rapid and wary insect, I have seen on the flooded roads by thirty or forty at a time, and have actually ridden over them before they rose, when they would immediately settle again. The *Polyommata*, and *Thecla* tribes should be sought for about the broad-leaved plants upon which they fix their thrones and combat any rival which may appear, to the great detriment of their beauty, causing them to lose their slender tails and brilliant glossy tints. In fact, every insect has its own localities, which can only be learned by practice and attention to its habits. About 10 o'clock the collector may return home till 3 or 4 P.M., when the butterfly tribes again venture forth, though he now will not capture such fine fresh specimens as in the morning—the butterflies always escaping from the pupa early in the morning, the moths in the evening. However, he may make good captures, particularly among the *Hesperia* or “skippers,” and the *Theclas*; and as the evening closes in, and the short Eastern twilight comes on, he will be amply rewarded by *Hesperidæ* and *Sphingidæ*: the former flying heavily along, the latter darting swiftly from flower to flower, never alighting, but dipping their spiral tongues into the dewy flower cups, and extracting their hidden sweets. I have observed in this part

of the country (Colombo), that true *Noctua* are not commonly met with on the wing. It may be from the prevalence of the cinnamon plant, on which few feed.

But we must now return to the collector, and instruct him how to preserve his captured insects. For this purpose he must have a pair of spring forceps, a setting-needle, (which is a fine pin or needle, bent at the point, and fixed in a handle,) pins of all thicknesses and lengths from four inches to half an inch, and a *setting-box*, which should be lined with cork and be of sufficient size to contain 80 or 100 specimens; it should be just deep enough to hold the insect pins, and the cork should be half as thick again as in the store-boxes, so that when the pin is driven home in the latter the insects' wings may be just a little above the surface. The box must be air-tight, and well supplied with camphor in neat bags, for the double purpose of killing the insects and preserving them from mites, &c.

Let him now take the specimen to be set, having previously given it a slight squeeze under the thorax or chest, and run a proper-sized pin through the middle of the thorax, inclining it slightly towards the body, taking care that it is at perfect right-angles with the wings. Having stuck it down uprightly through the cork, let him take two pins of proper length, and stick them in with the forceps, at a little distance from the base of the inferior wings, pressing them down towards the surface of the cork, inclining outward towards the outer angle of the superior wings. Then, introducing the point of the setting-needle under the wings, gently push them into the position of a butterfly expanded upon a flower. If the long pins press the wings sufficiently down on the cork, the roughness will keep them in their proper place; if not, fasten down the long pins by common thick ones bent in two right-angles. A good substitute for the long pins may be found in the thorns of the prickly pear, or the inside rib of the cocoanut leaf termed by the natives "ikkils." In this state leave them till dry, or *set*, the length of time

depending on a moist or dry season. They are then fit to remove into the store-boxes, which like the setting-box must be made quite air-tight, and constantly supplied with camphor; without this precaution the labour of months will quickly become the prey of mites, *Tinæ*, and a host of other enemies. “Kirillamula” is, as the Sinhalese word expresses it, the root of the Kirilla tree (*Sonneratia Acida*, L.) and is found about the banks of fresh water rivers and tanks. Kalutara produces the finest. It is very light, and easily receives the pin. It should be sawn into slabs, about a-quarter or three-eighths of an inch thick, well smoothed with sand paper and glued into the boxes, then neatly pasted over with the thinnest and softest white paper. The generic name of each family should be placed at the commencement of the group, the specific name under each insect. A number should also be appended, as a reference, and a catalogue made of the name, place of capture, description or drawing of caterpillar, and food, if known, in separate columns. Where space is no object, several of each species should be kept, say, for instance, two males and two females and an underside of each; as in many cases the male and female are so dissimilar as to be mistaken for separate species. Insects being very local, duplicates should always be kept, to exchange with other collectors in various parts of the country.

NOTE.—Dried specimens received from correspondents may always be *re-set* to the collector’s fancy by previously relaxing them, which is effected by placing them in a covered vessel half full of damp sand covered with a sheet of blotting paper. Some recommend hot water instead of sand. The smaller insects will be fit for stretching in a few hours: the larger often require from two to three days.

When the specimens are perfectly dry, they should be touched with a solution of corrosive sublimate and spirits of wine, not too strong lest a white sediment be deposited.

*List of Indigenous Diurnal Lepidoptera, with their Localities.*1.—*Papilio*.

Haliphronvar	} Generally distributed.
Polymnestor	
Pamon	
Hector	
Mutius	
Polytes	
Polydorus	
Crino	
Agamemnon..	
Sarpedon.....	
Epilus	} Interior only.
Dissimilis	
Helenus	
Eurypilus	
Two unnamed	

2.—*Danaïs*.

Plexippus	} Ubique.
Chrysippus...	
Limniace	
Milissa	} Kandy district.
Aglææ	

3.—*Euplæa*.

Corus	Ubique.
Prothœ	Southern coast.
Two unnamed.	Interior.

4.—*Diadema*.

Bolina	} Ubique.
Lasinassa	
Auge	

5.—*Idea*.

Lynceus.....	Interior.
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6.—*Iphtas*.

Glaucippe.....	Ubique.
----------------	---------

7.—*Pieris*.

Hippia.....	} Ubique.
Phryne	
Seyerina	
Eucharis	
Paulina	

MamounaInterior.

Four other species, one supposed to be a fine variety of

Nama(Doubleday.)

8.—*Pontia*.

Nina Ubique.

9.—*Callidryas*.

Alemeone	} Ubique.
Hillaria	
Pyanthe	

Two others unnamed.

10.—*Anthocharis*.

Eucharis	} Aripo, W.
Danæe	

11.—*Idmais*.

One unnamed	} Chilaw,
species	

12.—*Colias*.

Three unnamed	} W. coast,
species	

13.—*Thestias*.

Mariamne.....	} W. coast,
Pirene	

One unnamed species.

14.—*Terias*.

Hecabe	Ubique.
One unnamed...	Interior, hills

15.—*Hipparchia*.

Leda	Ubique.
Seven unnamed.	

16.—*Satyrus*.

Chenus	Interior.
One unnamed.	

17.—*Adoeias*.

Iphita Ubique
 Lubentina ... { Generally
 distributed.
 Three unnamed.

18.—*Vanessa*.

Laomedia..... }
 Cardui } Ubique.
 Asteriæ }
 Ænone..... } Jaffna.
 Orithia..... }
 Lemonias..... Ubique.
 Vulcania { Interior.
 Charonia }
 One unnamed. Chilaw.

19.—*Limenitis*.

Aceris } Ubique.
 Procris } Interior
 generally.
 Heliodora Interior.
 One unnamed... Ubique.

20.—*Cynthia*.

Arsinoe { Southern coast
 and interior.

21. *Argynnis*.

Phalanta } Ubique.
 Erymanthus }
 Niphe Interior.
 Two unnamed.

22.—*Acbæa*.

Violæ Ubique.

23.—*Cethosia*.

One unnamed... Ubique.

24.—*Ergolis*.

Coryta { Ubique.
 Ariadne }
 One unnamed.

25.—*Melanitis*.

Undularis { Where cocoa-
 nut trees grow.

26.—*Libythia*

One unnamed... Interior.

27.—*Emesis*.

Two unnamed.

28.—*Amathusia*.

One unnamed.. Ubique.

29.—*Charaxes*.

Bernhardus ... Ubique.
 Three unnamed.

30.—*Minetra*.

Gambrisius ... Interior

31.—*Erycina*.

One unnamed... Interior.

32.—*Myrina*.

Four unnamed... Ubique.

33.—*Polyommatus*.

Rosimon } These tribes
 Nyseus } are very
 Eythion } generally
 Sixteen un- } distributed
 named. } over the
 Island.

34.—*Thecla*.

Hercules }
 Narada }
 Nila } do.
 Elpis }
 Epijarbas }
 Vulcanus }

Twenty-four unnamed.

35.—*Loxura*.

Atymnus Ubique

36.—*Hesperia*.

Thirty-six }
 unnamed } Ubique.

ON BUDDHISM.—*PATTA KAMMA*.

OR, THE PRESENT RESULT OF VIRTUOUS CONDUCT.

BY THE REV. D. J. GOGERLY.

(Read 4th November, 1848.)

While Bhagawá resided in Jétawana, a park belonging to Anáthapindako near Sēwet, the Gahapati Anáthapindako went there, and, having worshipped Buddha, sat down at a respectful distance. When he was seated Bhagawá said :

“Gahapati, there are four objects difficult of attainment, yet desirable, gratifying and productive of pleasure. The first of these is the attainment of wealth in conjunction with piety.

The second is, having obtained wealth in conjunction with piety, to be applauded by relatives and judicious friends. The third is, having obtained wealth in conjunction with piety, and being applauded by judicious friends, to live long in the enjoyment of health. The fourth is, having obtained wealth in conjunction with piety, having been applauded by relatives and judicious friends, and having lived long in the enjoyment of health, to obtain, upon the dissolution of the frame by death, a heavenly state, where all is enjoyment. These, Gahapati, are the four objects, difficult of attainment, yet desirable, gratifying and productive of pleasure.

“For the attainment of these objects four things are necessary. The being endued with faith, with virtue, with liberality, and with wisdom.

What is the being endued with Faith ? A disciple of Buddha has a correct creed : he believes that Bhagawá is immaculate, that he is the supreme Buddha, perfect in wisdom and excellent in conduct ; that he is acquainted with the state of all worlds ; is the subjector of men and their infallible guide ; the preceptor

of Gods and men, the wise, the blessed one. This belief constitutes the being endued with faith.

“What is the being endued with Virtue? A disciple of Buddha abstains from destroying life, from stealing, from illicit intercourse with females, from lying, and from inebriating liquors, which cause irreligion. These constitute the being endued with virtue.

“What is the being endued with Liberality? The disciple of Buddha delights in almsgiving, gives with clean hands and with a benevolent mind, seeks opportunities for liberality, and lives free from the defiling influence of avarice. This constitutes the being endued with liberality.

“What is the being endued with Wisdom? He who is avaricious, covetous, and subject to hardness of heart, does that which is wrong, and neglects that which is right, and thus forfeits both his reputation and happiness. He who is malicious, or is slothful and indolent, or of a haughty and irritable character, or whose mind is perplexed with religious doubts, does that which is wrong and neglects that which is right, and thus forfeits both his reputation and happiness. The disciple of Buddha, knowing that these dispositions pollute the soul, banishes from his mind avarice, maliciousness, sloth, indolence, irritability, and religious doubts : this disciple of Buddha is wise, prudent and intelligent. This constitutes the being endued with wisdom.

“These are the things necessary for obtaining the four objects difficult of attainment, yet desirable, gratifying, and productive of pleasure.

“Such a disciple of Buddha, through the wealth he has honestly and justly acquired by manly vigor, by strength of arm and by laborious efforts, secures four advantages. The comfort and happiness of himself, of his family, of his domestics, and of his friends and connections, is provided for. This is the first advantage he derives from his well-employed wealth. If there be any losses from fire, from inundations, from oppressive rulers,

from thieves, from untoward events, or from family circumstances, the disciple of Buddha, through the wealth he has thus honestly and justly acquired, secures himself, under these circumstances of loss, from danger, and is preserved from suffering. This is the second advantage he derives from his wisely-employed wealth. Furthermore, the disciple of Buddha, by the wealth he has thus honestly and justly acquired, is enabled to present the necessary gifts to relatives, to sages and Brahmins, in honor of deceased ancestors, to princes and to the gods. This is the third advantage he derives from his wisely-employed wealth. Again, the disciple of Buddha, by the wealth he has justly and honestly acquired, ministers to those holy men, Priests and Brahmins, who, abstaining from concupiscence, live peaceably and virtuously, and by the exercise of self control subdue and extinguish their passions. By their means he provides for himself future happiness, a residence in one of the heavens, continued pleasure and celestial enjoyments. This is the fourth advantage he derives from his wisely-employed wealth.

“ If a person expend his wealth so as to produce these advantages, his property has not been thrown away, but has produced its appropriate results, and has been enjoyed judiciously. He will be able to reflect: I have supported those whom it was my duty to maintain; I have been freed from disasters, have presented the five principal donations, and bestowed gifts which will produce advantages in a future state. I have ministered to the necessities of placid, holy and virtuous men, and have accomplished all the objects a wise and judicious layman could wish to effect through the possession of wealth. Even in this world I am applauded by wise men, who are established in virtue, and who investigate my conduct, and in a future state I shall have the enjoyment of celestial pleasure.”

Upon hearing this, the Gahapati Anáthapindako being much delighted and edified with the discourse of Bhagawá, rose from his seat, and, having worshipped him, departed.

A DISCOURSE TO SOME INHABITANTS OF WERANJA.

Thus I heard. On one occasion Bhagawá resided near Sēwet in a monastery founded by Anáthapindiko at Jétawana. Some Brahmins and cultivators of Wéranja having arrived at Sēwet on business, heard respecting Bhagawá that the Samana Gótamo of the Sákya race had left his Sákya connections, and retired from secular life, and that he was then residing near Sēwet in the monastery founded by Anáthapindiko at Jétawana. They also heard that the voice of his fame had ascended, proclaiming that this illustrious person is perfectly holy, all-wise, skilled in all science, unimpeachable in conduct, acquainted with all existing objects, the supreme director and controller of men, the preceptor of all beings human and divine, the Buddha, the Illustrious One. He, by his own inherent wisdom, has fully ascertained and developed the nature of the universe, including the gods, Márayas, Brahmas, Sages, and Brahmins, and the assemblage of princes and people. He makes known his doctrines, excellent in their principles, excellent in their development, and excellent in their final results, replete with instruction and eloquence, and enforces a completely perfect and immaculate course of virtuous conduct. It is highly desirable to have an interview with so eminently holy a person.

The Brahmins and cultivators of Wéranja accordingly went to the residence of Bhagawá. Some of them worshipped him and sat down; others entered previously into pleasing conversation with him; some, placing their joined hands to their foreheads, bowed reverently; some announced their names and family connections, and others sat down silently. When they were seated they said: "What is the reason, Gótamo, and what is the cause, why some beings upon the dissolution of the system by death are reproduced in hell, the abode of wretchedness, misery, and continued anguish; and why others are reproduced in the heavenly world the abode of happiness?"

They replied: "Excellent Gotama, we do not distinctly understand the meaning of what has been thus succinctly and generally declared. Will the excellent Gotamo explain that which has been thus declared, so that we may clearly understand it?"

"I will explain it. Cultivators, listen and carefully consider."

The Brahmins and cultivators of Weranja replied: "Do so, Gotama."

Bhagawá accordingly said: "There are three kinds of vice and profligacy in action, four kinds in speech, and three in the dispositions of the mind.

"What, cultivators, are the three kinds of vice and profligacy in action? A man is a destroyer of animal life, cruel, bloody-handed, constantly tormenting and destroying, and unkind to all around him. Or he is a thief, taking the property of others, whether it be deposited in an inhabited or uninhabited place, appropriating to himself, with a dishonest intent, property which is not given to him. Or he is dissolute in his conduct with females, having illicit intercourse with such as are under the guardianship of a mother, of a father, of a brother, of a sister, or of relatives, or who may have a husband or be a ward of the Crown, or contracted to a man by having only a flower garland thrown over her person. Such, cultivators, are the three kinds of vice and profligacy connected with the body.

"What are the four kinds of vice and profligacy in speech? A man, cultivators, is a liar. He is summoned to give evidence in a court of justice, or in the presence of his attendants and relatives, or before a general assembly, or in the king's palace; and when it is said to him—'O man! speak that which you know,' he says 'I know,' concerning that of which he is ignorant; 'I do not know,' concerning that with which he is acquainted; 'I saw,' concerning that which he did not see; and 'I saw not,' concerning that which he did see; and thus, whether to benefit himself or others, or in consequence of being bribed, he

becomes a wilful liar. Or a man is a calumniator, mentioning in one place what he has heard in another, in order that he may cause dissension ; he introduces divisions among those who were peaceable, and prevents the reconciliation of opposing parties ; he is quarrelsome, delights in contests and disputations, and by his words stirs up animosity. Or a man is intemperate in speech, using contumacious, harsh, irritating and contemptuous language, producing disquietude and anger. Or he is frivolous in discourse : he speaks unseasonably, affirms things which are incorrect and contrary to virtue and propriety ; his words are unworthy of regard, ill-timed, injudicious, unguarded and unedifying. These, cultivators, are the four kinds of vicious and profligate discourse.

“What are the kinds of mental vice and profligacy ? A man, cultivators, is exceeding covetous, desiring that which belongs to others, thinking — ‘Oh that I could obtain possession of that man’s property!’ Or he is a malicious and ill-disposed man, wishing — ‘May that person be tormented, may he be killed or die, or come to ruin, or be reduced to abject poverty!’ Or he is heretical and heterodox : he affirms that there is no advantage from alms-giving, offerings, and sacrifices ; that there are no future good or evil results of men’s actions, no causes of present or future birth, or for having a specific father and mother ; that there are no beings who have mature existence without the intervention of birth and childhood. That there are no sages and holy men, who by their own wisdom have ascertained and teach the nature of this and of other worlds. These, cultivators, are the three kinds of mental vice and profligacy. In consequence of such a vicious and profligate life, some beings upon the dissolution of the system by death are reproduced in hell, the abode of wretchedness, misery, and continued anguish.

“There are, also, cultivators, three kinds of holy and virtuous conduct, four kinds of holy and virtuous speech, and three kinds of holy and virtuous thoughts. What are the three kinds of

holy and virtuous conduct? A man, cultivators, abstains from taking away animal life, lays aside the cudgel and the sword, and is gentle, ashamed of cruelty, and compassionate to all beings. He also abstains from taking that which does not belong to him, and does not with a dishonest intent appropriate to his own use the property of others, whether it be deposited in an inhabited or uninhabited place. He is chaste in his conduct, and abstains from illicit intercourse with females who are under the guardianship of a mother, a father, a brother, a sister, or of relatives, or who has a husband, or is a ward of the Crown, or contracted to a man by even throwing a garland over her person. These, cultivators, are the three kinds of virtuous conduct.

“What are the four kinds of holy and virtuous speech? A man, cultivators, abstains from lying and speaks the truth. When brought to give his testimony in a court, or among his attendants and relatives, or before a general assembly, or in the king's palace, and it is said ‘O man! speak what you know,’ he says concerning that of which he is ignorant, ‘I do not know;’ concerning that with which he is acquainted, he says ‘I know;’ relative to that which he has seen, he states ‘I saw it;’ and concerning that which he has not seen, he replies ‘I have not seen it;’ and thus he does not speak a wilful lie to benefit either himself or others or on account of any bribe. He also abstains from calumny and lives without slandering others. He does not, in order to promote divisions, detail in one place that which he has heard in another, but is a reconciler of differences and a strengthener of friendships: he lives in peace, delights in kind feelings, rejoices in union, and his conversation tends to promote harmony. He also abstains from irritating language and contumacious expressions; his words are free from asperity, pleasing to the ear, affectionate, soothing, gentle, and affording general satisfaction and pleasure. He also abstains from frivolous discourse; his language is suitable to the occasion, true,

instructive, inculcating virtue and true knowledge, and being reasonable, judicious, perspicuous, and edifying, is worthy of being treasured in the mind. These, cultivators, are the four kinds of holy and virtuous speech.

“What are the three kinds of mental holiness and virtue? A man, cultivators, is not covetous, and does not desire the property of others, thinking ‘O that it were mine!’ He is not malignant, but with a sincere mind desires that others may be free from angry passions, that they may be free from suffering and distress, and be able to maintain themselves in comfort. He is orthodox, having correct religious views. He acknowledges that there are meritorious gifts, offerings and sacrifices; that there will be future good and evil results of men’s conduct; that there are causes for existence in this and in other worlds for having a specific father and mother; that there are beings mature in form without the intervention of birth or childhood; that there are sages and holy men placid and established in virtue, who by their own wisdom have ascertained and declared the nature of the present world and of other states of being. These are the three kinds of mental virtue and holiness. In consequence, cultivators, of this holy and virtuous life some beings, upon the dissolution of the system by death, are reproduced in the happy and heavenly worlds.

“If, cultivators, a holy and virtuous man experiences a desire in his mind, ‘Oh that upon the termination of my present existence by death I may be born of an opulent Khattiya family!’ and the event takes place that after the termination of the present life he is born of a rich family of the Khattiya tribe, the reason is that he was for that purpose sufficiently holy and virtuous. [The same is literally repeated respecting the Brahminical and cultivating classes: the heavenly worlds, and the Rūpa and Arūpa worlds.] If, cultivators, a holy and virtuous man experience a desire in his mind, ‘Oh that by the passions becoming extinct, I may know and fully ascertain for

myself, in the present state of being, the nature of the freedom of wisdom, consisting in a deliverance of the mind from the influence of desire!’ the event takes place; and if by the passions becoming extinct, he, in the present state of existence, knows, and fully ascertains for himself, the nature of the Freedom of Wisdom, consisting in a deliverance of the mind from the influence of desire, the reason is that he was for that purpose sufficiently holy and virtuous.”

When he had thus spoken, the Brahmins and cultivators of Weranja replied: “Excellent, O Gotama, most excellent. As though that which was overturned were placed erect; as though the covering were removed from a concealed object; as though a wanderer were directed to the right path, or as though a brightly shining lamp were brought into a dark place rendering all things visible; so has Gotama, in various modes, made known his doctrine. We take refuge in Gotama, in his doctrines and in his priests. Receive us, Gotama, as disciples. From this day to the end of our lives we take refuge in Gotama.”

MAHÁ DHAMMA SAMÁDÁNA SUTTAN.

THE LARGER DISCOURSE ON THE RESULTS OF CONDUCT.

When Bhagawá was residing near Sēwet, in the monastery founded by Anáthapindika at Jétawana, he called his priests, saying “Opriests.” The priests replied, “Sire;” when Bhagawá said: “There are many persons, priests, whose desires, wishes, and thoughts are, ‘Happy would it be if the things which are undesirable, disagreeable, and unpleasant were removed, and objects desirable, agreeable, and pleasant were abundantly increased.’ The persons, priests, who have this wish and desire, and who hold this opinion, experience an increase of undesirable

and unpleasant circumstances and a loss of the things which are desirable, agreeable, and pleasant. Do you, priests, understand the reason of this?"

"Bhagawá, Sire, is our teacher, our guide, our director. Bhagawá, declare the doctrine, and the priests, hearing the words of Bhagawá, will receive the instruction.

"If so, priests, hear and attentively consider; I will declare it."

The priests replied: "Do so, Sire."

Upon which Bhagawá said:—"The unlearned and sensual man, being a disregarder of Rahats, ignorant of their doctrines, and disobeying their precepts; being a disregarder of holy men, ignorant of their doctrines, and disobeying their precepts, knows neither what he ought to do nor what he ought to leave undone; what to regard nor what to disregard; and accordingly engages in that which he ought to avoid, and neglects that in which he ought to be engaged; regards that which he ought to disregard, and disregards that which he ought to regard, and by acting in this way brings increasingly upon himself that which is undesirable, disagreeable, and unpleasant; and fails to obtain the things which are desirable, agreeable, and pleasant. The cause of this is his being unwise.

"But, priests, the learned and eminent disciple of Buddha, being a regarder of Rahats, acquainted with their doctrines and obedient to their precepts; being a regarder of good men, acquainted with their doctrines, and obedient to their precepts, understands what he ought to do, and what he ought to leave undone; what he ought to regard and what to disregard; and accordingly does what he ought to do, and leaves that undone which he ought not to do; and by acting thus he avoids the things which are undesirable, disagreeable, and unpleasant, and obtains abundantly those which are desirable, agreeable, and pleasant. The cause of this is his being wise.

"There are, priests, four classes of conduct causative of events: namely, that which produces present sufferings and

future painful results ; that which produces present enjoyment and painful results ; that which produces present sorrow and future happy results ; and that which produces present enjoyment and future happiness.

“ The unwise and ignorant do not distinctly understand the line of conduct which produces present pain and future sorrow ; in consequence of which ignorance, instead of forsaking that line of conduct they follow it, and by so doing they bring increasingly upon themselves things undesirable, disagreeable, and unpleasant, and fail to obtain those which are desirable, agreeable, and pleasant. The reason of which is that these are the results of ignorance.

“ The unwise and ignorant do not distinctly know what is the line of conduct which, producing present enjoyment, leads to painful results, in consequence of which ignorance they do not forsake that line of conduct, but pursue it, and thus bring increasingly upon themselves things which are undesirable, disagreeable, and unpleasant, and fail to obtain those which are desirable, agreeable, and pleasant. The reason of which is that these are the results of ignorance.

“ The wise and learned distinctly understand the line of conduct, which, though painful at present, produces happy results ; and in consequence of that knowledge and learning pursue that line of conduct, and do not forsake it, and thus avoid those things which are undesirable, disagreeable, and unpleasant, and increasingly obtain those which are agreeable, pleasant, and desirable. The reason of which is that these are the results of wisdom.

“ What, priests, is that line of conduct which produces present pain and future sorrow ? There are some persons who, enduring sorrow and distress, are destroyers of animal life, or who are thieves, or lewd, or liars, or slanderers, or revilers, or foolish babblers, or covetous, or malignant, or heterodox, and who in consequence of this conduct have in the present world to endure

pain and anguish ; and who, upon the dissolution of the system, are after death reproduced in hell, the abode of wretchedness, misery, and continued anguish. This, priests, is the line of conduct which produces present pain and future sorrow.

“What is that line of conduct, priests, which affords present gratification but produces future misery? Some persons in the enjoyment of pleasure and delight are destroyers of animal life, thieves, lewd, liars, slanderers, revilers, foolish babblers, covetous, malignant, heterodox, and who from these practices experience pleasure and gratification ; but upon the dissolution of the system they are, after death, reproduced in hell, the abode of wretchedness, misery, and continued anguish. This, priests, is the line of conduct which affords present gratification, but produces future misery.

“What, priests, is that line of conduct which, although at present painful, produces happy results? Some persons, priests, although enduring pain and disquietude, abstain from destroying animal life, from dishonesty, from lewdness, from lies, from slander, from reviling, from vain babbling, from covetousness, from malignancy and from heterodoxy, and who in consequence of abstaining from these have to endure pain and disquietude ; but upon the dissolution of the system they will, after death, be reproduced in a happy heavenly world. This, priests, is the line of conduct which produces present pain, but leads to future happy results.

“What, priests, is that line of conduct which gives present pleasure and leads to future happiness? Some persons, priests, being happy and contented, abstain from destroying animal life, from dishonesty, from lewdness, from lies, from slanders, from reviling, from foolish babbling, from covetousness, from malignancy and from heterodoxy ; and who, in consequence of abstaining from these things, are happy and contented in the present world, and upon the dissolution of the system they will, after death, be reproduced in a happy heavenly world. This, priests,

is that line of conduct which gives present pleasure and leads to future happiness.

“ These, priests, are the four classes of conduct causative of events, and may be thus exemplified :—If a bitter gourd be poisoned, and a man come who loves life and would avoid death, who wishes for pleasure and is averse to pain, and it be said to him : ‘ O man ! this bitter gourd is poisoned ; if you desire it, you may eat it, but it is unpleasant in colour, in odour, and in taste, and will either cause death or mortal anguish.’ If he, disregarding this, instead of rejecting it, should eat of it, he will have no gratification from its colour, its taste, or its smell, but will either die or suffer excruciating pain. To this, priests, I compare the line of conduct which produces present pain and future suffering.

“ Or, priests, if there be a golden goblet, filled with sparkling, fragrant, and exquisitely flavored wine, yet mingled with poison, and a man come desirous of life and unwilling to die, attached to pleasure and averse to pain, and it is said to him, ‘ O man ! the wine in this chalice is of a beautiful colour, fragrant, and of exquisite flavor, but poison is mingled with it. Drink of it if you will ; but although you will be gratified with its colour, its fragrance, and its flavor, you will lose your life or endure mortal anguish.’ If he, disregarding this, should not reject the cup, but drink its contents, although gratified with its colour, its fragrance, and its flavor, he will either lose his life or endure mortal anguish. To this, priests, I compare the line of conduct which yields present pleasure, but produces future misery.

“ If, priests, there be cow’s urine, impregnated with various medicaments, and a man with jaundice come, and it be said to him, ‘ O man ! this cow’s urine is impregnated with powerful medicinal properties ; drink it if you will. It is disgusting to the eye, to the taste, and to the smell, but it will produce good effects.’ He, considering this, does not reject the remedy, but

drinks, and although it disgusts his sight, his smell, and his taste, he becomes cured. To this, priests, I compare the line of conduct which gives present pain but produces future happiness.

“If, priests, there be a mixture of curds, honey, clarified butter, and sugar, and a man with dysentery come, and it is said to him, ‘O man! this is a mixture of curds, honey, clarified butter and sugar; take it if you will. It is pleasing to the sight, to the taste and to the smell, and after taking it you will be better.’ He, considering this, does not reject the medicament, but takes it, his sight, taste, and smell are gratified, and upon using it he is benefited. To this, priests, I compare that line of conduct which produces present pleasure and future enjoyment.

“As, priests, during the sultry weather in the last month of the year, when the atmosphere is free from clouds, the sun, rising above the horizon, dispels the deep shades of night and shines, irradiating all around with its splendor; even so, priests, the doctrine of the line of conduct producing present pleasure and future happiness sheds its lustre, its refulgence, and its splendor around, dispelling the controversial darkness of multitudes of Samanas and Brahmins.”

When Bhagawá had thus spoken, the priests were much edified by the discourse.

THE RURAL ECONOMY OF THE SINHALESE,
(MORE PARTICULARLY WITH REFERENCE TO THE
DISTRICT OF SABARAGAMUWA), WITH SOME
ACCOUNT OF THEIR SUPERSTITIONS.

BY R. E. LEWIS, ESQ.

(*Read 4th November, 1848.*)

THE prosperity of a country without manufacturing pre-eminence, and wanting in commercial advantages, will naturally be tested by its adaptation for agricultural pursuits, and the industry and skill displayed by its inhabitants in cultivating the earth.

Ceylon, as the country of the Sinhalese, is not a commercial country even at its principal port, Colombo: The number of natives engaged in trade is comparatively few,—the Chetties (merchants of India) and Moormen carrying on the far greater part of the intermediate trade between the European importer and the consumer, these classes also being the chief importers of grain and cloth from India.

The chief pursuit of the Sinhalese is undoubtedly *agriculture*, though it would appear from the large importation of grain, equal in value to £460,000 annually, that their skill and industry is upon the most limited scale. Making every allowance for the influx of a large immigrant population of Malabars from India, to cultivate the coffee estates which have been planted by Europeans within the last eight years, it is yet well known and proved by the importations previous to that date, that the rice required for their own consumption has been partially supplied from other countries. The population is also very thinly scattered, many fine tracts of country being wholly uninhabited, and amounts to about one million and a half of

people, or about 59 persons to the square mile. From these facts we draw the conclusion, that either the soil is so exceedingly barren as only to yield a precarious crop under the greatest care and pains bestowed on its cultivation: that the quantity of land available for cultivation is exceedingly limited compared with the population: or that the cultivation is carried on in an unskilful and slothful manner. Without doubt all these causes exist, more or less, and operate to restrict the agriculture of this people, varying in degree in different parts of the country.

In the absence of communication by roads, and the nature of their cultivations chiefly restricting them to inhabit secluded valleys, it is not surprising that their agriculture should be carried on in the same rude and primitive manner as it was in past ages, apparently unimproved either in the manner of working the ground or in the implements used for the purpose. Their few wants being so easily supplied, there has been an absence of every inducement to increased and improved tillage; whilst their superstitious observances respecting times and seasons, handed down to them from a remote period, have had their effect in tying them down to the customs of their forefathers.

In considering the circumstances which have combined to keep the agriculture of the Sinhalese in its original primitive form, the taxation of paddy lands must not be left out of view, as unquestionably operating to prevent increased production. The amount of the tax is uncertain, and assessed yearly by persons appointed to that duty, and afterwards collected by a renter or middleman, whose powers under the present law are most vexatious at all times, and may at will be made highly oppressive to the cultivator. It is a feeling implanted in the human breast to resist extortion. The husbandman, seeing that an increase of crops leads also to an increase of his own burdens, and enables the tax-farmer to add to his annoyances,

feels deterred from increasing his cultivation, his fear of oppression preponderating over his desire to possess. My purpose being to treat of the agriculture of the country, and not of the system of its taxation, it is not for me to pursue this part of the subject further. It may be said, however, that the mode in which the taxes on grain are collected in the rural districts of the country, as affecting the morals and retarding the civilization of the inhabitants, is a subject worthy of the study of the philanthropist and statesman. Until the present system is abolished, and the taxes are collected directly from the payer by the authorized and responsible servants of Government, there is little room to expect any improvement whatever in the moral and social condition of the people. The labourer is worthy of his hire, says the proverb, and those means which will ensure it to him, which will give to the agriculturist the the fullest advantage of his industry, must precede any attempt to ameliorate the modes of tillage at present practised.

The natives of the interior for the most part subsist upon vegetable and farinaceous diet. Dried fish and dried deer flesh are used as a condiment in the seasoning of their dishes. Of animal food, with the exception of the flesh of a few wild animals, they consume but little. Rice is their staff of life. Kurakkan, a seed which is ground into flour, they also use in addition to coconuts, yams, sweet potatoes, and the fruit of the jack-tree. These with a few green vegetables and chillies for their curries, comprise the whole to which they give any attention in the way of cultivation, unless we except the coffee tree and the arekanut tree, which grow without any care whatever bestowed upon them about their dwellings.

The staple production of the Sinhalese is *paddy*, of which 11 different kinds are known. The *Ratkunda*, *Ballannvani*, *Marlanarige*, *Kallu Kombilli* and *Tattunval*, requiring about four months to bring them to maturity, are sown generally in March. The *Hinnati*, *Sudu hinnati*, *Mudu-kiriēl*, and

Kuru-vi are three months upon the ground, and are sown, if the season is favorable, in May or June. The kind called *Bálá Má-vi* requires the long period of five months before reaping, and is generally put in the ground in November. *Dassanel*, a kind grown in the low-country, is of very rapid growth, two months being sufficient to bring it to maturity; it is chiefly sown in June.

The periods of sowing paddy differ with the district and description to be sown. The growth so entirely depending upon the irrigation, the seasons for sowing must always be chosen when the streams are full, and at the time of year when a continuance of rain, either in the locality itself or in the higher ranges in which the streams take their rise, will insure an adequate supply throughout the period of growth. In these respects, locality with reference to the entire mountain district, or proximity to or distance from high ranges of hills, make the alternation of seasons and prevalence of wet or dry weather to differ over the whole face of the country, and consequently the periods of agricultural operations.

The cultivation of paddy is of two kinds: sowing upon cleared land upon the hill-side, and sowing in swamps where the land has been prepared by irrigation. The latter is the kind of cultivation more generally employed, and the lands used for the purpose can be sown from season to season and year to year, whereas the hill-paddy, as it is called, will only grow upon a soil which has been many years undisturbed, and upon which the exuberant vegetation must be allowed to spring up and grow for a lengthened period before it can be again used for this cultivation.

The paddy swamps of the low-country and the mountains are very different.

In the low-country, with very little variety of level, they are generally formed out of natural swamps, and the irrigation is performed with much labour by baling the water with large

scoops suspended to a triangle from one division of a the field to another. In the lower levels, owing to the want of a general system of drainage, the crops suffer greatly in very wet seasons, the plant being frequently carried away, or injured, from too long immersion in the water. Seasons of drought are no less fatal to it. On the mountains the formation of paddy fields is entirely artificial, and the whole system bears witness to considerable skill and ingenuity on the part of the cultivators. Passing through some of the rocky ravines of this picturesque country, one is surprised at the beautiful appearance of cultivation, which has obviously been produced under the greatest natural difficulties. When spots of this kind have been selected, a very superior description of rice is frequently produced, owing probably to the good natural soil so frequently found amongst rocks, and also from the great distance travelled over by the irrigating stream, more fertilizing particles are brought down by it than by streams, which take their rise in swampy ground and run but a short distance. The European inhabitant of Colombo who should perchance visit these romantic solitudes will find a relish and a nourishment in the dish of new rice set before him, which he little expected from that grain; something which will remind him of those exquisite compositions of wheaten flour, for which our country house-wives at home are so famous. I have said that the formation of paddy fields in the mountains is a work of much ingenuity and skill; it is also one which is always progressing step by step. Terrace above terrace is added to the field every season, until that which commenced in one little shelf, from above which the rocky streams dashed below, now covers the whole mountain gorge, with a bright harvest waving to the breeze.

The operations for preparing the ground for sowing the seed cover much time, not in the steady occupations of industry, but by the long intervals which occur between the several

processes to which the ground is subjected. The land having been grazed over by cattle since the last crop was taken, water is allowed to run over its baked surface for several weeks. When by this means it has become somewhat softened, it is hoed over in a manner which breaks the surface into clods, the sod coverings of which are turned over, and, water being once more suffered to run over it, the grasses are rotted and the whole field is now soft to a considerable depth. In this state buffalo ploughs, implements of the most primitive construction, consisting of a short sharp point of wood pressed against the soil, are used for breaking up the lumps of earth which remain. There can be no doubt, however, that the tramping of the huge animals which are tethered to the plough effects far more than the instrument itself in reducing the surface of the field to the consistency of mud. Besides the plough, in the low-country a square board, on which the driver continually jumps, is dragged by buffaloes over the fields for this purpose, and men in the glory of a Siphalese—mud up to the middle—work it about with scrapers and mamoties to produce an even consistence to the mud, and an even surface to receive the seed. This is sown broadcast, and the green spire generally makes its appearance the second day after. For three days after throwing in the seed no water is turned into the fields, and then for one day only just to keep the ground moist. Whilst the plant is gaining a hold upon the ground, a little water is allowed to flow into the fields, and a gentle supply of water kept on every alternate day during daylight until the paddy has three leaves. After this stage of its growth the water is allowed to flow two days at a time, alternately with two days when no new water is allowed to pass. This process is continued about a month, after which the water is turned on for about ten days at a time, and then stopped for a day or two until it is ripe. The system described applies more particularly to deep swamps; but where the fields are of a dry

nature, immediately the plant has taken well hold of the ground, the supply of water is kept up through the whole period of growth until the harvest is fit for the sickle.

To improve the fertility of their fields by manuring, the natives of Ceylon have but small ideas. Amongst the hills, cattle are pastured upon the stubble, and the straw after threshing is burnt upon the field; but pasturage of cattle, though good for the land, is only done for the purpose of feeding them, and the burning of straw is only done to get rid of what is left after re-thatching their buildings.

In the vicinity of the Kandy road the straw is sold to feed the draught bullocks, of which so many work on that line of communication with the interior. Some of the lands near the Kēlani-ganga, which can be reached by boats from Colombo, are manured with the bones collected in the gravets, but this practice is of very small extent, and has only been adopted within a few years. The system of cultivation by transplanting is sometimes adopted in the low-country. To do this only a few of the ridges which composed the field are sown with more than a double quantity of seed; when the plant is from ten inches to a foot in height, it is taken up and planted in rows in other parts of the field. This labour is generally performed by women, and it is said that the production from a given quantity of land so cultivated is considerably increased in quantity and quality. Wet weather is good for paddy crops, but dry weather is seldom injurious, if the supply of water for irrigation continues good. On the Eastern and Southern sides of Ceylon, where the rains only prevail for a limited period, and are succeeded by dry weather which continues unbroken until the return of the wet season, the crops are rendered somewhat precarious; and the remains of tanks which have been constructed in past ages, shew that a sufficiency of moisture from natural sources to bring their crops to maturity could never be depended upon in that part of the Island. Even on the

secondary ranges at the elevation of 1,700 feet in a South-Easterly direction from the Peak zone, the crops are frequently lost by the streams falling short before the North-East monsoon sets in.

The yield of paddy is various, depending upon soil, climate, and the nature of the soil through which the water for irrigation passes: 48-fold has been produced in many parts of the Mēda Kóralé, whilst in the Kaduwiṭi Kóralé, from two to six-fold only is taken from the land.

There are many superstitions which are observed by the Sinhalese in carrying on their cultivations, by inattention to which they would despair of reaping a crop, or fear some misfortune would overtake them. These superstitions mostly have reference to times and seasons for beginning and ending their various occupations, with the view of averting calamity which they believe they might draw upon themselves by not attending to these precautions. They hold it as unfortunate to commence the work of cultivation on the 1st or 2nd day of their month, and after the work is commenced it must be desisted from at certain intervals. Thus, supposing that the work was commenced on the 3rd of the month, it must not continue over the 7th, to be resumed on the 10th, progressing until the 13th, when an interval occurs until the 15th; the cultivation then goes on for seven days, to be discontinued one day and carried on five days, which completes their month. The foregoing describes the order of the observances, but the commencement is always determined by a "lucky day," and consultations with wise men, whose business it is to ascertain the auspicious moments, are never omitted. Priests, though frequently resorted to, are not the only persons in whom the people place confidence as being able to discover the important period. Learned men, so called, who have studied for the purpose, are applied to in such cases, these are chiefly the priests (*Unnánselá*), doctors (*Wedarállá*), and devil-dancers (*Kattáḍi*.)

Books on lucky days are supposed to have been written before the time of a traditional king named Mahá Sammata Rajjuruwo, whose queen, having become sick from a fright from tigers, was the first person cured by devil-dancing. To this period the origin of many other superstitions is referred. Almost every part of the business of life is undertaken by these simple people upon appointed days; they seem to have a singular dread lest misfortune should follow the neglect of these observances. Lucky days are sought for, for turning and hoeing the fields, sowing, tying fences, reaping and tramping out the grain, also for building the small houses for the people who watch the fields at night, and for tying up white tatties to scare away animals; again, for pounding the paddy and storing in their houses.

When grain is to be tramped or threshed from the straw by the feet of men or buffaloes, a place is selected and a curious ceremony follows. A hole being dug on the spot, a shell filled with the leaves of the Bó tree, the Nika and the Niyagaláwēla, and some Hillock (a long grass) is placed in it, besides a reaping hook, with precious stones, gold and silver, or substitutes for them. These being covered over with earth, a stone is placed above, and three rings are made round them with ashes, after which it is left until the stars appear at night, when it is supposed good luck has now come to the place, and the work must be commenced forthwith, the articles deposited in the ground being in the first place removed. Offerings of grain are sometimes but not invariably made to the priests; in the case of reaping the first fruits of a new field it is never omitted. The custom is to take sufficient rice boiled for a meal and a number of different kinds of cakes made from the flour; of these the holy man must partake before any one would dare to make use of the remainder of the crop.

The fields are seldom cultivated by the owners, most frequently they are given in charge to some one who undertakes

the whole of the labour and expense of the crop. In such a case the owner and the cultivator share equally, the former appointing somebody to be present at the tramping, to see that he is not cheated of his proper share.

The rent or tax payable to the king was one-tenth of the crop; except in the case of *Gamarála* (an obsolete title), who, being obliged to furnish the king's messengers with food when on journeys, were exempted.

Animals committing depredations in the fields are frequently caught in traps or killed by the watchers at night; but it is considered unclean to kill any animal for food in a paddy field. Thus we find every circumstance of life connected with some superstition.

Hill-Paddy.

Hill-paddy, of which there are many kinds, is sown in June. Six months suffice to bring to maturity the following kinds: *Rat-ēlvi*, *Batu-kiri-ēlvi*, *Gonabaru-ēlvi*, *Mudukiri-ēlvi*, *Laina-ēlvi* and *Vaikolla-ēlvi*; whilst *Pallai-ēlvi* grows so rapidly that it ripens in three months. Hill-paddy is never sown more frequently than once a year. It is planted upon land which has been under forest or very full-grown chena for many years, it is so exhausting a crop, or the land is naturally so poor in the ingredients for cereal production, that every crop taken requires newly-cleared land. Artificial manure is never applied; the ashes of the wood fires alone assist the fertility of the soil. Chenas are largely cultivated in the Kuruwiti, Navadun, Kukulu, and Aṭakalan Kórales in the Sabaragamuwa District. The crop of hill-paddy suffers more from drought than the grain cultivated in swamps; indeed any deficiency in the seasonable moisture is sure to result in a total failure of the crops. When the land is moderately good and the season propitious, the return from this cultivation is generally ten-fold. The work is generally conducted by the inhabitants of the

village together, who share equally in the produce; the women do their share of the work in weeding and harvesting, also in carrying the brush off the land to be used for firewood. It is computed that the labour of two men in this cultivation will produce sufficient for the subsistence of three persons. Swamp paddy is more prolific and the labor of cultivation easier, the labour of one man being supposed to be sufficient to raise the food of three and often more. The same superstitious ceremonies are observed with reference to the operations as described above.

Kurakkan.

Kurakkan, or Natcherin, is extensively cultivated on chena lands in this District; it is a small seed like brown mustard, which when ground into flour is used in making cakes. The same land will often bear two crops, but most frequently after the first, instead of a second crop of grain, chillies are sown. The cultivation of *kurakkan* is carried on most extensively in Bintenna; there it is said to yield frequently 50-fold. The natives, after the clearing and sowing is completed by the men, consider it degrading for any but the weaker sex to perform the remaining part of the labour, the weeding. The cropping and the threshing, therefore, is performed by cutting the heads from the plant and drying them on mats. When dry and of a bright brown colour, the heads are crushed in a basket or between mats, which soon disengages the small seed, and winnowing in *kulu*, (hand baskets) completes the process. The seed after winnowing and before storing is exposed to the sun in shallow trays, which hardens it. Before threshing or grinding they do not observe any form of divination to discover a happy time to commence the work,—a remarkable exception to the general rule. The cultivation of *kurakkan* is not generally profitable; the return compared with the labour expended will not yield a subsistence. It is only cultivated as an

addition to other productions, and it will grow upon land which is not good enough for hill-paddy. Many different seeds are sown with *kurakkan* and are cropped afterwards; a few of these are *Mun-ēta*, *Kollu*, *Ulundu*, and *Bímé*, all vetches. *Panna* a kind of corn, *Aba* (mustard), *Miris* (chillies), *Asamódagan* (a curry stuff), *Iringu* (Indian corn), *Amu* (small grain), *Mé-karal* (a kind of bean), *Wambatu* (brinjal), with *Kékiri*, *Tiyambará*, *Alu-puhul*, *Rata-puhul*, *Diya-labu*, and *Vetakolu*,—all different kinds of gourds and cucumbers.

Tobacco.

So very little tobacco is cultivated by the natives of Ceylon generally, and in the District of Sabaragamuwa less than in many other parts of the Island, that a very short notice will suffice to describe the simple operations connected with its culture. When it is intended to plant tobacco, cattle are penned upon the ground to manure it, after which the surface is broken up with the mamoty or hoe. After this, at distances of three feet apart every way, holes are dug about eighteen inches wide and as much as two feet deep, which are filled with cow-dung and soil.

In the meantime a nursery of young plants has been prepared, on newly-cleared ground under shade, well manured by the ashes of the burnt chena. When the seedlings have attained the size of three leaves, they are considered best to transplant into the holes; after which the utmost care is taken of them by shading and watching until the roots have taken firm hold of the ground. From this period until they arrive at maturity, the plants are continually inspected, to remove decaying leaves and insects to which they are very liable. Having attained the height of $2\frac{1}{2}$ feet, the top of the plant is cut off, and it is well earthed up round the roots; this prevents the plant running rapidly to seed and promotes the growth of the leaves. About three months is sufficient to bring the plant

to its full growth; the leaves are then cut and cured by the simple process of drying them on lines in the house. The quality of tobacco grown in this country is very inferior; it is mostly used for chewing with betel by the natives. One would readily suppose, that every native in the rural districts would produce in the neighbourhood of his dwelling sufficient tobacco for his own consumption, but such is not the case. On the contrary, it is one of those articles which the more enterprising inhabitants of the low-country carry up to the interior to barter for coffee, arekanuts and other produce; this is grown in Jaffna, Chilaw, and a few other places.

Until within the last few years a quantity of tobacco was grown in the elevated districts of Uva in the fine soil of virgin forests. This cultivation has now almost entirely disappeared since the natives have been prevented from encroaching upon the Crown lands. The quality of the Uva tobacco is finer than any other native kinds produced in the country; it is very rich and full-flavored, and from such that cigars and cheroots, equal to the most celebrated sorts, could be made from it. Large quantities were formerly brought down by the tavalams to Ratnapura, and bartered for salt, fish, and cocoanuts; but the trade in this article has almost entirely ceased. Dumbara is also celebrated for the quality of its tobacco, a circumstance doubtless attributable to the limestone formation on which rests a large portion of the soil of that fertile valley.

Tobacco being a lime plant and therefore a crop of the most exhausting nature to the soil, it is not surprising that its cultivation is not persevered with, in a country where the resuscitation of the soil by artificial means is so little understood. The quality of the article produced not only suffers by neglect in this respect, but by the total ignorance of the cultivators how to prepare the green leaf so as to improve and retain its narcotic qualities and those properties for which the article cultivated in the Spanish settlements is so justly celebrated.

In this place, it may be interesting to mention, that an enterprising foreigner has lately established a tobacco plantation at Tangalla, where he has introduced the kinds most in repute in the European markets, and employs a professional man—a Spaniard, I believe—to prepare the leaves and manufacture them into cigars. Those made from tobacco grown from Havannah seed are highly esteemed, and command a ready sale at good prices.

Cocoanuts, &c.

Experience has proved that only in the neighbourhood of the sea, the cocoanut tree grows to perfection ; yet it will bear much fruit at any elevation below 2,000 feet. It is therefore extraordinary that the inhabitants generally of the Sabaragamuwa District do not grow sufficient for their own use.

Cocoanuts are still brought in large quantities from the low-country and exchanged for local produce ; the tree being seldom met with except surrounding the houses of headmen, and about wihâres. About the station of Ratnapura, on the banks of the Kaluganga, the trees are very numerous, and, interspersed with the elegant bambu, add great beauty to the landscape. Whenever natives intend to plant cocoanuts, they always procure the seednuts from the low-country. The custom appears based upon experience that the tree thus raised bears better than one raised from seed grown on the spot. The young cocoanut plant is not, as in the plantations, sprouted by putting the nut upon the ground and partially burying it in soil, but two nuts being tied together by strips of the husk, are suspended over the branch of a tree until the green shoots break forth, when they are planted in holes. They allege as a reason for adopting this system, that they are safe from the depredations of pigs and also from white ants.

On occasions when jack and cocoanut trees are more particularly cared for, which is when the fruit is upon them, the

natives practise certain ceremonies by which they hope to preserve them from depredation. Having procured a number of young leaves of the cocoanut tree, they proceed to charm them, by laying them on the ground and burning *dummala* (rosin) round them. These leaves they then tie to each of the trees, and they believe that any one who eats of the fruit afterwards without claim to it will die.

If the ceremony is effectual, these leaves must be a very economical police, and might be introduced to protect more valuable property.

Arecanuts.

The trade in arecanuts is so extensive that any notice of the products of Sabaragamuwa would be incomplete without such description as the subject will admit of. The beautiful palm which produces the nuts grows to great perfection in this District; it delights in shady and moist places. Except around my own bungalow I never saw it cultivated, but wherever there are a few trees and the locality is favourable, they increase largely by the droppings, and thus have been formed the beautiful groups of this tree, which break the sameness of the scenery. They are collected in large quantities by Moormen, who send them in boatloads to Colombo, whence they are shipped to the coast and to the Maldives.

Betel.

These leaves, the produce of a kind of pepper vine, are not grown in quantities as in the low country to supply the markets, but in all the gardens; the plant is trained upon the jack trees, and supplies the wants of those belonging to the family. In the neighbourhood of towns, betel is trained upon sticks, and patches of ground to the extent of an acre are cultivated entirely with it. The women collect the leaves, packing them carefully in baskets, and take them to market.

All offerings of money to temples must be presented in a betel leaf. On the fence of a betel garden, a chatty painted black with white spots is frequently exposed, to scare away evil spirits. This superstition is not confined to betel plantations.

Cardamoms.

Cardamoms are not cultivated, but they are found in small quantities in most situations in the jungles. They are most plentiful about Gilimalé at the base of the mountains on the road to Adam's Peak from Ratnapura. They are frequently used green to chew instead of betel leaf.

Talipot palm.

These wonderful trees grow in great numbers about the villages in Sabaragamuwa, and like the other trees which from the beautiful groups about the houses, owe little to the care of man. When jungle is cut for sowing fine grain they are always left. Every native carries a strip of the leaf to shelter him from the sun and rain. When dried and sewed together, four pieces of leaves which may be carried by one man make an excellent portable tent, when placed on sticks cut from the neighbouring jungle. They are much used by the drivers of bullock tavalams, when they stop for the night; the pack saddles are built into a square heap and protected from the weather by talipots placed at the top. Temple headmen and Raṭemahatmayas when they travel are always followed by talipot bearers; the leaves for this purpose are generally sewn at the edges and inlaid with talc and colours. All kinds of temporary buildings are thatched with talipots; they are also used as a waterproof covering for loads carried in baskets. It would be almost impossible to describe the many uses to which they are applied by the natives.

Jack tree.

This valuable tree is seldom planted, but springs up from seed which have been scattered by accident around the dwellings of the natives. The seeds, and pulp in which they are contained within the fruit, are much used as food. The timber is perhaps the most useful grown on the Island, being adopted for every purpose : if cut young it is apt to be quickly worm-eaten. Beneath its shade the coffee tree grows luxuriantly, manured by offal from the houses, and not pruned down into heavy bearing.

Coffee tree.

The coffee bush in the upper part of this District attains to an extraordinary size ; in the Adigar's garden at Balan-goda there are several specimens of the thickness of a man's thigh. In several parts of the District plantations have been formed after the manner of cultivation practised by Europeans, and the small patches of coffee invariably found about the houses have been increased by planting. The produce is picked and very imperfectly prepared by the women and children, and is sold to the Moormen, who collect it principally in exchange for salt. The low price now obtained for it has almost annihilated the large trade in the article which was formerly carried on in Sabaragamuwa ; the cost of cultivation and transport are not covered by the Colombo price. The coffee is still picked and stored, literally costing nothing, and vast quantities will be poured in whenever the price rises high enough to remunerate the industrious Moormen and Chetties who collect it. The quantity produced annually in this District is stated in the official returns for 1844 at 32,410 bushels, or about 15,000 cwt. I believe this is underrated.

Jaggery palm.

Besides the Areca and Talipot palm, the Kitul or Jaggery palm is almost invariably found about the villages.

I have reason to believe it is never planted, but is sown by seeds being scattered by animals. This tree is seldom found in forests at an elevation exceeding 3,000 feet, and grows in steep places. It is much cut down by the natives, and when the inner pith is removed it is used for spouts to conduct the waters for irrigation, and from the roofs of their houses. The wood, which is particularly hard, appears as if it were composed of large dark fibers twisted together; it is much used to peg together the beams used in building; also as a substitute for iron as bars to windows, and for paddy pounders. But the chief use of the Kitul tree is to draw the toddy from it. The manner in which this is done is curious: as soon as the bud or spike appears, it is cut off within three inches of the stalk, and an incision made in which a mixture of limes, salt, black pepper, and garlick is put and tied up very tight. This is left for three days, after which it is removed and the bud again cut; the toddy will now flow into a chatty placed to receive it: the liquor may be taken from a tree in this way for several months at a time. It is remarkable that a tree which has been continually tapped for many years produces the hardest wood, the wood of the wild tree growing in the jungle being comparatively soft and spongy. Toddy when freshly drawn from the tree is sweet to the taste, and possesses all the properties of cane juice; after being boiled and the watery particles evaporated from it several times, it crystallises into a coarse sugar, capable of being refined into a superior article. After standing twenty-four hours toddy begins to ferment, and acquires an intoxicating quality; in this state it is called *rá*, and much of it is clandestinely consumed. I use this term because the arrack renter of the District has the power of levying a fine upon those who use it—a power too frequently and vexatiously exercised.

The *Goraka*, or Gamboge tree, produces a pulpy fruit

which the natives dry in the sun after cutting it in pieces, and use it to impart a powerful acid flavour to their curries. The *Kekuna* and several other trees produce seeds from which they express oil for anointing their bodies and lighting their dwellings. The primitive mode of obtaining the oil is by compressing the seeds previously put into a mat bag between two parallel bars of wood, and catching the oil as it flows into a chatty placed beneath.

Cattle.

Besides buffaloes, which are used in the cultivation of their paddy fields, a great many other horned cattle are bred in this District. The bullocks are chiefly hired by the Moormen tavalam keepers, who at certain periods of the year carry to the low country various articles of produce, which they have collected, and bring up salt, cocoanuts, fish, &c., for their bartering trade ; others are purchased for the bandy traffic of Colombo, and the Galle and Kandy roads. The numbers of cattle do not increase rapidly ; little attention is paid to them, their food is only what the uncultivated hills supply, with the occasional improvement of what may be found in the stubble fields. I have no doubt that were the natives more energetic, the number of cattle might soon be doubled. They are extremely afraid of misfortunes occurring to their cattle through the agency of evil spirits. To prevent this, once a year they procure a quantity of ripe plantains, which must be grown by the owner of the cattle, and place them with a dish of boiled rice on a small platform made for the purpose in the *maḍuna* (grain store) attached to their houses. A devil dancer (*Kaṭṭāḍiyá*), who has been previously engaged, then approaches and summons all the devils to appear to him ; he then falls to and eats as much as he pleases of the rice and plantains, and informs his employers that no harm will happen to their cattle during the ensuing year. The ceremony is concluded with the beating of

tom-toms and dancing. When bullocks are to be castrated, branded with the owner's name, or trained to carry loads, the wise men are invariably consulted to name a lucky day—otherwise they apprehend the animals would die under the operation ; and they frequently do so from the effects, nevertheless.

Houses.

The comfort of a dwelling must be estimated by the supposed wants of the inhabitants. Judging by this standard, the people of Ceylon—and of Sabaragamuwa in particular—appear to be, as the saying is, pretty well-to-do in the world. Their wants are few, and in describing the manner in which their cultivations are conducted, I have shown that they are easily supplied. In Sabaragamuwa the mode of building rooms to form the four sides of a small quadrangle, as in the Kandyan country, is not generally adopted ; but the houses generally consist of three rooms side by side under one roof, with the *maduwa* or grainstore, generally a shed open on one side, placed at right angles at one end. In the Kandyan country paddy is frequently stored, in a round place elevated by single stones from the ground, in the manner ricks are preserved from vermin at home, and for the same purpose. This is built of wattled sticks and plastered with clay and cowdung inside and out, and thatched ; it is seldom larger than a full sized water-butt.

It may not be generally known that there are owners of paddy lands in this country called paddy-misers. These unhappy persons, like the hoarders of coin, live penuriously in the midst of plenty ; they store up the produce of season after season, they cannot consume it, they will not sell it, or part with it to any one, it therefore perishes. Who shall say the miser is not a monomaniac ?

The superstitions of the natives respecting their dwellings are various. For putting in the posts, thatching, and light-

ing the first fire, lucky days must be consulted for. They consider it unlucky to build their houses from north to south, or *vice versâ*, as these points are called *gini kona* which means “fire end.” They have the idea, that persons living in houses so placed will be continually fighting with each other, and subject to all kinds of sickness, and the house itself will be sure to be burnt down. Sometimes a man and his family will desert a house they have inhabited all their lives, from the fear of devils. In this way they practise greatly upon the credulity of each other, frequently hiding near the house and pelting the roof with pebbles after dark, which, under the belief in the agency of evil spirits, causes the inmates to abandon their habitation. A death in the family not unfrequently causes them to abandon a dwelling in which the family have resided many years.

Frequently in taking up their lodging in one of the temporary buildings erected on clearings for *kurakkan*, they will strip the bark from the nearest trees of the standing forest in order to arrest the progress of the demons from whom they fear molestation.

Many of the peaked mountains of this district have given rise to legendary fictions, which still exercise an influence upon the natives. The story mentioned in Major Forbes’s account of a journey from the Wilson plains to Balangoda is still believed. The breaks in the Pettigala range of mountains which form an important feature in the view in descending from the zone to the romantic village of Galagama, are ascribed to the arrows of Râma. The mountain itself,—at least the upper part of it, is called “God’s garden,” and they believe misfortune will overtake any who presumes to fell the forest for cultivation. This superstition gave rise to much inconvenience to the Europeans who commenced clearing the land for coffee cultivation, every

cut finger, every blow from the branch of a tree, was looked upon as evidence of the Deity's displeasure. To the effect of this superstition I am inclined to ascribe the circumstance that the upper part of Pettigala, though surrounded by well populated valleys, was one of the few hills in the District which was covered with an original growth of forest, until purchased by Europeans for coffee cultivation. The superstitions respecting this mountain have doubtless been kept in remembrance by the eremite priests who live in the caves at its base.

Perhaps there is no District in which the priesthood is more numerous, or where their influence is more felt than in Sabaragamuwa. It is not my intention to diverge into a consideration of their religious observances; but the various superstitions which I have briefly glanced at, show that their sentiments partake more of fear than of hope. Instead of looking for the protection of a supreme and beneficent Being, they seek to avert by propitiation the misfortunes which they believe the spirits of evil have power to inflict.

This Paper has far exceeded in length the few remarks I intended to offer, the subject affording much greater scope for description and remark than I supposed at the commencement. Extended as these Notes appear to be, I feel that they are greatly curtailed of the amplification the subject would admit of; and those who take a pleasure in observing the manners and customs of a primitive people, will look for many more particulars than I have given.

SKETCHES IN THE NATURAL HISTORY
OF CEYLON.

BY EDGAR L. LAYARD, ESQ., C.M.E.S.

(Read 4th November, 1848.)

IN offering to the Society the accompanying Sketch on the Genus *Papilio* inhabiting Ceylon, I beg to make such few observations as will explain the plan which I propose to pursue, should my essay be deemed worthy of a place in the Society's Journal.

Little or nothing exists on the spot to show the progress that has been made in the investigation of the Fauna of the Island. I therefore propose to enumerate, from time to time, the various indigenous species of Insects, Birds, &c., giving a description of such as are new, briefly stating their locality, season of appearance, food, and any other peculiarities which may be interesting. In my text I shall follow, as closely as may be, the example of men of note who have pursued the same course, such as Hodgson, Sykes, Blyth, and many others, whom, though I cannot equal, I may at least follow. For the correctness of facts stated, I will vouch; for the correctness of the identification of species I cannot; although, to guard against mistakes to the utmost of my power, I will submit my specimens to the scrutiny of those who have the power of referring to the vast collections in England and India, and also to books, of which no Library in the Island possesses a single volume on Oriental Entomology or (with the exception of the Bengal Asiatic Society's Journal) Ornithology.

I had the honour some time since of reading before this Society a Paper on "Collecting and Rearing Lepidoptera

with a list of our indigenous Butterflies," and I purpose that the Entomological portion of these sketches shall in a manner constitute a continuation of that Paper.

ORDO. LEPIDOPTERA.

SECTIO. DIURNA.

Genus. Papilio.

This genus contains most of our largest diurnal Lepidoptera, two or three species measuring upwards of six inches in expanse. It is distributed over the whole of the Island, one species or another being found everywhere. Of all at present known, but one has the hind or inferior wings, terminating in long slender sharp pointed tails; eight have moderately lengthened tails, broad and spatulate; three have the tail still less produced and spatulate, gradually approaching the remaining three, in which the tail is altogether obsolete.

The Aurelia are attached to a branch by the tail, and a band round the middle; the head but little inclined, except in a few instances, which shall be noticed under the species in which they occur.

The larvæ are naked, and furnished with a fleshy, furcate tentacle, on the shoulder as it were, which they have the power of protruding and retracting. It is moistened with a strong scented fluid, and is, I believe, a means of defence against its parasitic enemies, the Ichneumon flies, which deposit their eggs in the living caterpillar; if the larvæ is touched the tentacle is rapidly thrust out, and struck on the irritating object. I observe that all the Papilionidæ whose metamorphoses I have followed feed on aromatic plants, such as the Citron. May not the juices of these plants supply the scented fluid alluded to?

The eggs present under the microscope a variety of singular forms, and the succession of changes from them to

the perfect fly is generally effected in from fifteen to thirty days.

P. Haliphron, var. This is a distinct species from the true *Haliphron* which is found in Celebes. The larva feeds on the *Aristolochia Indica* (Linn.), *sassanda* of the natives. The perfect insect is common and widely distributed, except in the peninsula of Jaffna, where, according to the Reverend F. Taylor, it is not found. I do not remember seeing it myself during either of the two visits I have made there at different seasons of the year.

P. Polymnestor. A common and widely distributed insect, though rare in Jaffna. The larvæ feed on different kinds of Citrus, the perfect fly appearing plentifully in May.

P. Epius. Agreeing in all respects with the last, except that the dingy variety is rather scarce.

P. Helenus. Not uncommon in the interior, at an elevation of about 3,540 feet. Larva unknown.

P. Polydorus. Very common and widely spread ; larva feeds on *Aristolochia Indica* (Linn.). Fly abundant in May and June.

P. Pammon. As the last, with the exception of the larva, which feeds on Citrus.

P. Hector. Common in July and widely distributed, larva closely resembles that of *Polydorus*, and often found feeding in company with it.

P. Mutius. Not common ; larva feeds on Citrus. The perfect fly appears in September.

P. Polytes. Uncommon ; I have only captured about a dozen specimens, and those in the month of June. It does not appear to extend to the hills. The larva is unknown to me.

P. Crino (Fabricius). This splendid insect is very periodical in its appearance, May being the season in which it is found in any abundance. It is then common, flying swiftly, and

generally in one direction, according to the wind. I never could detect a perfect fly alighting or hovering over flowers and shrubs, either for the purpose of feeding or depositing its ova; the larva is also unknown to me. The specimens taken in the neighbourhood of Colombo have the green band unbroken throughout their whole extent; those taken on the Western Coast have the band passing into the discoidal cell; while those from the interior have the band outside the cell, but very broken and interrupted. Can these be distinct varieties?

P. Sarpedon. A very common insect. Time of appearance, May and June. Larvæ feed on Cinnamon.

P. Eurypilus. Nearly allied to the preceding, but confined to the hills, and not common. I never met with the larva.

P. Agamemnon. Belonging to the same group as the two former; larva feeds on the Soursop. The perfect insect met with frequently in June and July. The pupæ of this, *Sarpedon*, and I presume of *Eurypilus*, are attached to the underside of leaves, almost horizontally, thus differing from the foregoing species.

P. Dissimilis. This approaches closely to the genus *Danais* or *Euplœa*, in the appearance of the perfect fly; the Larva is also furnished with spines. It feeds on the Cinnamon, and is common in April, the mature insects being developed in May. The pupa wants the knobs found on those of the other Papilionidæ, and resembles a piece of burnt stick; the foundation and suspending silk is black, being the only instance of that colour I have yet seen among the various silks spun by insects.

Papilio Birchii (Layard). This splendid, and hitherto rare, insect has been lately captured in some abundance by the Rev. W. Symons in the Kotmalé range. The first two specimens, from which the accompanying description was

taken, were presented to me by Woodford Birch, Esq., and taken by him at Kitulgala in the Ambagamuwa range.

Expanse of wing, about five inches : depth, two and a-half ; superior wing, velvet black, with a whitish uneven triangle extending over three parts of the surface towards the exterior margin, broken and crossed by the nerves which are black : inferior wings also velvety black, with a white centre as in *Polydorus*, but extending higher into the discoidal cell ; round the exterior margin are five narrow reddish lunules ; tails long and spatulate. Larvæ unknown. The perfect fly is on the wing in the months of March and April, frequenting shady roads and open spaces in the jungle. It is very wary, and flies with great rapidity on being alarmed.

P. Marianna (Layard). This lovely and graceful insect was first observed by me at Kitulgala, between Ambagamuwa and Yatiyantota. It is the only instance we have in this country of that group of Papilionidæ termed by collectors "small tails ;" as a specimen also it is unique, and I am indebted to the liberality of Woodford Birch, Esq., for its possession.

Wings, from three inches to three and a-quarter in expanse ; from shoulder to end of tail two inches two lines ; length of tail nine lines. Ground colour, greenish white : superior wings with seven black bands varying from about one to one and a half lines apart ; the first, about one and half lines from the shoulder extending from the anterior to the interior margin ; the second rather beyond the anal nerve ; the third, fourth and fifth, across the discoidal cell ; the sixth into the anal area ; and the seventh occupying the whole border of the exterior margin, from the apical to the anal angle. Inferior wings with a series of black marginal lunules, the second and third extended down the tail, which is slender and pointed : a black patch crosses the discoidal cell near the scutellar angle, and the marginal lunules are surmounted

by similarly coloured wavey marks. The underside of the superior wing is the same as the upper, but that of the lower wing is marked with several dots and long stripes, which appear faintly through on the upper surface. A black line runs down the centre of the body from the base of the antennæ to the end of the abdomen ; two lateral lines, springing from the base of the wings, terminate in a similar way.

The perfect insects frequent moist glades in the jungle, alighting on the edges of the streams and drinking, in which act this specimen was captured. Larvæ unknown.

A CATALOGUE OF BOOKS IN THE TAMIL
LANGUAGE, WITH THE NAMES OF THE AUTHORS,
THE SUBJECTS, AND THE DATES, AS FAR AS
THEY CAN BE ASCERTAINED.

BY SIMON CASIE CHETTY, ESQ., C.M.R.A.S.

(Read June 3, 1848, and February 24, 1849.)

SECTION 1.—PHILOLOGY.

1. *Akattiyam*.

A GRAMMAR, so called from *Akattiyāṇ* or *Agastya*, the reputed inventor of the Tamil Language. Who the author of this work was is not certain ; some regard it as the genuine composition of *Agastya* himself, whilst others maintain that it was written by another person under his name, long after his time. It is, however, not the less esteemed among the literati of the south of India, and is generally consulted by them as a standard work.

2. *Tolkáppiyam*.

Another grammar, the oldest now in existence. It is divided into three parts, comprising 1,276 *sutras*, or aphorisms, in verse ; but it is written in so abstruse and difficult a style that few can understand it. The author is called from the title of his work *Tolkáppiyāṇ*, but his real name was *Tiranaṭumákkiṇi*, and he is said to have lived at *Tolkáppiyakkudi*, a village situated to the south of Madura. A tradition states that he was a disciple of *Agastya*, and having quarrelled with him composed the present work, with a view of supplanting the one written by his master.

3. *Naññūl.*

Another Grammar, written by a *Jaina* ascetic, named *Pavaṇanti*, and inscribed to the king *Chéyakankaṇ*, who is conjectured to have reigned at Madura about 800 years ago. The author had proposed to treat of his subject under five different heads, viz., Letters, Words, Composition, Versification, and Embellishment ; but having died before he had completed his design, the work comprises only the first two heads.

4. *Virasóliyam.*

Another Grammar, so called from *Virasóliyaṇ*, by whom it was written. It chiefly treats of Orthography and Etymology, as also of the rules of Versification, and is probably of the same date as the preceding work.

5. *Néminátam.*

A treatise on Orthography and Etymology : by *Kuṇavira Paṇḍitaṇ*.

6. *Kárikai.*

A treatise on Versification, by a *Jaina* ascetic, named *Amir-tasákaraṇ*, or “the sea of Nectar,” who flourished some time after *Pavaṇanti*. This work is, however, considered very obscure, in a great measure to the studied brevity of the style employed : hence the proverb “Better live by beating the *Périkai* (kettle drum) than by writing verses by studying the *Kárikai*.”

7. *Tañḍiyalaṅkáram.*8. *Máraṇalaṅkáram.*

Two different treatises on Rhetoric : one by *Tañḍi A'siriyaṇ* and the other by *Máraṇ*.

9. *Iraiyaṇár Akapporuḷ.*

A treatise on the choice of subjects for amatory poems, consisting of a series of rules and examples, written by

Iraiyāṇār, the head professor of the ancient Tamil University at Madura. The title *Irai*, or *Iraiyāṇār*, being also applicable to *Siva*, his votaries believe it to have been revealed by him directly to the University.

10. *Nampi Akapporul*.

A treatise on the Composition of Amatory Poems : by *Nārkavirācha Nampi*.

11. *Purapporul*.

A treatise on the Composition of War-chants or Moral Verses.

12. *Kuvalayāṇantam*.

A treatise on Grammar and Rhetoric.

13. *Yāpparunḡkalam*.

14. *Chaṅkayāppu*.

Two different treatises on Prosody and Versification : by two different authors.

15. *Aṇiyiyal*.

A treatise on Rhetorical Figures.

16. *Cheyguliyal*.

17. *Kavichākaram*.

18. *Pirapanta-tīpam*.

19. *Ariyaviti*.

20. *Pirayōka-civēkam*.

Different treatises by different authors, containing rules for the construction of various kinds of poems.

21. *Pañchalakkana Pirayōkappayaṇ*.

A treatise on Grammar in all its parts, consisting of a series of 1,000 verses, written by *Kallaren*.

22. *Chitampara Pāḍḍiyal*.

23. *Champanta Pāḍḍiyal*.

24. *Navanīta Pāddiyal.*

Three different treatises by three different authors, each consisting of a centum of stanzas on the powers of the first letter with which a poem commences, and the right selection of the same.

25. *Poruttaviyal.*

A treatise on the subject of Invocation, &c., at the beginning of a poem.

26. *Ilakkana Vilakkam.*

An exposition of the true rules of Grammar, with strictures on the *Nanṇūl*: by *Vaitiyanāta Paṇḍāram*.

27. *Ilakkana Vilakka Chūrdvaḷi.*

A counter-blast to the preceding work, and scholium for the elucidation of obscure passages in the *Nanṇūl*: by *Chivañāṇa Tampirāṇ*.

28. *Ilakkana Kottu.*

A collection of rules on the declensions of Nouns and conjugations of Verbs : by *Chuvāmināta Tampirāṇ*.

29. *Ilakkana Tiraḍḍu.*

A compendium of the grammatical aphorisms of *Pavananti*.

30. *Nanṇūl Chūttira Virutti.*

An exposition of the rules of Grammar according to the *Nanṇūl*: by *Chivañāṇa Tampirāṇ*.

31. *Nanṇūl Virutti Urai.*

An explanation of the text of the *Nanṇūl*, written by *Chaṅkara Namachchivāyar*, a poet of Tirunelvéli, at the request of *Marutappa Tévaṇ*, Poligar of Uṭṭumālai, about 1770 A.D.

32. *Nanṇūl Kāṇḍikai Urai.*

Another explanation of the text of the *Nanṇūl*: by *Vichā-kapperumāl Aiyar*, of *Tiruttanikai*, near Madras.

33. *Tolkáppiya Chúttira Virutti.*

An exposition of the rules of Grammar according to the *Tolkáppiyam*.

34. *Aṇiyiyal Vilakkam.*

Illustrations of the rules of Poetry and Rhetoric : by *Charavanapperumál Aiyar*, of Madras.

35. *Iyattamil Churukkam.*

A compendium of the rules of Grammar with regard to compositions in prose Tamil : by the same author as the last.

36. *Ilakkana Viṇávidai.*

An explanation of Grammar by means of questions and answers in prose : by *Tándavaráya Mutaliyár*, Madras, 1828.

37. *Ilakkaṇachchurukka Viṇávidai.*

Another explanation, like the preceding : by *Vichákaperumál Aiyar*, of Madras, 1828.

38. *Uraiyari Naṇṇúl.*

An exposition of the *Naṇṇúl*, written in the *A'chiriya* metre : by *A'ṇḍi Pulavar*, of Uṭṭaṅkál.

39. *Urichchol.*

A vocabulary ascribed to a *Chaiva* ascetic, named *Káṅkéyan*, the date of whose existence is, however, involved in obscurity. Like all other ancient Tamil compositions this work is written in verse, and the author has divided it into ten chapters, the first of which treats of the deities ; the second of man ; the third of beasts and birds ; the fourth of plants ; the fifth, sixth, and seventh of metals and minerals and of various other objects ; the eighth and ninth of words expressing qualities and actions ; and the tenth of words of different significations. It is chiefly designed for the use of schools, and as such is held in general esteem.

40. *Tivákaram*.

Another vocabulary, similar in character to the preceding, but much more copious, and consisting of 2,386 couplets. The author, *Chéntaṇ*, was a native of *Ampal*, a village situated on the banks of the *Káveri*. Some place him in the thirteenth century, but we have no authentic data to determine it.

41. *Piṅkalantai*.

Another vocabulary, so called from its author *Piṅkalaṇ*, a distinguished *Chaiva* ascetic. Its arrangement is the same as the *Tivákaram*, and it serves in a great measure to supply the deficiencies of that work.

42. *E'kapata Nikaṇḍu*.43. *Kayákara Nikaṇḍu*.44. *Irévaṇachittar Chúttiram*.

Different vocabularies by different authors, but none of them in general use.

45. *Auvai Nikaṇḍu*.

Synonyma of Plants : by *Auvaiyár*, the celebrated Tamil poetess, who flourished in the ninth century.

46. *Potiya Nikaṇḍu*.

Another, like the preceding, but by a different author.

47. *Chúdámaṇi Nikaṇḍu*.

A vocabulary, arranged under twelve heads, and consisting of more than 1,200 stanzas. The author, *Vira Maṇḍalavaṇ*, was a *Chaiṇa* king ; but neither the name of his kingdom nor the chronology of his reign is known. His work, however, is posterior to the *Tivákaram* and the *Piṅkalantai*, since he notices them both in his introductory stanzas.

48. *A'chiriya Nikaṇḍu*.

Another vocabulary, so called from the verses being composed throughout in the *A'chiriya* metre. It follows

very closely the former, both in the matter and in the arrangement, and is said to have been written by *A'ndip-pulavar*, of *Uṭṭaṅkál*.

For the following, the Tamils are indebted to European writers :—

1. *Toṇṇūl Viḷakkam*.

An exposition of the rules of Grammar, including Poetry, written by the Rev. Father C. J. Beschi, otherwise called *Viramámuni*, or “The Great Champion Devotee.” It is divided into five chapters, comprising 829 *chúttirams*, each of which has a series of examples from classical authorities appended to it. The assembly of Tamil poets, to whose criticism it was submitted by the author, duly appreciating its merits, is said to have conferred on it the title of *Terut-kuru*, or “The Intellectual Monitor,” and it is doubtless the best work on Grammar now extant in the Tamil language.

2. *Grammatica Damulica* : a Tamil Grammar, in Latin : by the Rev. B. Zeigenbalg, Halle, 1716.

3. A Grammar of the Common Dialect of the Tamil Language, termed *Koḍun Tamil*, in Latin : by the Rev. Father C. J. Beschi, 1729.

4. A Grammar of the High Dialect of the Tamil Language, termed *Chen Tamil*, in Latin : by the Rev. Father C. J. Beschi, 1730.

5. A Grammar of the Tamil Language : Vepery, 1789.

6. A translation of Beschi's *Koḍun Tamil* Grammar into English : by the Rev. G. H. Horst, Vepery, 1806.

7. A translation of Beschi's *Chen Tamil* Grammar into English : by B. G. Babington, Esq., Madras, 1822.

8. A Tamil Grammar in English : by the Rev. R. Anderson, London, 1821.

9. Another, similar : by the Rev. C. T. E. Rhenius, Madras, 1836.

10. An abridgment of the same : Madras, 1845.

10. An abridgment of the Latin Grammar in Tamil : Pondicherry, 1845.

11. An abridgment of the French Grammar in Tamil : Pondicherry, 1845.

12. An abridgment of Murray's English Grammar in Tamil : Madras, 1828.

14. *Chatur Akarāti.*

A Tamil Dictionary, compiled by the Rev. Father C. J. Beschi, in 1732, and so called from its consisting of four (*chatur*) distinct parts, the first of which exhibits all the words of different significations ; the second, the words of the same significations ; the third, all the collective nouns or generic words ; and the fourth, the different words which rhyme together.

15. A Dictionary, Tamil and Latin : by the same author.

16. A Dictionary, Tamil and Portuguese : by the same author.

17. A Dictionary of the Malabar (Tamil) Language : by the Rev. B. Ziegenbalg, Halle, 1716.

18. A Dictionary, Tamil and French : by the Rev. Father Du Bourges, formerly of Madras.

19. A Dictionary, Latin and Tamil : by the Rev. Father D. Magny.

20. A Dictionary, French and Tamil, and Tamil and French : by Lieutenant A. Blain, of the 4th Regt. Infantry, Pondicherry, Paris, 1831.

21. A Dictionary, English and Tamil : by the Rev. T. Fabricius.

22. A Dictionary, Tamil and English : by the same author.

23. A Dictionary, Tamil and English : by the Rev. J. P. Rottler, Madras, 1834-41.

24. A Manual Dictionary of the Tamil Language : Jaffna, 1842. This work contains about 58,500 words, being

nearly four times as many as are found in the whole of the *Chatur Akarāṭi*.

25. Manual Lexicon, English and Tamil, giving in Tamil all important English words, and the use of many in phrases : by the Rev. J. Knight and the Rev. R. Spaulding, Madras, 1844.

26. A Dictionary, Latin, French, and Tamil : Pondicherry, 1846.

SECTION II.—MYTHOLOGY, HISTORY, AND BIOGRAPHY.

1. *Irāmāyaṇam*.

A poem in seven books, which are again divided into 128 cantos, comprising 12,016 stanzas. It narrates the adventures of *Rāma*, the conqueror of Ceylon, as told originally by the sage *Vālmiki* in Sanskrit, but with far greater poetical embellishments. The author, *Kampan*, has left nothing on record respecting his personal history, except that he was a native of *Tiruvaluntūr* in the Tanjore country, and undertook and finished his voluminous composition under the patronage of *Chadaiyaṇ*, a wealthy farmer of *Veṇṇeynellūr*, in the year of *Chaka* 808 (886 A.D.). A tradition, however, is current that he enjoyed high favour at the court of *Kulóttuṅka Chóla*, and was honoured by that king with the title of *Kavich-chakkaravartti*, or “Prince of Poets,” but that proving himself inconsolable at the death of his son *Ampikápati*, who was impaled alive for an attempt to seduce the king’s daughter, he incurred the royal displeasure, and eventually perished by the hand of the executioner.

2. *Kanta Purāṇam*.

This poem, like the preceding, consists of seven books, but is divided into 141 cantos, and contains 10,305 stanzas. It has for its subject principally the conflict between the demons and the gods, and the final overthrow of the former

by the latter, under the conduct of *Skanta*, who sprang from the frontal eye of *Siva*; but treats of every legend connected with Hinduism, and likewise has a canto called *Aṇḍakócha Paḍalam*, exclusively devoted to a description of the different systems of world, and of their relative magnitudes and distances, and the causes of eclipses of the sun and moon, as revealed by *Chukkkiraṇ*, the preceptor of the demons to their king *Chûraṇ*. Its author, *Kachchiyappar*, was a Brahman of *Kāñchîpuram* (Conjeveram), in the Carnatic; and Mr. Roberts, in his "Oriental Illustrations of the Sacred Scriptures," p. 3, supposes that it may have been written 1,500 years ago; but this supposition is evidently a mistake, as some of the personages whose names occur in the introductory stanzas appeared to have lived not earlier than the tenth or eleventh century.

3. *Páratam*.

A poem in 50 cantos, comprising 4,288 stanzas. Treats of the ancestry of the *Páṇḍavar* and *Kauravar* princes, and of the great battle which was fought between them near Delhi, in consequence of the latter having dispossessed the former of their kingdom by a device. The author, *Villiputtûr A'lvár*, was a chief of the *Vaishnavas* at *Chañiyûr*, in the Carnatic, and it is believed that he wrote his work by desire of the king *Karikála Chólaṇ*, whose installation is dated 465 A.D.

4. *Iraku Vaṅkisham*.

A poem in 26 cantos, comprising 2,444 stanzas. Treats of the history of *Ráma's* ancestors from *Iraku* and of that of *Ráma* himself. It is an imitation from *Kálitácha's* Sanskrit work under the same title: by *Arachakéchari*, brother of *Pararácha Chékaraṇ*, king of Jaffna.

5. *Naiḍatam*.

A poem in 28 cantos, comprising 1,171 stanzas. Treats of

the adventures of *Nalaṇ*, king of *Nishata*, and *Tamayanti*, his consort. This work was composed by no less a personage than the king *Ativīra Rāma Pāṇḍiyan*, who reigned at Madura about the middle of the eleventh century, and Mr. Ellis in noticing it in his commentary on the *Kural*, p. 163, observes that “its high and courteous tone, notwithstanding the frequent occurrence of those gaudy images and far-sought allusions which European taste will denominate conceits, is worthy of the princely author.”

6. *Nala Venpá.*

A poem in 3 cantos, comprising 418 stanzas of the species called *venpá*. Treats of the same subject as the last, but with a studied brevity. The author, *Pukalénti*, was a contemporary of *Kampaṇ*, and, like him, attached to the court of the king *Kulótunṅka Chólaṇ*.

7. *Chintámaṇi.*

A poem in 10 cantos, comprising 3,315 stanzas. “The queen *Vichaiyai*, the mother of *Chivakaṇ*, the hero of the poem, was forced to fly, while far gone with child of him, from the field of battle in which the king her husband *Chachchantaṇ* was slain by his rebellious minister, and was overtaken by the pains of labour in a burning ground. Here she was compelled to abandon her new-born infant, who was found and brought up by a man of the Vaisya caste. The mother took refuge with a society of holy virgins in the wilderness, where she was discovered at length by her son, after he had arrived at a mature age, and had acquired great renown by many glorious achievements.” Ellis’ *Kural*, p. 260. The author’s name is not mentioned, but he describes himself as a *Chaina* sage.

8. *Chilappatikáram.*

This poem treats of the adventures of a *Cheddi*, named *Kóvalaṇ*, who was put to death at Madura on a false charge

of having stolen a *Chilampu*, or foot-ring, belonging to the king. It is written in a very high style in illustration of the rules of Tamil prosody, but the author and the date are both unknown.

9. *Periya Purāṇam*.

A poem in 56 cantos, comprising 4,000 stanzas. Recounts the devotion and marvellous actions of the sixty-three *Toṇḍars*, or special votaries of *Siva*, including the king *Maṇu Nīti Chólaṇ*, who is said to have put his only son to death for driving over and killing a calf accidentally in the street of *Tiruvaluntúr*. By *Chékkilár*.

10. *Tiruvilaiyādal Purāṇam*.

A poem in 72 cantos, comprising 3,362 stanzas. Gives an account of the sixty-four sports of *Siva* in his character as *Chuntarésmarar* at Madura, as also of the *Pāṇḍiya* kings in whose reigns they occurred. Though replete with absurdities, it contains some fragments of real history, especially in relation to the contest between the *Chaivas* and *Buddhists*, and the extirpation of the latter by the former under the government of *Kuṇa Pāṇḍiyaṇ*. The author, *Parañchóti Tampirāṇ*, was a *Chaiva* ascetic, who flourished in the middle of the eleventh century.

An analysis of this poem has been published by the Rev. W. Taylor, in his "Oriental Historical Manuscripts," Vol. I.

11. *Tiruvátavúr Purāṇam*.

A poem in 7 cantos, comprising 545 stanzas. Treats of the history of *Tiruvátavúrar*, otherwise called *Mánikkaváchakar*, who was prime minister to the king *Arimarttaṇa Pāṇḍiyaṇ* at Maturai, and afterwards, adopting the life of an ascetic, retired to Chitamparam, and there distinguished himself by defeating the *Buddhists* of Ceylon in controversy, and converting them to the *Chaiva* religion.

The sixth canto of this poem has been translated by me

into English, and published with Notes in the Society's Journal for 1846.

12. *Arichchantira Purāṇam.*

A poem in 10 cantos, comprising 1,212 stanzas. Describes the adventures of the king *Arichchantiraṇ*, or *Harischandra*, who was subjected to many trials and afflictions, and lost his kingdom as well as his wife and son, and became himself sold as a slave to a *Paraiyaṇ*; but was finally restored to his former prosperity. The author, *Virakaviráyaṇ*, represents himself as a poet of *Nallúr*, and to have recited his work before the assembly of the learned critics at Maturai, in the year of *Chaka* 1446, or 1524 A.D.

13. *Valaivichu Purāṇam.*

This poem treats of the legend of *Parvati* as the daughter of *Tiriyampakaṇ*, king of the Parawas, and *Varuṇa Valli*, his consort, under the name of *Tiraichér Maḍantai*.

An abstract of this poem has been given by me in my remarks on the origin and history of the *Parawas*. Vide Journal of the Royal Asiatic Society, vol. IV.

14. *Káchi Káṇḍam.*

A poem in 101 cantos, comprising 2,529 stanzas. Treats of the holy city of *Káchi* or Benares, as also of the prescribed observances of men and women in different conditions of life, and of the atonements appointed for various sins. The author is the same as that of No. 5.

15. *Iliṅka Purāṇam.*

A poem treating of the origin of the different *iliṅkas* of *Siva*, and of the merits of the worship offered to them, illustrated by sundry legends.

16. *Chevvanti Purāṇam.*

A poem in 12 cantos. Treats of the submersion of *Uraiyúr*, the capital of the king *Parantaka Chóla*, by a shower of

earth, as a punishment for his having forcibly taken from the sage *Chaḍaimuni* some *chevanti* flowers, which the latter had reared for offering at the shrine of *Siva* at Trichinopoly.

17. *Vichuva Purāṇam.*

Legends of *Vichuva Karmá*, the Hindú *Vulcan*.

18. *Chittira Purāṇam.*

Legends of *Chitrāgupta*, the Register of *Yama*, the god of death.

19. *Vallhyammaṇ Purāṇam.*

A poem treating of the loves and marriage of *Skanda* with *Valli*, who was brought up by the *Védas* in the wood.

20. *Virackiṅkātana Purāṇam.*

A poem treating of the legend of *Chāraṅka Tévar*, of *Kumpakóṇam* : by *Vélaiya Chuvámi*.

The following poems, from No. 21 to 41, are styled *Sthalla Purāṇas*, as they have for their subjects chiefly the origin and sanctity of the different *stalam*s, or places of Hindú worship in India. Mr. Ellis, in his tract on Mirasi Rights, speaking of these poems, observes that “after passing the fables of mythological periods, with which they usually commence, and gaining the bounds of rational chronology, they contain much of what may be considered as the real history of the country, though still obscured occasionally by allegory and distorted by extravagance.”

21. *Aruṇáchala Purāṇam.*

A poem in 12 cantos, comprising 586 stanzas. Treats of the shrine of *Siva* at *Aruṇáchalam*, or *Tiruvannámalai*, in the Carnatic, where, when *Brahma* and *Viṣṇu* contended for superiority, he is said to have sprung up before them in the form of a fiery pillar, entirely passing through all worlds, and told them that whoever succeeded in finding his summit or base should be the greatest, which neither of them was

able to do, notwithstanding the one assuming the shape of a swan ascended to the region of immensity, and the other, transforming himself into a boar, dug through the earth with his tusks, and descended into the abyss. The author's name is *Ellappa*, but the date is unknown.

22. *Viruttáchala Puráṇam.*

This poem is also termed *Tirumaḍukkunṛa Puráṇam*. It consists of 434 stanzas, distributed into 18 cantos, and treats of the shrine of *Siva* at *Viruttáchalam*, a hill-town to the south of Madras. The author and the date are both unknown.

23. *Tiruchchentūr Puráṇam.*

A poem in 18 cantos, comprising 900 stanzas, treats of the shrine of *Skanda* at *Tiruchchentūr*, Tirunelveli. The author and the date both unknown.

24. *Chétu Puráṇam.*

A poem in 50 cantos, comprising 3,437 stanzas. Treats of the shrine of *Siva* at *Iráméchuram*, as also of the merits of bathing in certain spots of the sea in that neighbourhood, especially on the side of the rocks supposed to be the remains of the *chétu* or bridge erected by *Rāma* for passing over with his army to Ceylon. The author is called *Aḷakiya Téchikar*, but the date is unknown.

25. *Kóyit Puráṇam.*

A poem in 5 cantos, comprising 410 stanzas. Treats of the shrine of *Siva* at *Chitamparam*, where once upon a time he is said to have manifested his presence visibly among his worshippers, and danced the *Tāṇḍavam* before them. The author is called *Umápati Chivácháriyar*, but the date is unknown.

26. *Tirukkalukkunṛa Puráṇam.*

This poem describes the shrine of *Siva* at *Kalukkunṛam*, or “the Eagle Mountain,” so called from the sons of the sage

Viruttachiva, who were born as eagles, having obtained their human forms by doing penance on its summit. The author is said to have been a blind poet, named *Kavi Vira Rákava Mutaliyár*.

27. *Védapuri Puráṇam*.

A poem treating of the shrines of *Siva* at *Védapuri*, or *Tiruveḍkaláru*, near *Chitambaram*, supposed to have been the joint production of the celebrated *Cháiva* devotees *Appar Chuntarar* and *Mánikkaváchakar*.

28. *Káñchi Puráṇam*.

A poem treating of the shrines of *Siva* and *Parvati* at *Kañchipuram* : by the same author as that of No. 1.

29. *Paḷani Puráṇam*.

A poem treating of the shrine of *Skanda* at *Paḷani*, in the south of *Coimbatore*.

30. *Tiruppuvaṇa Puráṇam*.

A poem treating of the shrine of *Siva* at *Tiruppuvaṇam*, near *Chitambaram*.

31. *Tiruppáchúr Puráṇam*.

A poem treating of the shrine of *Siva* at *Tiruppáchúr*, in the *Carnatic*.

32. *Champukésvara Puráṇam*.

A poem treating of the shrine of *Siva* at *Champukésvara*, or *Tiruvánaikká*, near *Trichinopoly*.

33. *Tiruvaiyattu Puráṇam*.

A poem treating of the shrines of *Siva* at *Tiruvaiyáru*, near *Tanjore*.

34. *Kálatti Puráṇam*.

A poem treating of the shrine of *Siva* at *Kálatti*, or *Ká-lástiri*, a mountain and town in the *Carnatic*, where a black elephant, as the name implies, is said to have worshipped him. This work was undertaken by *Karuṇaippirakácha*

Chuvámi, but was finished by his brothers *Chivapparakácha Chuvámi* and *Vélaiya Chuvámi*, all of whom were *Chaiva* priests, and flourished in the seventeenth century.

35. *Nallúr Puráṇam.*

A poem treating of the shrine of *Siva* at *Nallúr* : by *Vélaiya Chuvámi*.

36. *Tirukúva Puráṇam.*

A poem treating of the shrine of *Siva* at *Tirukúvam* : by *Chivapparakácha Chuvámi*.

37. *Chirkáli Puráṇam.*

A poem treating of the shrine of *Siva* at *Chirkáli*, or “*Seegally*,” near *Chitambaram* : by *Aruṇáchala Kaviráyar*, who lived between 1705 and 1772 A.D.

38. *Kuḷattúr Puráṇam.*

A poem treating of the shrine of *Skanda* at *Kuḷattúr*, near *Madras* : by *Charavaṇapperumál Aiyar*.

39. *Taṇikai Puráṇam.*

A poem treating of the shrine of *Skanda* at *Taṇikai*, near *Madras* : by *Kantappa Aiyar*.

40. *Kayilácha Puráṇam.*

A poem treating of the *Kayilácha*, or *Paradise of Siva*, as also of his shrine at *Trincomalee*.

41. *Tiruvárúr Puráṇam.*

A poem treating of the shrine of *Siva* at *Tiruvárúr*.

42. *Máka Puráṇam.*

A poem in 32 cantos, comprising 1,492 stanzas, treats of the origin and merits of the ablutions performed by the *Chaivas* in the month of *Máka* (February-March).

43. *Chivaráttiri Puráṇam.*

A poem in 9 cantos, comprising 652 stanzas, relates to the *Vigil* and *Fast* observed by the *Chaivas* during the night preceding the new moon in the month of *Máka*.

44. *Vikṭiṇésvara Purāṇam.*

A poem treating of the legends of *Vikṭiṇésvara*, the elephant-faced god.

45. *Kāyilācha Mālai.*

An account of the first settlement of the Tamils in Jaffna, together with the legends of the *Chōla* princess, who was relieved from the deformity of a horse's head with which she had the misfortune to be born, by bathing at the well at *Kiri Malai*.

47. *Kalvedḍu.*

An account of the king *Kuḷakkōḍḍu Mahārāja* founding and endowing a temple in honour of *Siva*, or *Kónésvara*, at Trincomalee. An abstract of this poem in English has been published by me in the Supplement to the *Ceylon Gazette* of November 26, 1831.

The following are written in prose :—

48. *Nalaṇ Katai.*

The adventures of the king *Nala*, and *Tamayanti*, his consort. This work has been translated into English by Mr. Kindersley, and published in his "Specimens of Hindú Literature."

49. *Irāmar Katai.*

The adventures of *Rama*.

50. *Virakumāraṇ Katai.*

The adventures of *Virakumāraṇ*. An abstract of this work is given in Mr. Robert's "Illustrations of the Sacred Scriptures," pp. 199-203.

51. *Chiruttonḍaṇ Katai.*

An account of *Chiruttonḍaṇ*, a *Chaiva* devotee, who lived at Tiruchchenkáḍu.

52. *Aswamétayáka Katai.*

An account of the sacrifice of a horse by the *Pandavas* after their victory over *Turiyótanaṇ*.

53. *Kaṇchaṇ Katai.*

An account of *Kaṇchaṇ*, the tyrant of *Maturai*, as also of *Krishna*, by whom he was destroyed.

The following works on History and Biography belong to the Tamil Christians and the Moors :—

1. *Témpávanī.*

A poem in 36 cantos, comprising 3,613 stanzas, written by the Rev. Father C. J. Beschi, in 1726. Its principal subject is the history of the Holy Family, but it incidentally treats of all the remarkable events recorded in the Old and New Testaments, as well as of the lives of the Saints in the early ages of the Church.

2. *Tiruchchelvar Káviyam.*

A poem in 24 cantos, comprising 1,948 stanzas, treats of the history of *Tiruchchelvar*, an Indian prince, who was converted to Christianity by the anchorite *Barlam*.

3. *Chikámaṇi Málai.*

A poem treating of the history of *Tévachakáyaṇ*, otherwise called *Nílaṇḍan*, who was *Champridi*, or minister, of *Vañchamárttāṇḍan*, king of Travancore, but having adopted the Catholic faith was degraded from his office, put to torture, and finally shot on a hill near *Arampalli* by order of his royal master.

4. *Atichaiya Káṇḍam.*

A poem recounting the miracles wrought by God at the intercession of the Blessed Virgin.

5. *Joseph Purāṇam.*

A poem treating of the history of *Joseph* and his brethren, written by the poet *Kūḷaṅkai Tampirāṇ*, and inscribed to the Rev. Philip De Melho, of Jaffua.

6. *Chíra.*

A poem treating of the birth and exploits of *Muhammad*: by *Umaru Pulavaṇ*, of Káyilipaddaṇam.

7. *Kaṅkapisheka Málai.*

A poem treating of the history of *Muhammad* and that of his four immediate successors: by *Kaṇa Kaviráyaṇ*.

8. *Misrasi Malei.*

A poem treating of *Muhammad's* Night Journey to Heaven: by *Ali Pulavaṇ*.

9. *Shidad Purāṇam.*

A poem treating of the history of *Shidad*, the first king of the tribe of *Ad*, who attempted to create a paradise on earth, proposing thereby to render himself equal to God, whose honours he claimed.

10. *Mūsa Napi Purāṇam.*

A poem treating of the history of *Moses*.

11. *Yúsúphu Napi Káviyam.*

A poem treating of the history of *Joseph*.

12. *Ibni Aṇḍan Patawedḍu.*

A poem treating of the victory of *Ali* over *Ibni Aṇḍan* and two other kings: by *Aliyár Kaviráyaṇ*.

13. *Subyil Patawedḍu.*

A poem treating of the victory of *Ali* over the king *Suby*: by *Varisei Meiyān*.

14. *Zakkun Patawedḍu.*

A poem treating of the victory of *Ali* over the king *Zakkun*: by *Varisei Meiyān*.

15. *Kásim Pataveddu.*

A poem treating of the victory of *Kásim* over some infidel chieftains.

16. *Samaun Pataveddu.*

A poem treating of a boy, named *Samaun*, killing an infidel chieftain in a single combat.

17. *Muhaiuddin Puranam.*

A poem treating of the history of *Muhaiuddin*, Kaliph of Bagdad, who is considered by the Moors as a great saint : by *Muhaiuddin Pulavar*.

18. *Muhaiuddin Malai.*

A poem treating of the same subject as the last, but with a studied brevity and in a different style : by *Maula Pulavar*, of Cháttankudi.

19. *Abusahamma Charitai.*

A poem treating of the history of *Abusahamma*, who was put to death by the Kaliph Umaru, his own father, for adultery and drinking.

20. *Damimansa Charitai.*

A poem treating of the adventures of *Damiman* in the Great Desert : by *Ségu Lebbe Pulavar*.

21. *Ansarun Pataveddu.*

A poem treating of the victory of *Ali* over the king *Ansarun*.

22. *Rabsukul Pataveddu.*

A poem treating of the victory of *Ali* over the king *Rabsukul*.

The following works are written in prose :—

23. *Periya Puranam.*

The History of the Bible : by the Rev. Father Jacome Gonçalves.

24. *Chiṇṇa Purāṇam.*

A compendium of the preceding work : by the same author.

25. *Tévappirachaiyiṇ Tirukkatai.*

The History of the People of God : by the Rev. Father Gabriel Pacheco.

26. *Chukirta Tarppanam.*

The Lives of the Saints : by the Rev. Jacome Gonçalves.

27. *The Historia Ecclesiastica.*

By the Rev. C. T. Walther, Tranquebar, 1731.

28. *The Life of the Venerable Joseph Vas.*

By the Rev. Father Gabriel Pacheco.

29. *The Life of St. Francis Xavier.*

By the same author as the last.

30. *A Summary History of Hindústán, from
the Muhammadan Invasion.*

By P. Nānappirakácha, Mutaliyár, Vepery, 1830.

(To be continued.)

SKETCHES
IN THE NATURAL HISTORY OF CEYLON:
ORNITHOLOGY.

BY E. L. LAYARD, ESQ., C.M.E.S.

(Read February 24, 1849.)

ON THE GENUS *Bucco*.

THE design of the following sketches is to illustrate the Fauna of this Island. They are intended to form part of a series of Papers commencing with the *Indigenous Mammalia*, proceeding downwards in the scale of creation to the zoophytes which inhabit our seashores and lakes.

They are in a manner out of place here; but as this and the succeeding group have lately occupied much of my attention during leisure hours, I have been induced to embody my notes while the interest attached to them was yet fresh in my mind.

“There is one of these provinces”—says Mr. Kirby, speaking of the pursuits of the Zoological Club, in his address at the foundation of the Zoological Club (November 29, 1823)—“that I think ought to stand high in the esteem of every patriot zoologist,—I mean the study of the animals that are natives or periodical visitants of his own country. An *Indigenous Fauna* is the first desideratum in our science; and could a work of this kind be accomplished in every country, regard being had to natural boundaries, we might hope to become acquainted with all the principal groups of animals, and get a much more correct idea than with our present imperfect knowledge we can attain to, of

the genuine *Systema animalium*, with all its infinities and analogies as concatenated and contrasted by its Great Author."

Agreeing entirely with the view here taken by the learned writer, I have, since my residence in the Island, sought to gain an intimate acquaintance with its animal productions. And that the small amount of knowledge thus acquired should not be quite useless, but haply serve as a stepping-stone for others, I prefer giving it at once to the public, rather than await perfection, which, in a study of this nature, is never attained; each succeeding day disclosing a new and varied page in the inexhaustible Book of Nature.

The family selected for the subject of the present Paper derives its name from the conspicuous tufts of bristles projecting forward along the bill,—in some species surpassing it in length; the bill itself is very robust and conical, and generally as long, if not longer than the head. From the width of the gape the various species, all eminently baccivorous, are able to swallow a good-sized fruit.* The nostrils are round and exposed. Feet zygodactyle, resembling the *Picidæ*, like whom, it is said, they climb, and even "tap." On this latter point I am very sceptical, considering that the *Picidæ* do it to obtain their insect prey, while the *Bucconidæ* are fruit-eaters. As to their climbing even, I doubt if it extends beyond crawling up to their nests in the holes of old trees, which the natives tell me they do, always alighting a little below and climbing upwards. My informants alluded particularly to *B. rubricapillus* and *flavifrons*. Well authenticated information on these points would clear up much uncertainty.†

* I once shot *B. caniceps* with a fruit in its throat, the stone of which measured three-fourths of an inch in diameter.

† In confirmation of what I before observed as regards the daily acquirement of knowledge in natural history, I extract the following

Group : *Zygodactyli*.

Family : *Bucconidæ* (*Barbets*).

Genus : *Bucco* (Linn.).

B. caniceps (Franklin).—This is the largest Barbet we have. It measures about $9\frac{1}{2}$ in. in length—of wing $4\frac{1}{4}$ in., tail $\frac{7}{10}$ in., tip of bill to forehead $\frac{9}{10}$ in.; colour of bill is reddish; a patch of bare skin of a dull orange colour surrounds the eye, and extends some distance backward; colour above, green; head and neck brownish freckled with white, each feather being brown, with the shaft whitish; vent, bright green; legs, orange.*

Common in Ceylon, frequenting trees, on the fruit and berries of which they feed. The note is a shrill "*Poo poo poop*," often repeated. Native name, *Mal kottóruná*.

B. flavifrons (Cuv.).—This handsome species is next in size to *B. caniceps*, measuring about $7\frac{1}{2}$ in. in length—bill to forehead 1 in., of wing 4 in., tail $2\frac{1}{5}$ in.; above, dark green; the edges of the feathers paled; forehead, golden yellow, the colour extending over the head along the shafts of the feathers; there is also a spot of yellow at the base of the bill. The chin is blue; a similar coloured patch surrounds the eye, extending backwards; lower mandible of beak yellowish brown, upper mandible deep brown; vent, yellowish green; breast the same, but the feathers being each edged with a darker green give it a scaled appearance; inside of wing blue and buff; underside of tail and legs verditor. This species is confined to the hilly country, where it replaces *B. caniceps*, and is very common: they are

from my note book :—"Saturday, March 17. '*B. rubricapillus*': Shot this species climbing up the limb of a tree, and chipping off bark in quest of insects." My attention was drawn to the bird by the tapping it made, and I shot it thinking it was a new woodpecker.

* *B. Zeylanicus* so closely resembles this in all respects except size, that I am inclined to think it a mere variety. When the examination of numerous specimens shall have determined this it shall be noticed.

generally found in pairs, and the moment one begins its shrill call the other answers it. This call resembles somewhat that of *B. Indicus*, the next species, but is louder and more shrill, and may be heard to a great distance. This species has been hitherto considered very rare, and rests principally on the authority of Levaillant. It is peculiar to the Island, as many other varieties of birds and animals are, which have remained unknown for years, but will soon, I trust, grace the cabinets of our Museum, and take their place among the described species of the Indian Fauna.

B. Indicus (Linn.).—Length, $6\frac{5}{8}$ in., 1 wing about 3 in., tail $1\frac{1}{2}$ in., bill to forehead $\frac{3}{4}$ in.; above, green with a ruddyish tinge, the feathers slightly margined with yellow; below, yellowish-white, each feather centred with green; forehead and gorget brilliant crimson, immediately behind which is a black band fading off into dark lead colour; below the gorget is a narrow band of golden yellow; chin and throat sulphur colour; a similar coloured spot surrounds the eye; base of bill black, as is also the bill itself; feet reddish, with black claws.

They are fond of sitting on a dead twig, or tree-top, uttering their dull, monotonous call, generally beginning with a loud “*tur-r-r-r-r*,” ascending the gamut and ending with “*ko-turr, ko-turr*.” Hence the native name of the whole genus, *Kottórunó*. The species is very common in Jaffna and Colombo, but not so much so in the hills, where *B. rubricapillus* replaces it. They are very partial to the young fruit of the cotton and tamarind, which abound in the Jaffna district.

B. rubricapillus (Gmelin).—Much resembles the preceding in size and colour, but the forehead with a smaller and less brilliant red patch; the gorget is almost obsolete (in some specimens quite so), and the throat, chin, and eye-spot

deep dull orange; the upper parts are of a more unvaried green, and the lower lighter and streakless.

Found in Colombo and Jaffna, occasionally in company with the preceding, but its great haunt seems to be about Kandy, where it may be found in small parties of six or eight. When one flies from a tree the rest all follow, and though the Indian species are said to be solitary, this one is certainly not so. They also roost in these small parties, as in the evening I have seen them seeking their roosting-place together. Native name, *Kottóruná*.

Nothing is known of the birds, &c., of the Batticaloa district. Contributions from thence will prove most acceptable to the Society's Museum. *B. caniceps* and *Indicus* I have seen from thence, but some even of the Indian species may yet be found there. In a small collection presented to our president, I found two specimens of *Halcyon capensis*, which is stated to be common there, though unknown in this part of the Island. Also in a small lot of skins brought thence by a friend, I detected five species not found here—one of them a water-rail (*Rallus*). The district is rich in water-birds, and worthy the attention of any of our members who may be visiting it.

ON THE GENUS *Hirundo*.

In commenting on the Fissirostral tribe, Swainson has well and shortly described them in the following passage:—
“The Fissirostral birds, as a whole, are peculiarly distinguished by having the powers of flight developed in the highest degree: all the energies of their nature seem concentrated in this one perfection; for their feet are always very short, weak, and generally so imperfect as to be of no further use than to rest the body after flight. Their food is exclusively insects, captured upon the wing. To accomplish this, nature has given to their mouths enormous

width, by which, superadded to their amazing flight and rapidity of movement, they are almost sure to capture their prey." Here, then, are well summed up all the general qualities of the swallow race; a few individual peculiarities of course remain, which will be noticed under the respective species. The family is divided into two sub-families, *Hirundo* and *Cypselus*, the latter again sub-divided into the following:—*Cypselus*, *Acanthyliis*, *Collocalia*, and *Macropteryx*.

Hirundo (Linn.).—Bill flattened throughout; upper mandible slightly hooked; rictus devoid of vibrissæ; feet insessorial; lateral toes equal; hind and middle toes equal, and as long as, if not longer than, the tarsus; plumage lustrous; tail more or less forked.

Only two of this genus have as yet been recognised in Ceylon; but one of them is an undescribed species, and, so far as I can ascertain, is not migratory, but confined to our Island.

H. gutturalis (Scopoli); *H. pnayana* (Lath.); *H. Javanica* (Sparr.); *H. Javanica* (Sykes).—Common in India and the Malay countries generally. They arrive in Colombo about the end of September. I saw them in Jaffna in abundance during the months of January and February. I have never yet seen the nests of these birds, nor can I conceive where they build so as to escape notice. I have observed them sitting much on the stony edge of the moat, both here and in Jaffna, fond of hunting over grassy fields and meadows. Plumage glossy, blue on the back; wings and tail inclining to brown; forehead and throat rufous; colour below the throat steel blue; underneath flesh-coloured; tail barred with white; outer tail feathers very long, having been known to exceed the next by $2\frac{1}{2}$ in.

H. hyperythra (Layard).—This handsome swallow is confined to the hilly region of Ceylon, and is an undescribed

species new to the Indian Fauna. My first acquaintance with the species was in November, 1847, when on a journey to Kandy. Their glossy blue wings and back contrasting with their red underside and tail coverts, struck my attention, nor could I remember having ever seen any other swallow with the same fine tints. During our breakfast at Ambépussa they were continually skimming over the open space in front of the bungalow and along the river in search of their insect prey. Not having a gun I was obliged to content myself with making a note of them in my Journal of Natural History. In February of last year Mr. Brodie, of Puttalam, showed me a very fresh specimen of a new swallow, which he said he had found in a chena towards Kurunégala. This I instantly recognised as the Ambépussa bird, and this is the first instance of its being procured. Subsequently I observed them at Ambagamuwa in March, and at Kandy in November. They frequent the hills free from high trees, and are fond of perching in flocks on the coffee and other low bushes, sallying off occasionally in quest of insects.*

Plumage of the back as far as the tail coverts glossy steel blue. Tail coverts, vent, and breast deep rufous; throat inclining to yellow; just over, and in front of the eye, is a still darker rufous line. The shafts of the breast and throat feathers are black, the colour extending in some

* The late Dr. Gardner told me that a pair of these birds built their nest on a ring in the ceiling of his house in the Botanical Gardens at Pérádeniya. The ring supported a chain and hanging lamps in the centre of the sitting-room. This shows their fearless nature, resembling in this respect the common martin of England, and also in the structure of their nest, which Dr. Gardner described as "made of clay and like that of the English swallow." Eggs unknown at present: but I trust this notice may attract the attention of some one residing in the interior, and lead to specimens being sent to us for our local Museum. The young birds frequented the nest for a month after being full fledged, returning to it every night to roost.

instances to the feather; under tail coverts rufous, with steel blue tips; the tail and wing primaries glossy rifle green. In size these birds exceed *H. gutturalis*, both in length and plumpness. The wings are pointed, and the tail forked, though not to the extent of the preceding. The exterior feathers I have never observed of equal length. Bill distinctly hooked and notched; feet and legs more robust than among the generality of swallows; lateral toes equal; hind toe longer than middle, and as long as tarsus.

Macropteryx (Swainson).—An intermediate genus of Swainson's, between *Hirundo* and *Cypselus*. Tarsus very short and bare; anterior toes of nearly equal length; halux shortest; hind toe very weak and short; plumage silky; head crested; tail very long and much forked; outer tail feathers projecting upwards of 2 in. beyond the next. Wings in some very long.

We have but one of the present genus in the Island, *M. coronatus* (or *longipennis*), which appears to be generally distributed, though not very common. I have traced it along the western coast to Jaffna, in the interior to Kandy, and along the Ambagamuwa range. In Colombo it is met with in small parties, frequenting the cinnamon gardens in the neighbourhood of high jungle. They have a long sailing flight, during which they utter a peculiar note distinct from any of the swallow tribes, and not unlike the words "*chiffle-chaffle, chiffle-chaffle*," ending with "*klecho-klecho*," often repeated,—the cry they likewise utter when perched on the leafless branches of trees on the look-out for insects. The crest on the head is on such occasions rapidly elevated and depressed. Our Ceylon specimens agree well with the description given by Dr. Blyth of the Indian birds. "Outer tail, &c." I have never been able to ascertain the breeding-place of these birds, although they seem to remain

most of the year with us, appearing in March and continuing till December. It is said that they build in hollow trees.*

Acanthylis (Boie.) ; *Chætura* (St.).—From *Macropteryx* we pass to the present genus, containing the largest of our *Hirundinidæ*. Of this also only one species has been discovered in the Island, namely, *A. caudacuta*, *Hdo. caudacuta* (Latham) ; *Cyp. giganteus* (Temp.). This gigantic swift seems confined to Nuwara Eliya, where, according to Lieut. Sillery, C.R.R. (to whom I am indebted for the only specimen I possess), it flies with amazing velocity. The natives say they build in hollow rhododendron trees which abound on the plain.

This bird may be easily known by collectors from its large size (being about 9 in. in length) and its spiny tail. Swainson's characters of the genus are as follow :—“Feet as in *Macropteryx*, but the tarsus longer than the middle toe ; tail short, and even the shafts prolonged into acute points ; the outer tail coverts are white ; the chin also is whitish.”

From this gensu we pass to *Cypselus* (Illiger), having the tarsus thickly clothed, toes short, and all directed forwards.†

This is the common Indian Uban swift, but with us it is rare, it having only twice fallen under my notice, and both times in Colombo in the neighbourhood of Slave Island. I do not know that it breeds with us, though it builds in great numbers at Madura.

* Capt. Tickell.

† These characters do not apply to the sub-genus *Collocalia*, in which the feet and legs are naked, and the halux well opposed. (Swainson seems to have omitted this family altogether.) Tail in most instances forked, or indented. The whole tribe are of very uniform colours,—sooty black or brown with glossy tints, sometimes relieved with white on the throat, belly, or tail coverts. Our ascertained species consist of *C. affinis* (Gray), easily known by its white rump and throat and blacker plumage than any of our other swifts ; length about $5\frac{3}{8}$ in. ; expanse of wing 12 in.

C. balasiensis, (Gray).—The smallest and commonest of our *Cypselidæ*, frequenting palmyra trees in all parts of the country. Its colour is one unvaried ashy brown, with a tinge of green in its gloss. Total length $4\frac{3}{4}$ in. Tail very forked. On the wing it may be easily distinguished from the preceding by its slimmer shape and deeper forked tail, which it is continually unclosing and folding. It may be found on the wing all through the day, but in the evening it is most brisk, hawking after its food and chasing its fellows with shrill screams round some solitary palmyra tree, in the dead and hanging fronds of which several pairs build their nests, which are composed of the dry cotton of the *Bombax pentandron* and other light flossy substances, collected by them on the wing, and cemented together in a semi-circular shaped cup, attached by the flat side to the leaf. The eggs are of a pure white. I have never found more than three in a nest. They breed in the months of May and June, perhaps oftener, as contrary to my former supposition I found they are only partially migratory.

Genus Collocalia (Gray).—This genus has been established for the reception of the fabricators of the celebrated edible nests of the Chinese gourmands. In structure the birds prove to be true *Cypseli*, but of a feeble race; they also differ in the feet and naked tarsi, the hind toe being well opposed, though capable of rotating forward. Three species only are well known: it is probable there are many more, but from the conflicting accounts of travellers much uncertainty still exists concerning them.* Of those three, one only has

* Extract of a private letter to the author from Dr. E. Blyth, Curator Hon. E. I. Co.'s Museum, Calcutta, dated August 7, 1849:—"I shall, therefore, be glad of any additional information you might be able to supply me with relation to distribution of species, their nidification, &c., and at present I should be glad to know if any edible birds' nests are gathered on the Ceylon coast; and, if so, whatever you can learn about them, with specimens of the birds, probably of more than one species, which construct them, and the nest of each species Since

hitherto been observed in Ceylon, and as the nidification of the whole group requires investigation, I am induced to give at length the observations which I have made upon this species. My first acquaintance with it was on October 17, 1848, when I killed a specimen from a flock flying over low paddy fields at Kótté. The bird was full fledged and in good condition; small flies, &c., were found in its mouth and throat. Not having any means of identification I knew not how to class it, as it did not strictly accord with any of Swainson's characteristic marks of *Cypselus* or *Hirundo*. During circuit at Kandy in November I obtained several adult specimens. They appeared very numerous, flying at a vast height over the hills surrounding the town.*

I had previously heard that near Kalutara, somewhere in the Pasdun Kóralé, the Chinese collected the nests of the Edible Swallow; but it never struck me that this was the fabricator of the far-famed nests. In December, the late Dr. Gardner, then Superintendent of the Government Botanical Garden, proposed that I should accompany him into the Pasdun Kóralé (whither he was going in search of a rare fern) to inspect the cave where these swallows were said to build. We accordingly left Kalutara on December 18, and walked to Hevessa, a distance of 35 or 40 miles. We reached our destination in the evening of the 20th, when we immediately ascended to the cave,

writing the foregoing I have been studying the collochia, or E. I. B., and have come to some notable conclusions respecting them. First, the *Hiro. esculenta* (L.), founded on one of Poivers' drawings, has, I am satisfied, no prototype in nature, or, if anything, it must be a true *Hirundo*, with white tail markings, erroneously supposed to be the fabricators of the celebrated nests. Secondly, the *H. nidifica* of Latham or *H. esculenta* (Apud Shaw, Hors, &c.), is not the builder of them, but the so-called *H. Fuciphaga* of Thunbeyt, the various descriptions of whose nidification, and that of *Nidifica*, requires to be transposed... "

* With them appeared a huge swift, which I am inclined to think must be *Cypselus melba*, from the whitish throat and belly. From the attitude kept by these fine swifts I could not even get a shot at a single specimen.

which is situated near the summit of a hill, called by the natives Diyagalagulāwa, or Hunumulnakōta, about 500 feet above the level of the plain below. The cave consists of a huge mass of limestone, which has separated from the face of the rock, and slipped down upon some loose boulders below, forming a hollow triangle about fifty or sixty feet long, by twenty-five broad and twenty high. There are three entrances—one at each end and one (a very small one) in the centre. The rocks which compose the floor are covered to the depth of one or two inches with the droppings of the inmates, old and young, mingled with strands of grass, &c., dropped from the nest or by the parent birds. The light which struggled into the cave was dim and uncertain, but enough to enable me to discern many hundred nests glued to the rock, glistening like flakes of ice. One side of the cave (the hill side) was entirely unoccupied, I presume on account of the water, which evidently streamed down it in wet weather, and perhaps in the dewy morning, collected from off the trees with which the mountain is densely clad. Within reach of my hand was a small ledge of rock, from which I took five or six nests, and in two of them captured two single young nestlings, fledged enough to escape, which one effected. The nests procured were evidently of the most inferior description, and had been left on that account by the Chinese for the young brood. They were composed of dried grasses, mosses, hair of cattle, &c., agglutinated together, and cemented to the rock by what is presumed to be the saliva of the parent birds.*

These substances appear to be laid on most irregularly, in unequal masses. In one nest in my possession the foundation is in thick patches, clear and semi-diaphanous ;

* Specimens of nests and birds in spirits, for the purpose of being dissected and examined by scientific men, have been forwarded to Calcutta. The result of this examination will be communicated in a future paper.

the interior is lined with thin threads of it, crossing and recrossing each other in every direction. The ends of the materials added to it are all drawn together to the upper corners of the nest, and diverge in the middle, thus forming a semi-circular shallow cup about $1\frac{3}{8}$ in. deep, $2\frac{3}{4}$ in. long, by 2 in. broad. The formation seems grandular, and effected in layers, which can be split apart with little force. I cannot detect any appearance of *blood*, as remarked by the Rev. J. Barbe, in the Journal of the Asiatic Society, chapter xv., page 363. A new nest in the possession of our President, Sir J. E. Tennent, is composed entirely of the clean white gummy matter, without any admixture of grasses or any foreign body.

The Rev. J. Barbe, speaking of the nests of *C. fucifaga*, collected at Mergui, the Nicobars, &c., says: "They are of three qualities. The first, of a fine whitish colour, is obtained before the swift has laid her eggs. This quality is sold at Penang from 40 to 50 dollars the cattee.* The second quality, of a brownish colour, is obtained by taking the nest when the bird has laid her eggs. This quality is sold at Penang from 20 to 30 dollars the cattee. The third quality is of a dark colour, mixed with *blood* and feathers, being obtained by taking the nests when the young birds have flown." Also: "The Chinese say that when the nest is taken before it is completed the bird makes another, but of an inferior quality; and it appears that it exhausts itself in building the second, the nest being *spotted with blood*." This would appear to be much the case with *C. nidifica*, and accords well with the accounts given to me by an old Chinaman. He told me that they had four harvests in the year, one of which was early in October. This would bring the time down to about the age of the nestlings I

* According to the "Batavian Transactions," for nearly its weight in silver!

took, allowing about two months for the building of the nest, as stated by Heer Hooyman in "Batavian Transactions." Dr. Blyth states in his pamphlet that a friend of his, a Captain Lewis, saw much of these birds in the Nicobars, and especially, he has often remarked, that they retire early in the afternoon to their caverns (*i.e.*, about 4 P.M.). But he states that the edible nests, as we see them, are only the lining, which comes out entire, though independently affixed to the rock, being underlaid by a network of some vegetable fibrous substance placed on the ledges, which the gatherers are careful never to remove. In both particulars the Ceylon birds differ from this. Though it was a dull afternoon, nay, even rained a little, the birds were on the wing *till dark*;* and in the dirty soiled nests composed of the vegetable and fibrous substances, and which certainly had never had a lining, but evidently formed in one solid fabric, I captured the young birds; neither were the ledges, where such things were, sufficient to sustain a deposit of material, and in most places the nests were glued to the smooth surface of the rock, which, as before stated, *overhung*. I was told that in the neighbourhood of Hevessa there were one or two other caves in which the swifts were known to breed, but had not time to visit them. I should think, however, judging from the numerous flocks of birds I saw soaring round the detached summits of the hills in that district, and also from the fact of finding them in Kandy during November and December, that very many caves exist, which remain to be discovered, and to add to our Colonial revenue. The apathy of the natives will in a great measure defeat this: they leave it entirely in the hands of

* *December, 1848*:—Walking late in the evening by moonlight in the Cinnamon Gardens, my attention was attracted by the twittering of *C. nidifica*, and looking up I descried thousands hawking for flies; they seemed, however, to keep progressing in a N.E. direction.

the Chinese, never attempting to speculate in it themselves, and when, as is the custom, the “rent” is put up to auction by the Government, the Chinese are the only bidders. Other species of nest-builders may perhaps be found in the Island. *C. fucifaga*, for instance, being probably an exclusively sea-coast species, may breed among the rocks and clefts of the Trincomalee coast. They are known to breed along the Bay of Bengal; their nests are of a superior quality to those of *C. nidifica*, and might be worthy the attention of any person residing on the eastern side of our Island.

For the purpose of enabling our readers to identify the species, I give the description of *C. nidifica* from a specimen before me, that of *C. fucifaga* from Dr. Blyth’s pamphlet:—

C. nidifica. *—Length from $4\frac{1}{2}$ in. to $4\frac{3}{4}$ in.; of middle tail feather 2 in., outer $\frac{3}{8}$ in. longer, thus forming, when spread, an indented tail; length of wing about $4\frac{1}{2}$ in. The general colour is a glossy fuscous brown, rather light on the body, and below very pale; bill very short; nostrils broad and prominent; eyes large and sunken.

C. fucifaga; *H. fucifaga* (Thim.).—About $3\frac{1}{2}$ in. in length by 9 in. in expanse; the tail $1\frac{1}{2}$ in., and even; wing $3\frac{3}{4}$ in.; colour above blackish green, and purple glossed; below, fuscous brown, passing to white on the middle of the belly, with whitish edges to the lower tail-coverts. A single large feather with a distinct supplementary plumelet grows on the hind toe, being nearly as long as the toe with its claw: this is always normally present, but is often lost in dry specimens.

Before quitting this subject I must glance at a paragraph which has been brought to my notice in a work entitled “Illustrations of Instinct,” by J. Couch, Esq., F.L.S.,

* *C. nidifica*; *H. nidifica* (Lath.); *H. esculenta*, assud. Horsfield; *H. fucifaga*, assud. Shaw; *H. brevirostris* (McClelland); *H. unicolor* (Jordon), and *Cypselus concolor*, of the same author.

&c., page 127. It is as follows, and I quote it at length that the subject may be freely canvassed:—"It is believed that all the species comprised in the Linnean genus *Hirundo*, scattered as they are in almost every corner of the earth, are impressed with a migratory character, and that their nests are generally formed in some cooler temperature than that which receives them at the opposite season of the year. And though it is known that in the Island of Madeira, in Ceylon, Surinam, Egypt, and probably in some other parts of Africa, swallows are found throughout the year, yet it seems that in all these the numbers vary with the season, which implies a migration of part of them; and it does not appear that any of those which remain produce a brood." Now, assuredly this means that the *Hirundines* build their nests in a cooler climate than that in which they generally reside; and that, though in Ceylon and elsewhere swallows are found throughout the year, yet that the bulk migrate to cooler latitudes, and the moiety which remain do not produce nests. This I have shown to be incorrect in this paper, which was written before I saw the passage referred to. As to *H. hyperythra*, B., it is confined to the Island as far as we know, never having been received from any other part of the world; and from what I have seen, I suspect it is limited to the Kandy or hill country.*

I notice this to show how little is known of the Fauna of Ceylon. Surely there are some of our Members who could find time to notice a few of the common traits of nature, which are occurring under their eyes almost every day of their lives; and I do hope this Society will be the means of diffusing, through its Journal, a spirit of inquiry and research among the native population, of whom many may be found having abundant time and opportunity.

* Mr. Brodie's specimen was procured near Kurunégala.

ON CEYLONITE FOUND NEAR TRINCOMALEE.

BY LIEUTENANT HENDERSON, C.R.R.

(Read February 24, 1849.)

CEYLONITE, so called from having been first discovered in Ceylon, is, in its primitive and usual form, a regular octohedron. It, however, also occurs as a cuneiform octohedron, and has been found, though more rarely, in rolled grains.

In size it reaches from eight to ten carats. The planes of its crystals are smooth, shining, and possessing a vitreous lustre. Its structure is lamellar, and its fracture what may be termed flat conchoidal. Occasionally it has been found to be imperfectly foliated.

Its specific gravity ranges from 3·6 to 3·7. The lighter coloured varieties (which I have not seen) are said to be transparent. The darker specimens can scarcely be called semi-transparent. On the edges of the crystals they are translucent. It is singly refractive; in hardness superior to quartz, but inferior to Oriental ruby or spinelle.

Subjected to the blow-pipe it is found to be infusible, without addition.

Its component parts are :—

Alumine	...	...	68
Magnesia	...	...	12
Silex	...	...	2
Oxide of Iron	...	...	16

98 (loss 2).

Ceylonite, otherwise called Pleonaste, has, since its discovery in Ceylon, been met with also in Norway. It is of the same family as the ruby, but more closely allied to that variety termed spinelle. This latter, indeed, which with

different lines assumes the various names of Balais ruby, Vermeil, and Rubicelle, by mixture with blue, passes through divers colours, till it finally arrives at indigo blue, which is frequently so deep as to be barely distinguishable from black.

This then is the Ceylonite, which more resembles a piece of jet than any other mineral. As a gem it can hardly be said to hold any rock. It seldom or never comes under the hands of the jeweller, but I can conceive that it might be very well adapted to be formed into mourning ornaments.

Ceylonite belongs to formations of the primitive class, as will be seen from the position in which I found it. It is said to have been found imbedded in calcareous spar, and in adulaisia, accompanied by magnetic pyrites and crystals of mica; but of the correctness of this I am not aware. The crystals I met with were found in the low bank, both in the small water-courses formed by the rain and (by digging) apparently *in situ* within eight or ten inches of the surface. Its matrix appears to be a compact gravel.

The whole of the neighbouring rock belongs to the primary formation. On one side, at the distance of a couple of hundred yards or so, a cut in the road exposes a mass of gneiss (the predominant rock of the country), affording an excellent view of its conformable strata, dipping considerably towards the east. On the opposite, or western side, at no great distance, is discovered a vein of graphic granite, the characters of which are very beautifully and distinctly marked. On each side, and in contact with it, are veins of quartz and felspar, more or less commingled, as also a vein of mica. These, as shown by the section which has exposed them, stand nearly in a perpendicular position. One is struck by the arrangement which seems to mark the gradual weakening, on each side of the graphic granite, of that agency or power of peculiar crystallisation, which

disseminated the quartz through the felspar. In front of the granite lie large blocks of unmixed quartz, as if forcibly ejected from the mass while in the act of passing from a state of fusion into its present consolidation.

At the distance of half a mile to the westward of this point, a vein of trap is seen cropping out from the beach, midway between high and low water mark ; and this is the only other rock discoverable within miles of the spot.

APPENDIX.

HINTS TO AMATEUR CONCHOLOGISTS,

BEING SUGGESTIONS FOR THE COLLECTION AND PREPARATION
OF SPECIMENS.

By Hugh Cuming, Esq., F.R.S.

LAND SHELLS.

LAND SHELLS are found in many places, such as under stones, in clefts of rocks, on the sides of hills and mountains, under decayed wood and trees, or the trunks or leaves of trees, at the root of trees and bushes, in decayed vegetable matter, dried leaves and moss, on small plants—in fact, almost every situation gives them, except open and exposed places. Look for them diligently when you are out collecting; where you find dead specimens you will soon find living ones. When collected, bring them home and put them in a pail, bucket, or some large vessel, and pour a quantity of cold water upon them, and cover up the vessel for two or three hours, which will cause the animals to come out a little. It is necessary to cover them up, or else they will crawl away. When they are a little out, run off the cold water, and pour a quantity of *boiling hot water* on them, so as to cover them well; let them remain a few minutes to cool a little, then take out the animal with a large pin or needle, as you would a periwinkle; when they are all done, take one of your soft brushes and wash off gently all the dirt and filth in clean water, then place them in another vessel of fresh water until all are done, then shake out well the water that is in them, and place them out to dry with their mouths downwards; but not in the sun; in a short time they will be dry. If they are small you can pack them away in small boxes, writing the locality and the situation in which you found them on the cover, for localities must be paid much attention to; but should the shells be rather large, then wrap up each shell in a paper by

itself,—in fine Chinese paper,—then pack them away in a large box, with their locality and with care, but never put by a box that is not quite full, without putting some cotton or other soft substance to fill up the box, for such tender subjects should not have a play during the transit home from where you collected them.

In the rivers, canals, lakes, ponds, and small streams, you will find many species of shells, which, although not handsome are very interesting, and many of them will prove valuable here in England ; therefore, do not leave a single one of them behind, as it may be a cause of regret hereafter. Some of the shells which you will find in the above-mentioned places are of the same form as the land shells, others are like our fresh-water mussel, or cockle : they are mostly found in the mud, sometimes in deep water. You will be sure to find dead ones on the banks of the lakes and rivers, and if you cannot procure them yourself, show the natives the dead specimens, and offer them money to bring you a quantity of them ; and the same with every other subject of natural history—don't think of a few dollars when you will make pounds of them ; but be not too lavish of your money with them—it will alarm their cupidity, and they will seek for more. I am certain that when the natives see that you are collecting these things, they will soon bring them to you, as they love money and do not value the articles you are seeking.

The rivers and pieces of water abound with shells : be diligent in seeking them, and your labours will be most amply repaid.

When you have collected the fresh-water shells, place them in a vessel and pour a large quantity of boiling water on them ; they do not require to be put into cold water before the hot water, as the land shells. As soon as the water is a little cool, pour it off, and take out the animal as before mentioned. Wash them, &c., but as the bivalve or fresh-water mussel will open wide as soon as the animal is out, you must tie them close with care before you put them out to dry : if you do not the hinge will break, and make the shell in part valueless. Some of the fresh-water shells, that are like the snails, have a mouth-piece, which you must take great care of, and keep these mouth-pieces by themselves,—that is, each

species of shell and their mouth-pieces must be packed together, for this mouth-piece, or operculum, is of great service in determining the species. Some of the land-shells have also a mouth-piece : those also must be placed with the shells to which they belong. Be most careful in attending to this piece of information.

When your bivalve shells are tied up and dry, wrap them up each in a piece of soft Chinese paper, and pack one of the small boxes so as they shall not break, for they are generally brittle, and must have care taken of them, and if your box is not full you can put in some other light small pill boxes of shells on them. Do not forget their localities, habitats, &c.

MARINE SHELLS.

These are found in various situations except the deep sea, where they can only be procured by dredging, which can only be done at great expense of time and cash ; therefore, I shall confine my observations to the littoral shells.

The best time to collect marine shells on the sea shore is at the new and full moon, for then the tides make greatest ebb ; therefore you should be on the spot two hours before low water, with an assistant to help you in turning over the large stones, should there be any, under which you will find many species of cowries, buccinums, tritons, mitras, cones, and several species of bivalve shells : also many kinds adhering to the stones, which must be taken off with a knife in a very careful manner. Several species bore into the stone itself, which you must break with hammers to get out the shell ; or if the stone be soft, cut it carefully with a hatchet, in doing which you will see many species. Take care when you separate the stone to avoid breaking the shell, and those that may be near it. Be always provided with a light basket with a small box in it, to put the shells into which you collect, for the fine delicate ones must not be placed with the heavy and strong.

The stones which you turn over must be well inspected, as you will find many shells covered with marine matter, which makes them appear like the stone itself. Collect everything you see,

however small and unmeaning in appearance, for amongst them may be new genera and very rare shells, not seen before from such an interesting country as Ceylon.

Amongst other shells which you will find under stones are chitons, which must be taken off in the same manner as the limpet and other adhering univalves. When you have got the chitons home, separate them from the other shells, and put them into a pail of fresh water, and let them remain there from 12 to 24 hours; by that time they will all be straight and fair, and also the salt of the fleshy substance that surrounds them will be well soaked out; then cut out the animals, and wash them well inside and out from all filth, and throw them into another vessel of fresh-water; there let them remain until you have cleaned the whole, then place them on narrow slips of boards and bind them down tightly, and put them in a shady place to dry, but never in the sun; in three or four days they will be fit to pack, but never do so until you are satisfied they are quite dry. Do not let them be exposed to the rats and mice at night, as they will eat off their edges and destroy them. Should any of the chitons have hairs or spines, it would be well to wrap each specimen in a separate piece of paper to prevent the hairs or spines from being injured. Pray observe when you begin to clean them if the animals contract themselves in a different form: they are still alive, and you should defer cleaning them a few hours longer. These shells are valuable and highly esteemed.

Many stones at the very lowest ebb will have most shells on them, therefore you must not care about getting wet to turn them over, and never leave the place until the tide compels you. In some spots you may find shells of great value in one tide and under the stones. Amongst the rocks, on the sea shore, in the crevices and on them, you will find many species of catellas, chitons, murices, and several others. Make a careful survey of every rock and stone: they will amply repay your trouble. All sheltered coves or little bays are the best places in which to find shells. Take those places in preference. But when they are examined, then look to those in more exposed situations. The

first thing you ought to observe when you get into a new locality is to go along the sands at high water mark: you will then find many good shells thrown up by the sea, particularly light bivalve shells; you can take any time of the tide to do it. Never miss going after a gale of wind, you may then get many rare and valuable deep water shells which can never be procured otherwise. In sheltered bays and places, just at the very lowest water mark, you will find in the mud and sand many species of bivalve shells just beneath the surface, and generally in great abundance. Do not neglect to collect all and every species, and that in abundance.

HOW TO USE A DREDGE.

Dredging is performed in two ways. First, in a large sailing boat, under easy sail. Make fast your dredge to a rope of 100 fathoms long and three inches thick, and let the other end be made fast to the mainmast or any other secure place for fear of accident. Having arrived at the spot where you intend to dredge, bring the boat or vessel up on the wind, then throw your dredge overboard, and in the space of a minute or two the dredge will be at the bottom; then pay away the rope and make easy sail; let it always be thrown out astern of the boat or vessel. After being under weigh a quarter of an hour, haul in the dredge, and examine the contents. You must carry with you when you go dredging a fine sieve, a hand bucket, and a large cocoanut shell. Having got the dredge on board, take out the contents: if mud and sand with the cocoanut shell, and fill the sieve a third full with it, then let one of your people take it in his hand and hold it over the side of the vessel, then let another man pour water from the bucket upon the sieve gently, the man holding the seive gently shaking it, by which means you will get rid of all the fine sand and mud, leaving nothing but the shells and the larger *debris* of the sea. Examine well broken shells and stones that you find in the dredge, for on them you will find many genera of shells, such as chitons, calyptraea, crepidula arcas, and various others; and so continue,—all the contents of the dredge is emptied in the same manner. Go always well provided with things to put the shells in that

you collect, always separating the light fragile shells from the coarser ones, as the natives have no interest in the matter, and would be sure to break them. When they are cleaning the sand and mud in the sieve, always watch it to see what shells might appear when the first bucket of water is thrown over them, for should there be any heavy with some that are fragile, by the shaking of the sieve the more fragile ones will be broken, and those that are most valuable seldom come on the beach in a sound state.

The other mode of dredging I prefer, which is thus. Get a comfortable large boat with an awning, with a good anchor and 60 or 80 fathoms of cable, with a fisherman's canoe, and both proceed to where you intend to dredge; then come to an anchor, put the dredge in the canoe, having fastened the other end of the dredge rope in a secure manner, then order two men in the canoe to pull away, and when they have proceeded as far as the dredge rope will allow them, order them to heave it overboard, and when it has been down five or six minutes, haul it on board as I have stated before, and examine the contents. If the boat has bottom boards or convenient platforms you can empty the contents of the dredge on it carefully; the men can take off the dredge again whilst you are inspecting the contents of the last dredging.

Should the sand and gravel contain many small shells after it has been washed, and it would occupy too much time on board the boat to pick them out, put it aside carefully in some vessel, take it home and dry it, and pick them out at your leisure, for the small shells you get by dredging are extremely rare, and therefore more highly esteemed.

The most fruitful places for shells are in sandbanks in deep water, near to reefs and rocks. I always found them abound with shells, but oftentimes I had the misfortune to get the dredge foul of a piece of rock or coral, which you will soon find out by not being able to pull the dredge on board. When you find this, cause the men in the canoe to get hold of the dredge rope and slack it from inboard, and then to overhaul it until they come to where the dredge is fastened, and by a little exertion, being right

over where the dredge is fixed, they can unfasten it, which I have done scores of times. When the men in the canoe have got it clear of the rock, let the men on board the boat where you are haul in the slack of the dredge rope, by which they will pull the dredge and canoe clear of the rock, the people in the latter still holding on to the dredge. A little experience will bring you into the mode of dredging.

The bivalve shells you collect in every situation put into a vessel and throw a quantity of boiling water upon them; they will then open, and by such means you can take out the animal easily. Then wash them and tie them up close with some small thread, put them to dry in the shade, after which you can pack them away.

Marine univalve shells you can place in a vessel in some secure place, where the stench will not offend, and let them remain there for a month or so; the animals will be completely decomposed; then you can put them into fresh water for a day, and by rinsing them in the water you will make all perfectly clean. Never allow any shells to be exposed to the sun, or thrown from one vessel to another, or in any way be roughly treated. If you do, their fine edges and spines will be broken, which will render them of considerably less value.

Due attention should be paid to the rivers and streams in the mountains, and all dense woods, and also to heaps of decayed vegetable matter in shady places, for there abundance of shells are frequently to be found.

PROCEEDINGS.

ANNIVERSARY MEETING.—MARCH 31, 1849.

Present :

The Rev. D. J. Gogerly in the Chair.

G. Muttukistna, Esq.	E. Muttukistna, Esq.
J. Dickson, Esq.	Dr. Willisford.
Major Lushington.	Dr. Misso.
R. E. Lewis, Esq.	The Hon. Treasurer.
C. J. E. Middleton, Esq.	The Hon. Secretary.

1. Read and confirmed Minutes of last Meeting.

2. The following gentlemen were then balloted for and elected Members of the Society :—

Dr. Rudolph Gyga, proposed by R. E. Lewis, Esq., seconded by J. Capper, Esq. ; B. Dodsworth, Esq., proposed by J. Capper, Esq., seconded by J. E. Middleton, Esq. ; James Alwis, Esq., proposed by Dr. Misso, seconded by E. L. Layard, Esq.

3. The Papers read at the previous Meeting were laid on the table in the usual course.

Resolved,—That they be printed in the Society's Journal.

THE MUSEUM.

Geology.

4. Dr. Gyga submitted, through the Librarian, the plan of a case for the reception of the Society's Minerals, &c.

Resolved,—That a sum not exceeding £9 be appropriated for the purchase of a case of the description given by Dr. Gyga.

5. The following donations to the Museum were then laid on the table :—

Natural History.

Specimens of Sea Shells, *Cypræidæ-Solarium-Perspectivum*, &c., from J. Mendies Muhandiram. Not in good preservation.

Specimens of the Silk and Cocoons of the *Bombyx mori*.

Phalæna paphia (Cram.). *Ph. mylitta* (Drury). *Bombyx mylitta* (Fab.).

Phalæna cinthia (Cram.).

Clay Nest of an *Odynerus* ———? supported upon the tendrils of a Passion Flower, by Edgar L. Layard, Esq.

The Larvæ Cases of two specimens of *Cicada plebeia*, from a friend in Kandy.

Four varieties of Land and Fleuviatile Shells, by E. Layard, Esq.

Skin of the *Mavis pentadactyla*, from the Rev. Greenwood. Damaged, head wanting.

Various specimens of Snakes in spirits, by Dr. Gygax and J. E. Middleton, Esq.

Four specimens of the Pearl Oyster, by James Steuart, Esq., Master Attendant.

Mr. Edgar L. Layard deposited the whole of his collection of Birds in the Society's premises, until specimens be received to replace them.

Industrial.

Seven Models of Native Boats used in the Trade and Fisheries of the Island, by the Treasurer.

Library.

Persian and Arabic Grammar, by J. E. Middleton, Esq.

Journal of the Asiatic Society of Bengal, No. 24.

6. The Secretary then read the following Report of the Committee of Management for 1848 :—

REPORT.

“In laying before you this Report of the Society's operations for the year 1848, your Committee have much pleasure in recording the great progress made by the Society, and in adverting to the stability and prosperity of this body which now witnesses the Fourth Anniversary of its existence.

Members.

“During the past session the Society has been deprived of nine Members by death and departure from the Island, yet the insertion of twenty-seven new names on the books is an earnest of

the extending utility of the body, and a sure sign that the public are not indifferent to its efforts.

Papers.

“It would not have been too much to have anticipated serious obstacles to the Society’s advancement, from the recent untoward events which have thrown a gloom over the prospect of all Colonial undertakings ; nor has the Society altogether escaped the ill-effects of the depression of the times, as the much smaller number of original communications read this year will prove ; yet even here your Committee can state with pleasure that these communications have mostly been received from new sources, and it is confidently hoped that renewed prosperity will restore sufficient leisure to the Society’s old contributors to enable them to enjoy the pursuit of literature and again appear in the pages of the Journal.

Museum.

“Another source of congratulation is the formation of a Museum for the reception of objects illustrative of the Natural History, the Antiquities, and the Industrial Progress of the Colony. The Government has liberally given the Minerals and Geological Specimens collected by Dr. Rudolph Gygax in the Sabaragamuwa district (about 1,200 specimens), which form the most complete collection which has been made in Ceylon. Other contributions from private individuals have been made in the several departments of Conchology, Entomology, Ornithology, Antiquities, &c., and many promises of support have been given. The accession to your list of Members of many gentlemen resident at outstations will offer peculiar facilities for promoting the objects of the Museum, and to those Members your Committee would beg to suggest that no opportunity be lost of forwarding subjects adapted to such a collection, however trivial they may appear to be. Printed instructions for the preservation of objects of Natural History have been already freely distributed, in several instances with success, and it is hoped that they will enable many others to forward specimens who otherwise, though willing, might have been unable to do so.

“To ensure the proper preservation of the Birds, Animals, &c., transmitted, a taxidermist has been engaged, and is expected from Calcutta, where he was attached to the Museum of the H. E. I. Company, and a suitable case for the objects provided: these expenses are to be borne by a subscription called the “Museum Fund,” which has been opened for the express purpose, and is supported by donations or small monthly subscriptions.

“The number of donors to this fund is at present 11, of subscribers 29; the amount of donations and yearly subscriptions is, received and promised, about £40. Many of the subscribers are in no way connected with the Society. Although your Committee are sanguine as to the success of the Museum, they have deeply to regret the want of proper accommodation for it, which results from sharing the room occupied by the Loan Board, and presents an almost fatal obstacle to its advancement. As a means of aiding the Secretary, who cannot be expected to be technically acquainted with the many and various objects likely to flow into the Museum, several gentlemen, well fitted to the task, have kindly consented to arrange and supervise the materials in the several departments, thereby lightening the labours of that officer and ensuring correctness.

Evening Meetings.

“Your Committee advert with entire satisfaction to the Evening Meetings held monthly for the free discussion of subjects connected with the labours of this Society. At these, several highly instructive topics have been discussed, and much knowledge gained in the Native Practice of Medicine, the Native Pottery Works, and of the Singhalese Hemp: inquiries have also by the same means been directed to the introduction of the Mulberry and Silkworm (*Bombyx mori*), the Cultivation of the Indigenous Silk-spinning Larvæ and wild Bees, and to the Mineral Resources of the Island, &c.

Quarterly Meetings.

“The following Papers have been read at the several Quarterly Meetings of the Society, showing the various fields to which the labours of their contributors have been directed:—

1. *A Catalogue of Tamil Books*, by S. Casie Chetty, Esq.
2. *Notices of various Rock Inscriptions in the N.-W. Province*, by A. O. Brodie, Esq.
3. *Hints for forming a Collection of Lepidopterous Insects, with a list of Indigenous Diurnal Lepidoptera*, by Edgar L. Layard, Esq.
4. *On Buddhism*, by the Rev. D. J. Gogerly.
5. *Sketches in the Natural History of Ceylon.—Entomology: on the Genus Papilio*, by E. L. Layard, Esq.
6. *On the Agriculture of the Singhalese, &c.*, by R. E. Lewis, Esq.
7. *On Ceylonite*, by Lieutenant Henderson, C.R.R.
8. *Sketches in the Natural History of Ceylon.—Ornithology: on the Genera Hirundo and Bucco*, by Edgar L. Layard, Esq.

“Early in the year a most interesting answer was received to a letter on Buddhism addressed to the China Branch of the Royal Asiatic Society, and your Committee trust that the subject will not be suffered to drop after the courteous tone of the letter from Mr. Gutzlaff.

Antiquities.

“In the knowledge of the antiquities of our Island, some advances have been made through the exertions of one of our Members and a friend at Kandy, and your Committee had hoped that translations would have been received from Calcutta in time for the present Meeting; these have only been delayed accidentally, not from want of ability to decipher them, and now that a clue is obtained to these fast fading records of past ages, it is hoped that increased exertion on the part of those of our Members who may have it in their power to procure copies of the many inscriptions buried in the jungles, will open a fresh field for the investigation of the learned and curious.

Books.

“The Librarian will read to you the List of Books purchased by and presented to the Society during the past year, amounting to 26 volumes and 32 numbers of periodicals.

Money.

“In alluding to the Treasurer’s accounts, which show a balance in his hand of £16. Os. 6d., your Committee beg to inform you that in future the Society will have to bear the expense of printing its Journal, as Government can no longer undertake the work which it has hitherto so liberally done.

Meteorology and Statistics.

“Your Committee observe with regret that the Meteorological and Statistical Committees have failed to furnish any reports for the past year, the Secretary of these bodies having been left unaided by the Members ; and having been himself prevented from completing any of his labours by causes over which he had no control, has deemed silence the better course to adopt.

“He has, however, handed to your Committee abstracts of the Meteorological Diaries kept at Batticotta and Trincomalee, during the years 1847 and 1848, which are now laid on the table, together with a Register of Temperature, &c., kept at Puttalam by A. O. Brodie, Esq., and these your Committee advise should be printed amongst the Society’s Proceedings.

Dr. Gardner ; Sir J. E. Tennent.

“Before concluding, your Committee would revert with feelings of the deepest regret to the sudden death of one of the Members of this Society, one whose name will always be intimately connected with the Scientific Literature of the Island, whose early premature death has left immatured a vast accumulation of botanical gleanings, the fruit of several years of unremitting toil.

“Although the unvaried zeal with which Dr. Gardner pursued his botanical researches, and his absence from the neighbourhood of the Society left him no time or opportunity to appear personally amongst us, still his constant expressions of sympathy and support render evident the interest he took in the efforts of the Society for the promotion of the public good, and the few pamphlets he presented to our Library some short time since were accompanied with a promise that in future a copy of all his publications should be kept for its use.

“If the materials collected by our departed fellow Member and friend be at some future time given to the world, your Committee beg to record their opinion that this Society should procure two copies of the work.

“Another source of regret is to be found in the approaching departure from the Island of our respected President, Sir J. E. Tennent. Ever anxious to promote the interests of the Society, and of science generally, his loss will be felt by all who desire to forward the social and intellectual progress of the Colony.

Conclusion.

“In conclusion, your Committee, while thus completing their duties, would express the hope that each succeeding Anniversary may witness that continued and perfect unanimity of purpose amongst the Members of this Society, which alone can lead to real usefulness and permanent prosperity. The work has been but commenced: much has yet to be done; but looking at the present position of the Society, your Committee are fain to believe that success will attend a continuation of the efforts which have hitherto been made.”

The report was unanimously adopted.

7. The Treasurer laid on the table his Accounts for the past year, which were received and passed.

8. The Librarian laid on the table a List of the Books presented to and purchased by the Society during the last year.

9. After some discussion relative to the correspondence with the Hongkong Society, the Rev. D. J. Gogerly was requested to communicate with Mr. Gutzlaff in the name of the Society.

10. The following motion was made by Edgar L. Layard, Esq., and seconded by Major Lushington:—

“That the Society do record its sense of the loss which this Society, as well as the public, has sustained by the premature death of George Gardner, Superintendent of the Botanical Gardens at Pérádeniya, and a Member of the Ceylon Branch of the Royal Asiatic Society.”—Unanimously agreed to.

Resolved,—That the above resolution be communicated by the Secretary to Dr. Gardner's family.

11. Moved by R. E. Lewis, Esq., seconded by J. E. Middleton, Esq. :—

“That the thanks of the Society be given to the Officers of the Society for the past year.”—Agreed to unanimously.

Resolved,—That the following gentlemen be the Officers of the Society for the ensuing year :—

Patron.

The Right Honourable Lord Viscount Torrington.

Vice-Patrons.

The Honourable Sir A. Oliphant, Chief Justice.

The Right Rev. James Chapman, D.D., Bishop of Colombo.

The Hon. Mr. Justice Stark.

President.

The Honourable C. J. McCarthy, Esq.

Vice-President.

Rev. D. J. Gogerly.

General Committee.

F. Willisford, Esq., M.D.

Dr. J. B. Misso.

J. E. Middleton, Esq.

J. O'Halloran, Esq.

James Steuart, Esq.

Rev. G. Muttukistna.

C. Caldwell, Esq.

with power to add to their number.

Treasurer and Librarian.

J. Capper, Esq.

Secretary.

E. L. Layard, Esq.

Museum.

The following gentlemen to act as Curators in the several departments :—

Geology and Mineralgy, Mr. Rudolph Gygax.

Conchology, Land and Fluvatile Shells, F. Layard, Esq.

Do. Sea Shells, Corals, &c., J. E. Middleton, Esq.

Natural History generally, E. L. Layard, Esq.

Numismatics, Mr. Justice Stark.

Arts, Manufactures, &c., J. Capper, Esq.

DR. THE ASIATIC SOCIETY in account with the Treasurer, to February 28, 1849. CR.

1848.		March 1, 1848.		£. s. d.	
Paid	Peon in charge of room for five months	...	...	1	10 0
"	Clerk for April and May	...	...	0	6 0
"	for Bookbinding	...	...	2	18 0
"	for Stationery	...	...	1	6 0
"	for Printing Circulars, Notices, &c.	...	...	4	0 6
"	for Freight and Carriage of sundry Books, Parcels, &c., from Calcutta, Batavia, and by overland	...	...	3	12 8
"	remittance to Calcutta on account of Books, &c.	...	...	12	0 0
"	remittance to Madras for Lithographs	...	...	5	10 3
"	for Colouring Diagrams for Journal	...	...	1	5 0
"	Postages to and from Calcutta, Singapore, China, Madras, and London	...	...	2	16 5½
"	for Books purchased in London and Ceylon	...	...	4	2 6
"	to the Museum Fund, as agreed	...	...	7	0 0
Balance				46	7 4½
Total				16	0 6
Total				£62	7 10½

Colombo, February 28, 1849.

E. E.
JOHN CAPPER,
Treasurer.

N.B.—Arrears of Subscriptions for 1848		£5	5	0
of Entrance Fees		1	11	6
		£6	16	6

LIST OF BOOKS, PAMPHLETS, &c.,

Presented to and Bought by the Society during 1848.

Davis's Chinese Novels	...	...	Vols. 1
Maurice's Ancient History of Hindostan	...	...	2
Kindersley's Hindu Literature	...	...	1
Lasson's Bactrian Coins	...	...	1
Kelly's Oriental Meteorology	...	...	1
Bentley's View of Hindu Astronomy	...	...	1
Handbook to Egypt and India	..	...	1
Moon's Botany	...	...	1
Milburn's Oriental Commerce	...	...	1
Parke's Travels in Africa	...	...	1
Sir W. Malcolm's History of Persia...	...	...	2
Hoffmaister's Travels in Ceylon and India	...	...	1
Campbell's Field Sports of Ceylon	...	...	2
A Treatise on Diamonds	...	...	1
The Pearl Fishery of Ceylon	...	...	1
A Treaties on Pantheism (Dutch)	...	...	1
Reports on the Financial Condition of Ceylon	...	...	1
Blue Book of Ceylon	...	...	1
Calcutta Review	...	...	Nos. 4
Journal of the Asiatic Society of Bengal	...	...	12
Journal of the Eastern Archipelago...	...	...	12
Journal of the Geological Society of London	...	...	4
Journal of the Statistical Society of London	...	...	4
A Geological Map of England.			

LIST OF MEMBERS.

Alvis, J. De	Mooyart, J. N.
Armitage, John	Murdoch, John
Bessell, H.	Muttukistna, Rev. E.
Bishop of Colombo, the Right Rev.	Nelson, J. B.
Boake, Rev. B.	O'Halloran, J. C.
Bowker, John	Oliphant, Sir A.
Braybrooke, F. G.	Ondaatjie, J. M.
Brodie, A. O.	Palm, Rev. J. D.
Caldwell, E. C.	Percival, Rev. P.
Capper, John	Perera, H.
Chetty, John C.	Pole, H.
Chetty, Simon C.	Selby, Hon. H. C.
Davies, Rev. J.	Sillery, H., C.R.R.
Dawson, Rev. C. C.	Smith, D.
Dawson, Robert	Smith, James
Dickson, Rev. W.	Soysa, L. De
Dodsworth, B.	Staples, H. J.
Gogerly, Rev. D. J.	Stark, Hon.
Grace, A.	Steuart, Dr.
Gygax, Dr. R.	Steuart, George
Kessen, Rev. Dr.	Steuart, James
Layard, E. L.	Taylor, W. S.
Layard, F.	Tennent, Sir J. E.
Lewis, R. E.	Torrington, His Excellency
Lister, S.	Viscount
Livera, F. De	Twynam, W.
Lushington, Major	Whitehouse, E. L.
MacCarthy, Hon. C. J.	Williams, R. E., R.A.
McVicar, Rev. Dr.	Willisford, F., M.D
Middleton, J. E.	Worms, G.
Misso, Dr. J. B.	Worms, M.

	9 A.M.			Noon.			3 P.M.			Highest.	Lowest.	Mean of whole.	Range.	No. of Rain days.	Thunder days.	Thunder or Lightning at Puttalam.	Wind.				REMARKS.
	Max.	Min.	Mean.	Max.	Min.	Mean.	Max.	Min.	Mean.								S.W.	N.E.	Other Directions.	Calm.	
1847.																					
Aug....	83.75	79.25	81.38	85.75	80.5	83.07	85.5	80.5	83.09	85.75	79.25	82.51	6.5	3	2	0	31	0	0	0	Thermometer in a verandah running E. and W., and slightly protected by a cadjan.
Sept. ..	82.0	73.0	80.363	84.0	79.0	82.786	83.5	77.5	82.522	84.0	73.0	84.89	11.0	5	3	1	30	0	0	0	
Oct....	82.0	76.7	88.33	84.5	80.0	82.64	84.5	78.2	82.0	84.5	76.7	81.66	7.8	18	13	4	21	2	0	8	
Nov....	80.75	72.0	78.15	83.25	78.0	80.44	85.0	78.0	80.65	85.0	72.0	79.75	13.0	24	15	5	11	4	7	8	
Dec....	81.0	74.25	77.687	83.5	75.5	79.711	84.75	76.0	77.29	84.75	74.25	78.229	10.50	19	11	3	0	10	19	2	
1848.																					
Jan. ...	79.0	73.0	75.5	82.5	77.25	79.816	83.0	78.75	81.736	83.0	73.0	79.017	10.0	2	1	0	0	31	0	0	
Feb....	81.5	76.0	78.938	86.5	77.5	82.68	86.5	77.5	81.66	86.5	76.0	81.093	10.5	8	10	0	0	22	2	4	
March.	86.0	80.5	82.988	89.0	83.0	86.5	91.25	83.5	87.9	91.25	80.5	85.796	10.75	4	16	1	5	4	19	3	
April..	86.5	78.0	83.226	89.5	82.0	86.423	90.0	72.0	86.25	90.0	72.0	85.299	18.0	11	20	4	21	0	6	3	
May ...	84.5	77.75	81.094	86.0	76.5	83.37	86.0	78.0	83.123	86.0	76.5	82.529	9.5	10	4	3	30	0	0	1	
June ..	83.5	81.25	82.125	84.75	82.5	83.275	85.5	83.0	83.691	85.5	81.25	83.03	4.25	4	0	0	29	0	0	1	
July ...	82.5	76.0	79.923	86.0	78.0	82.11	86.5	78.5	82.186	86.0	76.0	81.406	10.5	4	3	0	27	0	0	4	
	...	...	80.142	...	...	82.735	...	...	82.675	91.25	7.20	81.851	91.25	9.33	8.17	1.8	205	73	53	34	

Mean Average Temperature of Puttalam during the above period, as obtained by calculation = 79.718.

REMARKS.

August, 1847.—Temperature equable, weather pleasant, sky clear, with detached cirrus and cirro cumulus ; in the evenings clouds collect to the N. and N.E., in which direction thunder was heard on two nights. S.W. wind prevalent, generally gentle, and interrupted by calms at night and in the morning ; tanks dry.

September.—Weather very pleasant, sky clear, two strata of clouds constantly observed, the lower drifting along with the monsoon, the upper stationary. Rain (with one exception) in the form of scarcely perceptible showers. Thunder heard on three occasions, far to the east. S.W. blowing continuously from 2nd to 11th, wind very high, at night and in the mornings calms frequently observed ; tanks dry.

October.—Very rainy month, thunder observed on fourteen days, but only on two occasions did the storm pass over Puttalam. S.W. still prevalent, but interrupted by those from the N. and N.E. and also by calms, which occur almost every morning and during the night. Between the rainy days atmosphere astonishingly clear, distant objects appearing very sharply defined, false sunsets, and halos observed on several occasions ; appearance of the sky in the evening very beautiful.

November.—Rain almost every day, frequently heavy ; lightning observed very frequently in the evening, generally towards the south, sometimes all round ; only five storms approached Puttalam ; wind variable, with frequent calms at evening, morning, and during night.

December.—A rainy month ; lightning far to the south frequently observed during the evening ; three storms passed near Puttalam ; first ten days dull and cloudy, after that generally clear ; wind variable, generally from the N. The S.W. has quite ceased ; weather delightful in the intervals between the rainy days.

January, 1848.—N.E. blowing continuously, at times strongly ; sky very clear ; heavy dews at night, mornings chill, lightning occasionally observed far to the south in the evening ; little rain.

February.—Wind blowing nearly continuously from the N.E., and gently, especially in the mornings, veering to the E. at night. Rain fell on ten days, but only in slight showers, although the appearance of the sky about sunset was frequently very lowering ; in the evening distant lightning to the south and all round observed on ten days.

March.—Wind generally blowing from the N., shifting constantly a little to the E. or W. ; frequent calms in the morning, sky generally clear ; only one storm passed over Puttalam, although distant lightning was observed on sixteen evenings, generally towards the N. and N.E., latterly also towards the S. and S.E.

April.—The S.W. again the prevailing wind, blowing gently in the earlier part of the month, more violently afterwards ; evenings frequently threatening, and lightning observed on twenty occasions to the S.S.E., and all round ; four storms approached Puttalam.

May.—S.W. monsoon blowing steadily and rather strong, sky cloudy throughout the latter part of the month, distant lightning seldom observed ; three storms accompanied by violent wind visited the station.

June.—S.W. blowing continuously and strong, sky cloudy ; four scarcely perceptible showers ; calms.

July.—S.W. still blowing, generally rather strong, sky cloudy, calms in the morning at commencement and end of month ; in the middle of the month four boisterous days with heavy rain.

A. OSWALD BRODIE.

Puttalam, August 12, 1849.

ABSTRACT OF A METEOROLOGICAL REGISTER KEPT AT BATTICOTTA, NEAR JAFFNA, DURING 1847 AND 1848.

MONTH.	THERMOMETER.		WET BULB THERMOMETER.			BAROMETER CORRECTED.		AMOUNT OF RAIN.	COURSE OF WIND.	STRENGTH OF WIND.	CLOUDS, &c.	GENERAL REMARKS.
	Mean.	Max.	A.M. h. m. 9 30	A.M. h. 12	P.M. h. m. 3 30	Max.	Min.					
1847.												
January ...	78.0	80.1	5.3	5.8	6.5	30.032	29.936	1.57	N.E. & E.N.E.	2.4	Flying clouds and cloudy	Heavy dew daily. Three rainy days.
February ...	81.2	85.3	4.7	7.1	3.5	30.051	29.897	1.70	Variable from S.E. to N.W.	2.3	Flying clouds	Fair, with heavy dew.
March ...	82.1	85.2	5.3	6.3	6.7	29.966	29.859	1.42	E.N.E. to N.E.	1.3	Flying clouds and cloudy	Dew lighter. Four showery days and thunder.
April ...	84.6	87.4	5.4	6.4	6.6	29.910	29.807	2.06	E. & S.W.	3.5	Flying clouds	Fair, six days thunder, five days rain. Little dew.
May ...	85.5	87.6	6.1	6.7	6.1	29.879	29.750	0.24	S.W. & W.S.W.	3.4.6	Cloudy	Mostly hazy, with one or two thunder showers.
June ...	84.6	87.2	2.3	7.7	7.0	29.786	29.671	1.80	S.W. & W.	2.4.5	Cloudy and flying clouds	Hazy, with three rainy days.
July ..	83.7	86.7	5.2	6.2	6.6	29.790	29.698	0.96	S.S.W. & S.W.	2.3.4	do. do.	Six days rain and thunder. Generally hazy.
August ...	83.8	87.3	4.6	5.3	6.8	29.807	29.709	1.00	do	2.3.4	do. do.	Two days rain, three thunder. Mostly hazy.
September ...	82.4	86.4	4.4	7.5	6.2	29.834	29.693	0.09	S. & S.W.	4.5.6	Cloudy	Generally hazy, with thunder.
October ...	82.6	83.6	3.8	3.0	4.4	29.877	29.768	18.38	S.S.W. & S.E.	1.3	Light flying clouds	Twelve days thunder, rain, and lightning. } Dew
November ...	80.2	82.3	1.9	2.6	3.3	29.908	29.829	11.62	S.E.N. & N.E.	2.4	Flying clouds	Five days thunder. } morning.
December ...	78.6	79.6	2.9	3.3	3.2	29.905	29.804	13.26	N.E. & N.W.	3.4.6	do.	Eleven days rainy.
1848.												
January ...	78.2	81.4	4.4	5.4	6.1	29.965	29.903	1.35	N.N.E. & N.E.	2.3	Cloudy generally	Two days light showers. Mostly fine, with dew.
February ...	79.9	82.3	5.9	5.9	6.5	30.033	29.842	0.75	N.E. & E.N.E.	2.3.4	Flying clouds	Five days light rain, fine, with dew.
March ...	82.8	86.4	5.8	7.2	8.6	29.919	29.804	0.95	Variable	1.3	Clear, with some flying clouds	Fair, with haze and dew A.M.
April ...	85.4	88.4	5.4	5.2	6.2	29.883	29.725	10.96	do.	3.4.5	Cloudy	Thunder showers. Hail fell once.
May ...	85.1	86.7	4.9	5.9	6.1	29.800	29.711	2.80	S.W. & S.S.W.	3.5	Flying clouds during all the month	Hazy, with one or two squalls of rain.
June ...	84.5	87.2	5.2	6.6	6.8	29.786	29.702	0.08	W.S.W. & S.W.	3.4.5	Clear, with occasional clouds	Hazy, but fair. One thunder squall.
July ...	82.9	85.6	4.1	5.3	5.7	29.786	29.700	1.76	S.W. & W.	4.5.6	Cloudy	Hazy, with thunder and rain occasionally.
August ...	82.4	85.7	3.6	5.3	5.7	29.791	29.705	2.35	S.S.W. & S.W.	2.3.4	do.	do. do.
September ...	82.7	86.1	4.1	5.7	5.9	29.855	29.035	5.14	W.S.W. & W.	2.3.4	Cloudy and flying clouds	Thunder seven days, rain seven days. Hazy.
October ...	81.5	83.7	3.3	3.9	4.5	29.888	29.793	2.24	S.W. & W.	3.4.4	Flying clouds	Rain nine days, with some thunder. Hazy.
November ...	79.1	81.2	2.7	3.5	4.0	29.926	29.159	18.72	Variable	3.4.5	do.	Rain fourteen days. Little dew.
December ...	78.4	80.7	4.2	5.6	5.9	29.737	29.887	4.40	N. & N.E.	4.5	Cloudy	Rain fourteen days.

PRINTED AT
THE GOVERNMENT PRINTING WORKS,
COLOMBO, CEYLON.

JOURNAL
OF THE
CEYLON BRANCH
OF THE
ROYAL ASIATIC SOCIETY,
1849-50.

VOLUME II.

No. 5.

*The original of part 5 is in B.M.
It is not called "part 5" is simply
"150", is unpaginated. The original
supplication is here supplied in pencil
to the new species.*



COLOMBO:

H. C. COTTLE, ACTING GOVERNMENT PRINTER, CEYLON.

1890.

Reprint

PRINTED AT
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CONTENTS.

	PAGE
Remarks on some Analyses of the Coffee of Ceylon, with suggestions for the application of Manures.—By Dr. RUDOLPH GYGAX 	131
A Descriptive Catalogue of the Woods of Ceylon.—By JOHN CAPPER, Esq. 	135
A Catalogue of Ceylon Woods.—By JOHN CAPPER, Esq. ...	143
Sketches in the Natural History of Ceylon : Description of two Minute new Freshwater Molusks of the Genus <i>Planorbis</i> and <i>Bithinia</i> .—By EDGAR L. LAYARD, Esq. ...	156
An Outline of the Tamil System of Natural History.—By SIMON CASIE CHITTY, Esq. 	159
Prison Discipline in Ceylon.—By A. G. GREEN, Esq. ...	166
A Catalogue of Books in the Tamil Language, with the names of the Authors, the Subjects, and the Dates, as far as they can be ascertained.—By SIMON CASIE CHITTY, Esq. ...	180
Sketches in the Natural History of Ceylon : Part I., Mammalia.—By EDGAR L. LAYARD, Esq. 	188
Sketches in the Natural History of Ceylon : Part II., Ornithology.—By EDGAR L. LAYARD, Esq. 	199
Notes on the Geology of Ceylon : Laterite Formation—Fluvial Deposit of Nuwara Eliya.—By E. F. KELAART, M.D. ...	210
On the Manufacture of Sugar from the Juice of the Coconut Tree.—By J. G. TAYLOR, Esq. 	220
On the Sap of the Coconut Tree, and its Manufacture into Sugar.—By W. S. TAYLOR, Esq. 	231
On the Elu Language, its Poetry and its Poets.—By JAMES DE ALWIS, Esq. 	241
List of Mammalia of Ceylon Observed or Collected.—By E. F. KELAART, M.D. 	316
Description of New Species and Varieties of Mammals found in Ceylon.—By E. F. KELAART, M.D. 	321

APPENDIX.

	PAGE
Proceedings of the Meetings of the Ceylon Branch of the Royal Asiatic Society held on June 9, 1849 ...	331
Do. December 1, 1849 ...	332
Do. February 23, 1850 ...	334
Do. March 23, 1850 ...	336
Do. June 22, 1850 ...	341
Do. August 13, 1850 ...	346
Abstract of a Meteorological Register kept at Batticotta in 1849	348
List of Members of the Society ...	351
List of Officers of the Society ...	353
List of Books presented to, and purchased by, the Society ...	354

ERRATUM.

 In head-lines to Journal, Volume II., Nos. 4 and 5, omit "Part I."
and "Part II."

ROYAL ASIATIC SOCIETY, CEYLON BRANCH.

REMARKS ON SOME ANALYSES OF THE COFFEE OF CEYLON, WITH SUGGESTIONS FOR THE APPLICATION OF MANURES.


BY DR. RUDOLPH GYGAX.

(*Read June 9, 1849.*)

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I much regret that the means at my disposal have not allowed me to carry out any quantitative analysis, but the results of my labours are sufficiently accurate for present purposes. I have analysed the wood and fruit of trees from two different localities, as well as the ashes of some plants sent me from the Rájawella estate, near Kandy, and they all tend to bear out the result of Mr. Herepath's inquiries. Placing the substances traced in the coffee plant in the order

in which they occur in the greatest quantity, they will stand thus :—

Lime.	|	Magnesia.
Potash.		Phosphoric acid.
Other acids.		

Of these, lime is by far the most prominent, forming about sixty per cent. of the whole.

I cannot help, therefore, arriving at the conclusion that to cultivate coffee with any degree of success the first-named substance must be present in the soil, or, if not present, must be supplied to it by some process.

Now, it is a singular fact that the rocks and soils of Ceylon are greatly deficient in alkaline matter, and taking this view of the case, one no longer wonders that many estates cease to produce coffee. That all, or nearly all, the plantations did in their first year or two of bearing produce liberally in fruit may readily be accounted for by the fact that the alkaline poverty of the soil was enriched by the burning of the vast quantities of timber which lay felled on all sides. Whilst this temporary supply lasted, all was well with the planter. Heavy rains and frequent scrapings of the steep land by the mamoty soon dissipated this scanty supply, and short crops are now the consequence.

But nature, ever bountiful, ever ready to compensate for all deficiencies, has provided to our hands a ready means of remedying this evil of the soil by scattering throughout most parts of the interior supplies of dolomitic limestone. The dolomite of Ceylon is not pure,—far from it,—being mixed freely with apatite or phosphate of lime. Even in this very accidental circumstance the coffee planter is aided; for the phosphoric acid thus combined with the limestone is the very substance required in addition. Some of the finest properties in the Island are situated on a limestone bottom, and these no doubt will continue to yield abundant crops for a very long period.

It has been urged against this opinion, that in some districts where coffee planting has proved a complete failure, dolomite is found most abundantly; but I have very little doubt that the dolomite here alluded to is only magnesian limestone, of which a great deal exists in the Central Province, and which is most inimical to the coffee bush.

I am aware that already several manures have been tried on coffee with varying degrees of success. Guano has, I believe, quite failed, and is, besides, very costly. Cattle manure is said to be effective, and no doubt it is; but it is a costly and troublesome affair. Bones, ground fine, are now being tried, though they cannot but prove most expensive, especially when imported.

A ton of bone dust consists of :—

Animal matter	...	746 lb.
Phosphates of lime, &c.	...	1,245 lb.
Carbonates of lime, &c.	...	249 lb.

The virtue of bones lays in the phosphates far more than in the animal matter, and thus their action on soils is felt for many years after their application. The Singhalese cultivators of paddy about Colombo and Galle appear to have been long aware of the fertilising effects of this kind of manure, and import the article in dhonies from many parts of the coast. They bruise them coarsely before applying them.

The partially decomposed husks of the coffee berry have been tried for some years, and successfully; but they are difficult of collection and bulky to remove from one part of the estate to the other.

In Europe it would appear that little is yet known as to the causes of the fertilising effects of oil-cake: some suppose them to arise mainly from the oil left by the crushing process, but this is not at all clear. I do not, however, see that we must look for much assistance from poonac as a manure for coffee; for the cocoanut tree it is doubtless most

valuable. But we have yet to learn that beyond supplying so much more vegetable matter, it helps the action of the soil on the roots of the coffee bush, which, after all, is what is really required.

For the proper application of the dolomite to land as manure, it should be freely burnt in a kiln with a good quantity of wood, the ashes of which should be afterwards mixed with the burnt lime, and the whole exposed for several days to the action of the air, sheltered of course from the weather. The mixture should be applied just before the setting in of the monsoon rains ; if the land be tolerably level the lime may be scattered broadcast on the surface, though not quite near the plants. When the estate to be manured is steep, then the substance to be applied should be placed in ridges cut crossways to the descent of the slopes.

About one hundredweight to the acre would be ample for most lands ; some may, however, require more. The contents of the husk-pits might advantageously be mixed up with the burnt lime when a sufficiency of it has been saved.

A DESCRIPTIVE CATALOGUE OF THE WOODS OF CEYLON.

BY JOHN CAPPER.

(*Read August 25, 1849.*)

THICKLY covered as the greater portion of this Island is with dense forests or jungle, it cannot be matter of surprise that its woods should be found in the greatest variety. This fact seems to have been noticed in almost every published account of the Island. All the works which treat of Ceylon make allusion to its many useful and ornamental woods, though very few of these have entered upon any detail. Indeed, we can glean but scanty information even from the best of these writers.

Knox, in his account of Ceylon, tells us but little on this subject, and the same may be said of Perceval; whilst Cordiner gives merely a list of some dozen kinds of woods. Bertolacci tells more than any other writer of the state and value of the timber trade of the Colony, though he does not seem to have been acquainted with many varieties of woods. He considered that by the acquisition of the Kandyan territory the British had opened the way to great resources as regards timber, and beyond a doubt the vast tract of country stretching from the Kandyan mountain range through Bintenna, northwards and eastwards, comprises forests full of most valuable timber. This source of wealth is, however, at present nearly closed against us from the utter inability of the natives to transport any produce of weight to the sea coast, on account of the impassable state of the Mahaveli-ganga, a noble river which, according

to Mr. Brooke's report, might easily be rendered navigable for one hundred and thirty miles from Trincomalee, and which runs during a great part of its course through a dense forest of ebony, satinwood, and halmililla.

A later writer on Ceylon—Mr. Bennett—enumerates ninety varieties of woods by their native names, but enters into no detail whatever as to their particular uses or localities, though he calls them “Kandyen woods.”

A list of about two hundred varieties was taken home by the late Sir A. Johnstone, and by him presented to the parent Society, which afterwards, on the appointment of Mr. Stewart Mackenzie to this Government, requested him to collect and send the Society specimens of, and information regarding the woods. This was not done, and I believe nothing more has been attempted, save a few small collections by various individuals; amongst these may be mentioned the specimens and catalogue presented to this Society by Mendis Muhandiram.

In offering a few remarks accompanying the catalogue which I have prepared of the woods of this Island, I consider that the subject is no more than barely touched upon. The few facts, however, now thrown together may be the means of inducing some of our many outstation members to contribute to our stock of information.

The first step towards an account of Ceylon timber is undoubtedly to form a catalogue. The list with this I have compiled by the aid of others. It comprises not less than four hundred and sixteen varieties, which, it is believed, are nearly all those which have been observed, though it is possible that in the dense forests of Bintenna there may be yet many new varieties.

But a small portion of these are known by English names, and I have as yet been able to find the botanical names of very few. A column is added to show the comparative

value of these woods for useful purposes, in which they are numbered 1 to 4.

Those numbered 1 are the most valuable, either for ornamental work or for building purposes, and able to stand long exposure to weather.

The woods marked 2 are those which, though good, are not so strong nor so well able to bear exposure out of doors.

No. 3 are such as are only used for inferior purposes, and seldom, if ever, employed for house-building, except perhaps by the natives. They are used chiefly for packing-cases, dry casks, ceilings, stands for goods, common door or window frames, partitions in rooms, or similar purposes.

No. 4 comprises all those woods which are unfit for carpenters' work, and are either quite useless, or only employed for constructing mud and stick houses or other rough and temporary jungle work.

Of the four hundred and sixteen varieties, there are :—

33 of No. 1.	|	162 of No. 3.
82 of No. 2.	|	139 of No. 4.

Of those included in the first class, the most prominent are the calamander, the *kaḍumbériya*, the ebony, and satinwood, the two latter being best known, as they are found in sufficient quantities to enable them to be used for building or other purposes, as well as for ornamental works.

Ebony is too well known to require description. It grows chiefly in the Northern and Eastern Provinces, but it is also met with in the Kandyan district: a large forest of it existed at one time in the vale of Dumbara, which has since given place to coffee bushes. It is not used for any purposes in Ceylon beyond furniture and articles of ornament, but it is exported largely to Europe at times. It is far more difficult to work up than satinwood, and also more brittle.

The *kaḍumbériya*, or bastard ebony, is of a fine black colour, deeply and richly veined with red, and admirably adapted for furniture; it is excessively hard, but not so

plentiful as ebony. It is found in the same districts as the preceding.

Calamander is valuable, not only on account of its beauty, but also by reason of its increasing scarceness; it is only to be met with in the forests near Ratnapura and in the Pasdun kóralé, and even there it is found to be very small. The tree is of very slow growth, the natives believing that one of an ordinary size is at least three hundred years old; it is pretty certain that in a very few years there will not be sufficient calamander in Ceylon to make a single pair of couches.

The satinwood is more plentiful in certain localities than either of the preceding: it is found chiefly in the Northern, North-Western, and Eastern Provinces, growing generally to the height of one hundred feet. The variegated or flowered satin is the most valuable for furniture, but it is found in comparatively small quantities—probably not more than three per cent. of the trees on the east coast yield this quality; but in the country about Puttalam it is said to prevail to the extent of fifteen or twenty per cent. Satinwood is admirably adapted to all purposes requiring great strength and resistance to weather. It is much used for piles of bridges, and is almost, if not quite, the only wood which will stand as teeth in cog-wheels of machinery,—ebony, though harder, being too brittle. In the Eastern Province this wood is most abundant, and nearly all the houses are built of it, even down to the flooring.

There are some other woods which would appear to be well adapted for ornamental furniture work, though, with the exception of the *nedun* wood, not yet employed for such purposes: these are the *nedun*, the tamariud, and the *del* woods, all of which, save the last, are hard, of a close grain, admitting of a fine polish, and tolerably abundant in the Western and Southern Provinces.

After the four first-enumerated woods may be placed others equally useful, though less valuable, because more abundant, such as the teak, jak, *kina*, *milila*, *súriya*, *hal-milila*, *ná*, &c. Of these, the only one employed for furniture is the jak, which, when well selected and polished, very frequently equals good mahogany. The want of grain in the others named alone prevents them from being used for similar purposes, as they are equally compact in texture and smooth under the tool.

It is doubtful if teak is indigenous to Ceylon, but however this may be, the chief supply is derived from Moulmein and Cochin, though a good deal is to be met with in various parts of the Western and Southern Provinces, having been planted by the Dutch Government to a considerable extent. The quality of this cultivated timber is superior to that of the imported, though it does not often arrive at the same size. For quality the Ceylon teak stands first, the Cochin second, and the Moulmein timber last.

It will not be easy to find a tree more generally useful than the jak, if we except the cocoanut tree. Scarcely a native garden of any size is to be found without at least one spreading its ample shade over the space before the dwelling, and yielding its abundant harvest of fruit. Jakwood, besides being most valuable for furniture, is admirably adapted for all purposes of house or boat-building. It stands the action of the weather and attack of worms, it lasts longer under water, when used in boats, than does teak, and it is far superior to that wood for upper planking of boats, where it is liable to come in frequent collision with other bodies. For this quality of resistance jak is only inferior to satinwood. *Domba*, being cheaper, is usually employed to form the stems and stern posts of large cargo boats. The jak tree hollowed out makes an excellent canoe; indeed, there are very few purposes for which this wood is not adapted.

Milila is superior to jak for some purposes, being of a rather closer texture. It is much preferred for frames of doors and windows, as it is not liable to warp or shrink ; it is, however, rather more scarce than jak, and in the Western and Southern Provinces it is comparatively rare.

Hal-milila is a most useful wood for casks, especially as packages for oil or arrack ; indeed, there is no other wood in sufficient quantity adapted for the same purpose. It is close grained, free from resin, and very pliable in the cooper's hands. It is, moreover, a very clean timber, and does not impart colour or taint to any liquid. Teak has been sometimes used for oil casks on the coast, but it is not liked here, as from its brittleness it is more liable to fracture.

Hal-milila grows to a great height, and usually very straight ; it is used frequently for beams of a large span, though not preferred for this purpose. It is also in great request amongst carriage-builders for spokes of wheels and several parts of the carriage body. The principal supply to the Colombo market comes from Trincomalee and Batticaloa, where, especially between the latter place and the Bintenna country, immense forests of it are found adjoining rivers, without the aid of which the cost would be greatly enhanced in conveying it to the sea coast. The timber contractors employ in the felling of this and other woods the village Veddás of Bintenna, and by their aid supply the owners of small vessels and dhonies, who are mostly Moormen, and these bring it round to Colombo, the profit on the transaction giving them a very fair freight for their vessels.

The *kina* is another lasting and useful wood, and from its great length and straightness is generally employed for masts and yards of vessels. It is to be met with in all the maritime provinces of the Island.

The principal use of the *súriya*, or Persian wood, is for

the shafts and other bent parts of carriages. The tree is too well known as the tulip tree to require any description.

Not the least important of these woods classed as second in value are the palmyra and *kitul*: both palms are valuable for building purposes, for which they are very lasting, as well as for yeilding a good quality of jaggery; from this in some places a fine white sugar is made. The former of these trees grows chiefly in the Northern Province, whence a large trade is carried on to Colombo and the opposite coasts of India. The chief use of the palmyra is for rafters, that of the *kitul* for reepers. These latter are known commonly as nipera reepers, and are dearer than any other kind; they last in many instances for fifty or sixty years. The *kitul* is used, in addition to the above purposes, for handling tools, and for spears for hunting wild hogs and porcupines. It grows in various parts of the Island, though not abundantly.

The *gal-mendóra* is very good timber for beams, wall-plating joists, planking, or similar purposes, and is much used as a cheap substitute for more durable wood. It is abundant in most parts of the Island, and grows to a large size.

In addition to the above enumerated, there are some others of this class equally valuable, but by far too rare to be cited as useful woods.

In the third class there are a far greater number than of the previous descriptions. Foremost amongst them in value are the *muruta*, *godapara*, *kiri-hembiliya*, *hora*, *gona*, *ubbériya*, *hal*, and *diyapara*. These are all good for secondary house-building use under cover, and the three former well adapted for dry coopering purposes. The *diyapara* and *muruta* for casks may be ranked just before *hora*, *hal*, and *ubbériya*. They are all light in texture, and easily worked; the most abundant of them is the *hal* and *hora* wood.

These are the woods almost universally employed for coffee casks, their cheapness greatly recommending them for the purpose. The former abounds in all the forests of the maritime and Central Provinces. I am of opinion, however, that more unsuitable wood could hardly be found than this and the *hora*; indeed, unless they be remarkably well seasoned or deprived of their resinous and gummy matters by boiling, they are about the worst timber that could be used for coffee. I have seen floating on the surface of water in which these woods had been boiled a scum, an inch thick, of dark gummy matter, the liquor emitting an offensive odour. In addition to this the porous nature of the wood is an objection not to be overlooked. These are disadvantages which do not occur in other kinds of wood to nearly so great an extent.

Although being placed in the third class for reasons already assigned, the cocoanut is by far the most valuable of the trees of Ceylon to the natives, and regarded in a commercial point of view, it must be so considered by Europeans. Its use generally as a building wood is confined to the natives, who require no other with which to construct their humble dwellings. For rafters it is also used generally. The harder part of the tree is capable of being worked up for furniture and ornamental purposes, admitting of a very good polish; it will not, however, stand any long exposure to weather, and the green wood will decay in ten days or a fortnight if left exposed. There would appear to be no portion of this truly valuable tree lost to the Singhalese: every part from the root to the dried flower and the stalks of the leaves is placed to its own proper use.

In the fourth class are found all those woods which are either quite useless, save for firewood, or are only employed for the most inferior works, such as fencing gardens and for the walls of temporary mud and stick huts. They are

mostly of very rapid growth and equally rapid in decay, some of them falling to pieces within a few days of being felled.

I know of no peculiarity attaching to any of this class of woods, save to the *riti-gaha*, the wood of which is perfectly useless, but its bark is turned to good account by the natives of Badulla and Uva, in the forests of which districts the tree chiefly grows. The bark is very pliant and durable, and the villagers avail themselves of these qualities by stripping it from the tree in large pieces and sewing it up into bags, in which they convey coffee or paddy to market on their bullocks' backs. The *kirilla*, or corkwood, is useful on account of its softness for lining insect cases.

CATALOGUE OF CEYLON WOODS.*

Sinhalese Name.	English Name.	Botanical Name.	Quality.	Abundance.
Aaridde	...	...	...	3 B
Agalandere	... Malabar Nut	...	...	3 B
Ahu	... Broad-leaved Morinda...	Morinda sp.	...	4 B
Akmelle	...	...	...	3 C
Alebeiriye	...	...	...	3 B
Aleheriliye	...	...	...	3 C
Alerin	... Caneru	...	...	4 C
Alpedde	...	...	...	3 B
Aluboa	...	... Calyptranthes jambo- lana	...	3 B
Alukettiya	...	...	...	4 B
Aludel	... Dell	... Artocarpus pubescens	...	2 B
Ambe	... Mango	... Magnifera indica	...	4 C
Angene	...	...	...	3 C
Ankende	...	...	...	4 B
Anoana	... (Netted) Custard Apple	Anona squamosa	...	4 C
Arreloo	... Gallnut	... Terminallia chebula	...	2 C
Arreliye	... Oleander	...	...	4 C

* Reprinted exactly from the original edition of 1849.—Hon. Sec.

Sinhalese Name.	English Name.	Botanical Name.	Quality. Abun- dance.
Arremene ...	—	—	... 2 C
Attikka ...	—	... Ficus sp.	... 4 C
Atoketiye ...	—	—	... 4 C
Autton ...	—	—	... 4 C
Badoella ...	—	—	... 4 B
Bairiye ...	—	—	... 4 C
Bakmie ...	—	—	... 3 C
Bale ...	—	—	... 4 C
Baludan ...	—	—	... 4 B
Bambere ...	—	—	... 2 C
Bappede ...	—	—	... 3 C
Batdambe ...	—	—	... 3 C
Battedombe ...	Clove Tree	—	... 3 B
Battekeena ...	Wild Keena	... Calophyllum acumenatum	... 4 B
Battekirille ...	Shining-leaved Erythroxylon	—	... 3 D
Bely ...	Bengal Quince	... Ægle marmelos	... 4 C
Beligobot ...	Talia-leaved Hybiscus...	—	... 1 C
Beriliye ...	—	—	... 2 C
Bilin ...	Bilimbi Tree	... Averrhoa bilimbi	... 4 C
Boagaha ...	Buddha	... Ficus religiosa	... 4 C
Boakiri ...	—	—	... 2 C
Boamboo ...	—	—	... 4 B
Boamea ...	—	—	... 4 B
Bookende ...	Malacca Tree	—	... 4 C
Borre ...	—	—	... 3 B
Booloo ...	—	... Terminalia bellerica	... 4 C
Burutte ...	Satinwood	... Chloroxylon Swietenia	1 C
Cabalmara ...	—	—	... 4 B
Cadol ...	Leafy Mangrove	... Rhizophora Cadel	... 2 B
Cadoemberiye...	Bastard Ebony	... Diospyros ebenaster	... 1 C
Cadoroo ...	Spear-leaved Cerbera	... —	... 4 A
Cahamilille ...	—	—	... 1 C
Cahate ...	Astringent Tree	... Eleocarpus serratus	... 2 C
Cahadawata ...	—	—	... 3 D
Cadju ...	Cashew Tree	... Anacardium occidentale	4 H

Sinhalese Name.	English Name.	Botanical Name.	Quality. Abun- dant.
Calemadowa ...	—	—	... 3 C
Caletive ...	Cork-barked Quatteria...	—	... 3 C
Calooberiye ...	—	—	... 4 C
Caluhaberele ...	—	—	... 3 B
Calukeale ...	—	—	... 2 B
Calumediriye ...	Calamander	... Diospyros hirsuta	... 1 D
Caluverei ...	Ebony	... Diospyros ebenus	... 1 C
Carawoo ...	—	—	... 4 C
Carepinche ...	—	... Bergera Konigii	... 4 C
Carewele ...	—	—	... 4 C
Carre ...	Small-flowered Canthum	—	... 2 B
Carreboo ...	—	—	... 3 B
Catepete ...	Horny Alengeiena	—	... 2 C
Catoandere ...	—	—	... 1 D
Catoburute ...	Thorny Satinwood	—	... 1 D
Catoembool ...	Five-leaved Silk Cotton	—	... 4 B
Catokende ...	—	—	... 4 C
Catoekeale ...	Knotty Thorn	—	... 2 C
Caotkittool ...	Thorny Nipéra	—	... 3 C
Catokurundu ...	Thorny Scolopia	—	... 3 B
Catoveiriye ...	—	—	... 3 C
Caumorangau ...	Carambela	... Averrhoa carambola	... 3 C
Cauperiburute ...	Caffre Satinwood	—	... 1 D
Coan ...	Ceylon Oak	—	... 3 B
Coapy ...	Coffee	... Coffea arabica	... 3 A
Cobbæ ...	Saw-leaved Ornitrophe	Ornitrophe cobbæ	... 2 B
Coboamelle ...	—	—	... 3 C
Cocatiye ...	—	—	... 3 B
Coembook ...	—	... Pentapere paniculate...	... 2 B
Cohombe ...	—	—	... 2 C
Cohukirille ...	—	—	... 4 A
Colon ...	—	—	... 3 B
Coodeludehy ...	Caffre Lemon	—	... 3 C
Cukurumaan ...	—	... Randia dumetorum	... 3 A
Cooretiye ...	—	—	... 2 C
Corecaha ...	—	—	... 2 C
Cos ...	Jak	... Artocarpus integrifolia	1 A
Cosdambe ...	—	—	... 2 B

Sinhalese Name.	English Name.	Botanical Name.	Quality. Abundance.
Cotekimbula ...	Double-leaved Fig	...	4 B
Cottepol ...	—	...	3 C
Cottambe ...	Country Almond	... Terminalia catappa	3 B
Cukule ...	—	...	3 B
Cummelle ...	—	...	4 C
Curutiyedambe ...	—	...	3 B
Curundu ...	Cinnamon	... Cinnamomum zeylanicum	4 A
Daanga ...	Long-flowered Spathodea	—	4 B
Dadamary ...	—	...	4—
Dalook ...	Triangular Spurge	... Euphorbia antiquorum	4 C
Dambe ...	—	...	2 C
Daminne ...	—	...	3 B
Damonne ...	—	...	3 C
Dampere ...	—	...	4 D
Dan ...	—	...	4 A
Daweta ...	—	...	2 C
Dawalkurunda ...	—	...	4 B
Debere ...	—	...	3 B
Dedicaha ...	—	...	3 B
Dehy ...	Linæ	... Limonia sp.	3 A
Deloon ...	Pomegranate	... Punica granatum	3 C
Demete ...	—	...	4 B
Dimbool ...	Wood Apple	... Fercnia elephantum	4 B
Devicadaroo ...	—	...	4 B
Diyebeiriye ...	—	...	3 B
Diyehaberde ...	—	...	3 B
Diyeheliya ...	—	...	3 A
Diyenan ...	—	...	2 A
Diyapara ...	—	... Dillenia sp.	3 B
Diyeratembela ...	—	...	3 B
Diyetanliye ...	—	...	3 C
Dyietorene ...	—	...	2 B
Dodanpana ...	—	...	3 B
Dombe ...	Wild Jack	.. Calophyllum inophyllum	2 B
Dombekeena ...	Wild Keena	...	3 R
Dommele ...	Rosin Tree	...	3 B

Sinhalese Name.	English Name.	Botanical Name.	Quality. Abundance.
Doon ...	—	...	1 B
Donemadelan...	—	...	3 C
Eapette ...	Tage-leaved Alungria	—	2 B
Eariye ...	—	...	4 B
Eheale ...	Purging Cassia	Cassia fistula	2 B
Eheate ...	—	...	4 B
Elekeheriye ...	—	...	1 C
Elewaran ...	—	...	4 C
Elemediriye ...	—	...	2 D
Emberelle ...	—	...	3 B
Embille ...	Small-leaved Bramble...	—	3 C
Embooldeloon ..	Sour Pomegranate	...	3 D
Embooldodan...	Sour Orange	...	3 C
Emboolbakmee	—	...	4 C
Erebadoo ...	—	...	4 A
Esbedde ...	—	...	3 B
Etdemete ...	—	...	4 C
Eteheriliye ...	—	...	3 B
Ettekerean ...	—	...	3 B
Etembe ...	Wild Mango	Mangifera indica	4 A
Etone ...	—	...	4 A
Etteiriye ...	Ash-leaved Munuya	...	1 D
Ettoare ...	—	...	4 C
Galandere ...	—	...	2 D
Galis ...	—	...	2 C
Galkerew ...	—	...	2 C
Galkulu ...	—	...	2 C
Galmendora ...	Mendora	...	2 C
Galmora ...	—	...	2 B
Gasiyembela ...	—	...	2 C
Galvereloo ...	—	...	3 C
Gammanlo ...	—	...	2 C
Gammee ..	Oleandu Cassia	...	2 A
Gandepane ...	—	...	4 B
Gedeboo ...	—	...	4 B
Geriette ...	—	...	3 B

Sinhalese Name.	English Name.	Botanical Name.	Quality. Abundance.
Getenitol ...	—	...	2 C
Gerikuloo ...	--	...	2 C
Goanebaroo ...	—	...	3 B
Godacadooroo	Poison Nut	... Strychnos nux vomica	4 B
Godapara ...	—	... Dillenia dentata	2 A
Goketo or Kana Goraka ...	Gamboge Tree	... Hebradendron gambogioides	3 B
Gonele ..	—	...	3 B
Goolmore ...	—	...	4 B
Gonkea ...	—	...	3 C
Gonne ...	--	...	4 B
Goreka ...	Gorka Tree	... Garcinia sp.	4 A
Gotokeena ...	Large Keena or Calaba	Calophyllum calaba	3 C
Gurukeena ...	Small Keena	...	3 B
Gereike ...	—	...	3
Goorinde ...	—	...	4 C
Halpenne ...	—	...	4 B
Hakurusiyembel ...	Jaggery Tamarind	...	3 C
Hal ...	Hal	... Vateria indica	3 A
Halmendra ...	—	...	3 B
Halmilille ...	Halmilille	... Berria ammonilla	1 C
Hompalenden...	—	...	3 B
Hampinne ...	—	...	4 A
Handoonwenne	Ceylon Sandalwood	...	3 C
Hedewoke ...	—	...	2 B
Heenkebbelle...	—	...	2 A
Heennauren ...	Small Orange	...	3 C
Helenbe ...	—	...	3 B
Hick ...	—	...	3 B
Hingool ...	—	...	3 B
Hiricadol ...	—	...	2 C
Hoamdiriye ...	—	...	1 D
Hondepera ...	Large flowered Dilenia	... Dillenia sp.	4 B
Hora ...	Thief Tree	...	3 B

Sinhalese. Name.	English Name.	Botanical Name.	Quality. Abun- dance.
Hulanhik ...	—	—	1 B
Hulanmauraee	—	—	2 B
Hunukirille ...	—	—	4 B
Hury ...	—	—	2 B
Idde ...	—	—	3 B
Imbool ...	Stained Silk Cotton-wood	Bombax malabaricum	4 B
Indy ...	Small Date Palm	—	4 B
Itte ...	—	—	4 B
Ilookberiyē ...	—	—	3 C
Jamboele ...	Pumplemos or Shaddock	Citrus decumana	4 C
Jambo ...	Jambo or Malay Apple	Eugenia sp.	2 B
Jawenauren ...	King's Orange	—	4 C
Jayepaule ...	Purging Croton	Croton tiglium	4 B
Krabu ...	Clove	Caryophyllus aromaticus	4
Kok ...	Crane Tree	—	4
Keale ...	—	—	2 C
Kebelle ...	Oblique Agineia	—	2 B
Kedepotta ...	—	—	3 B
Kekuna ...	Molucca Nut	Aleurites moluccanum	4 A
Kende ...	—	—	3 A
Keppetiya ...	Aromatic Croton	—	3 A
Katekanle ...	—	—	2 B
Ketembelle ...	Rose-leaved Bramble	—	3 B
Kekelimesse ...	—	—	3 B
Keneheriya ...	Lobe-leaved Cestus	—	3 B
Kedemesse ...	—	—	3 C
Kintoloo ...	—	—	4 C
Keribeiriya ...	—	—	3 C
Kericoan ...	—	—	3 C
Kerihimideye... ...	—	—	3 C
Kerille ...	Corkwood	Sonneretia acida	4 B
Kiripolloo ...	—	—	2 C
Kiripelle ...	Indian Fig or Banyan	Ficus indica	3 C
Kiriwalla ...	—	—	3 B
Kittool ...	Nepera	Caryota urens	2 B
Kabari ...	Blotched Wood	—	3

Sinhalese. Name.	English Name.	Botanical Name.	Quality. Abun- dance.
Keyiya	... Screw Pine	...	2
Lamloe	... —	...	4 C
Lawaloo	... —	...	4 C
Liyan	... —	...	3 C
Liyangoo	... —	...	3 C
Looloo	... Smooth-leaved Cordia	...	3 C
Loonumidelle	... Common-leaved Tree	...	2 C
Lowy	... Lovey-lovey	...	4 C
Luhankende	... Three-leaved Fagara	...	4 C
Lunubinde	... —	...	3 C
Lunu wanene	... Sacred Grateena	...	4 C
Mabily	... —	...	1
Margosa	... —	... Melia azedarachta	3
Maapatkebelle	... —	...	2
Madetiye	... —	...	3
Madool	... Bog Tree	...	4
Madool Carende	... Feast Tree	... Dalbergia sp.	4
Mahadan	... Jar Plum Tree	Calyptranthes jambo- lana	2
Malabede	... —	...	4
Makalu	... —	...	1
Mabburute	... Flowered Satinwood	...	3
Malepete	... —	...	3
Malkeare	... —	...	2
Marada	... —	...	4
Marende	... —	...	4
Masan	... Blunt-leaved Tree	...	4
Malavere	... —	...	3
Mauran	... —	...	4
Mauoessan	... —	...	4
Madye	... —	...	4
Mediye	... —	...	3
Mee or Illipia	... Honey Tree	... Bassia longifolia	1
Meandel	... Delwood or Wild Breadfruit	... Artocarpus pubescens	1
Meiltavere	... —	...	3
Meanmeille	... —	...	1

Sinhalese Name.	English Name.	Botanical Name.	Quality. Abun- dant.
Meepook ...	—	...	3
Meeriye ...	—	...	3
Melli ...	—	...	3
Milille ...	—	... Vitex trifolia	1
Midelle ...	—	...	4
Mille ...	—	...	1
Moalbedde ...	—	...	2
Molebeya ...	—	...	3
Moodilla ...	—	...	4
Moonemal ...	—	... Minusops elengi	2
More ...	Eyeball	... Nephelium pulpilla- tum	2
Motemole ...	—	...	3
Moodomuranga ...	—	...	4
Myle ...	—	...	2
Mugume ...	—	...	3
Murute ...	—	... Lagerstroemia regina	2
Malu ...	Bag Tree	...	3
Naa ...	Iron Wood	... Mesua ferrea	1
Nan-nam ...	Stem-flowered Tree	...	4
Nangewally ...	—	...	4
Nanbingool ...	—	...	3
Nauwa ...	—	...	4
Nawehandy ...	—	...	4
Neke ...	—	...	4
Nelly ...	—	...	2
Nendoon ...	—	... Dalbergia lanceolaria	2
Nereloo ...	—	...	3
Neten ...	—	...	4
Nuge ...	Banyan	...	4
Nomede ...	—	...	3
Ooruhonde ...	—	...	3
Oouankende ...	—	...	3
Oatoroo ...	—	...	3
Ookberriye ...	—	...	3
Oamby ...	—	...	4
Oala ...	—	...	3

Sinhalese Name.	English Name.	Botanical Name.	Quality. Abun- dant.
Odidehy	... Common Lemon	...	3
Ooguresse	...	...	4
Ookoonu	...	...	3
Oorukanu	...	...	4
Oorukeena	... Wild Keena	...	3
Ote	...	...	4
Oul	...	...	3
Paloo	... Sweet-fruited Tree	...	2
Palol	...	...	4
Pamburu	...	...	3
Pando	...	...	4
Pandere	...	...	3
Pamedambe	...	...	3
Panukeren	...	...	4
Patan	...	...	3
Patechamere	...	...	3
Patengey	... Sappan	... <i>Cœsalpinia sappan</i>	1
Patkeale	...	...	3
Pattadel	... Common Dell	...	2
Pauberoo	...	...	3
Pauwatte	...	...	4
Payeroo	...	...	2
Pehimbiye	...	...	2
Petan	...	...	2
Peire	... Guava	... <i>Psidium</i> sp.	4
Peiretombele	...	...	3
Pelim	...	...	4
Penele	...	...	3
Penibaru	...	...	2
Penidodan	...	... <i>Citrus aurantium</i>	4
Pol	... Coconut	... <i>Cocos nucifera</i>	2
Polyabere	...	...	3
Poroadediya	...	...	2
Puwak	... Areka	... <i>Areca catechu</i>	3
Poroabedde	...	...	3
Poroamaureu	...	...	4
Poojate	... Sacrifice Tree	...	4

Sinhalese Name.	English Name.	Botanical Name.	Quality- Abun- dance.
Panawelle ...	—	...	4
Penile ...	—	...	4
Rambutam ...	Rambutam	... Nephlium lappaceum ..	3
Rameneidele ...	—	...	2
Ranewere ...	—	...	3
Ratbereliye ...	—	...	2
Ratedel ...	Red Keena	...	4
Ratekakeena ...	—	...	4
Ratkeale ...	—	...	2
Rategoreka ...	—	...	4
Ratecombo ...	Evergreen	...	3
Ratejambo ...	Roseapple	...	4
Ratesappoo ...	—	...	3
Ratelowoloo ...	—	...	3
Ratenelle ..	—	...	4
Ruek ...	—	...	4
Ruekattene ...	—	...	4
Ritigaha ...	Pole Tree	...	4
Sal ...	—	...	1
Samedera ...	—	...	3
Sapoo ...	—	...	1
Sapumiliile ...	—	...	3
Seirie ...	—	...	3
Sevelemediye...	—	...	4
Siyembela ..	Tamarind	... Tamarindus indicus ...	2
Soketel ...	Smooth-leaved Chocolate	—	4
Sooriye ...	Persian Wood or Tulip Tree	... Thespesia populnea ...	1
Sooriyemaura ...	—	... Mimosa	2
Sudoeanu ...	—	...	3
Sudoliyan ...	—	...	3
Sudokerew ...	—	...	3
Suvende ...	—	...	2
Samanele ...	—	...	4
Talgaha ...	Palmyra	... Borassus flabelliformis	1
Tale ...	Basin Tree	...	4
Talandere ...	—	...	2

Sinhalese Name.	English Name.	Botanical Name.	Quality- Abun- dance.
Tarrene ...	—	... —	... 3
Teakke ...	Teak	... <i>Tectona grandis</i>	... 4
Telembo ...	—	... <i>Bombax neplaphillum</i>	1
Telekehiriye ...	—	... —	... 3
Tembiliya ...	—	... —	... 3
Tibiry ...	Slime Apple	... <i>Diospyros embryop- teris</i>	... 3
Timbool ...	—	... —	... 4
Totile ...	—	... —	... 4
Veere ...	—	... —	... 1
Vereloo ...	Ceylon Olive	... <i>Eleocarpus serratus</i>	... 4
Velenge ...	—	... —	... 2
Velandere ...	—	... —	... 1
Wade ...	—	... —	... 3
Walboambo ...	—	... —	... 4
Waldombe ...	—	... —	... 3
Walgonne ...	—	... —	... 4
Waljambo ...	—	... —	... 4
Walla ...	—	... —	... 4
Walsappoo ...	—	... —	... 4
Walakeena ...	—	... —	... 3
Waneidelle ...	—	... —	... 2
Wanemee ...	—	... —	... 3
Wanepoloo ...	—	... —	... 3
Wanepatoo ...	—	... —	... 3
Wanesapoo ..	—	... —	... 3
Waran ...	—	... —	... 4
Wantemadit- chiye ...	—	... —	... 4
Weawarene ...	—	... —	... 2
Wellenge ...	—	... <i>Pterospermum suberi- folium</i>	... 2
Welcaha ...	—	... —	... 3
Welidambo ...	—	... —	... 3
Wielipenne ...	—	... —	... 3
Welipiyanna ...	—	... —	... 2
Werelle ...	—	... —	... 3

Sinhalese Name.	English Name.	Botanical Name.	Quality- Abun- dance.
Wilendewenne	— 2
Yakebaluwa ...	— 3
Yakimbool ...	— 4
Yakedde ...	— 3
Yakbedde ...	— 4
Yakberiya ...	— 5

SKETCHES IN NATURAL HISTORY:
DESCRIPTION OF TWO MINUTE NEW
FRESHWATER MOLUSKS OF THE GENUS
PLANORBIS AND *BITHINIA*.

BY EDGAR L. LAYARD, ESQ., C.M.E.S.

THE minute shells here described were first detected by myself accidentally: a mass of floating weed taken off the surface of a small tank or pond, about a mile and a half from Hambantota, had been placed in a basin to be examined, to obtain specimens of the next species, and in stirring the floating particles with the hand, a dead specimen of a new *Planorbis* was found adhering to it. Every atom of the weed now underwent a close scrutiny, and the search produced seven or eight other dead examples, but none living.

Recourse was again had to the pond, but though a large quantity of weed was collected, and many dead shells found, the habitat of the living creature remained still unknown to me. Later in the year (in the month of June) I was sent to this station, Point Pedro, and during my rambles through the many lanes of this populous village I examined one of the walled tanks which are so common throughout the district; here, to my delight, plentifully scattered along the edge of the water, were the bleached shells of the *Planorbis* and the *Bithinia* of the Hambantota tank.

Fortunately the drought of several months had reduced the water so considerably as to enable me to examine the decaying vegetable matter at the bottom, and attached to the underside of leaves and sticks were found the *Planorbis*, while in similar situations, but principally on stones, the

Bithinia were detected. Many specimens were procured and taken home, and other descriptions now given of their habits and form are taken from examples which are living, and have been under my close observation for several weeks.

Planorbis Tennentii.

The largest example found measures two-eighths of an inch across the widest place. Whorles three, transparent and colourless, showing the animal within ; when examined through the microscope the substance of the shell may be perceived to be laid on in successive layers. When the molusk is alive it gives a spotted appearance to the shell ; mouth inferior.

Habitat, dead leaves upon tanks and pieces of wood, on which they feed.

The molusk is endowed with the power of swimming along the surface of the water in the manner of the *Lymna*; occasionally they reach the surface simply by detaching themselves from the bottom, when they rise by the air they have carried down with them on some previous occasion ; but when the air is all exhausted by a long continuance below the surface, they crawl up some aquatic plant till the air is reached ; the foot is then thrown out on a plane with the water, the long tentacles which are situated far back upon the body are moved rapidly about as if seeking for some support, the hold of the plant is gradually loosed and brought to bear on the surface, and with two or three sudden jerks the little voyager is fairly afloat ; its method of progression is by suction ; the whole foot is on a level with the surface of the water, which offers sufficient resistance for it to propel itself along by alternate contraction and expansion, the edges of the foot being frequently raised above the surface.

Unlike the common *Planorbis Indicus*, which carries its shell erect, *Planorbis Tennentii* crawls with its shell almost

flat, and its mouth is so situated that in this position it can be drawn down close to the object along which the inmate is crawling. Six minute eggs, strung together and fastened to the inner edge of the whorle near the entrance, have been detected by the aid of a powerful glass.

In company with the preceding was discovered the following, which I have named *Bithinia minima*, from its diminutive size :--

Bithinia Minima.

The largest specimen found measures three-eighths of an inch in length, one-eighth in breadth ; whorles three, mouth oval, plain, close with an operculum ; colour horny, transparent, the animal when alive imparting to the shell a reticulated green appearance.

Habitat, in company with the preceding, but giving preference to stones and rocks.

These minute shells are also endowed with the power of crawling along the surface of water ; they start in a similar manner, and progress by alternate expansion and contraction. So great is the hold they retain of the surface, that I have seen one with the whole of the foot even and level with the surface, apparently immovable, and yet the heavy portion of the molusk twisting and twirling round with great velocity to dislodge a fellow swimmer who had made use of it as a resting place. The mouth of the molusk is a small slit on the underside, through which is continually passing and repassing a small stream of water, much aiding it in its movements whilst swimming, which are brisk enough.

These minute molusks appear to be infested by a singular parasitic enemy, in the shape of a small active blood-red worm, which passes up into the shell and devours the inmate ; in a similar manner the glow-worm feasts on the *Cyclostoma* of the Kandyan country.

AN OUTLINE OF THE TAMIL SYSTEM OF
NATURAL HISTORY.

BY SIMON CASIE CHITTY, ESQ., C.M.R.A.S.

(Read December 1, 1849.)

LONG before Natural History as a science had engaged attention in Europe, and Aristotle had written his *Historia Animalium*, the Tamils appear to have cultivated it to a certain extent and reduced it to a system, by naming and classing all objects in the animal, vegetable, and mineral kingdoms, as far as they were known, into different genera or families, according to the mutual affinities which are indicated by their external characters. There are, however, no works now extant amongst the Tamils which professedly treat of Natural History, but we are assured by traditions that Akattiyar, who has not undeservedly been called the Hippocrates of India, had composed numerous treatises upon it, which by the lapse of ages have perished or been forgotten. My materials for the present outline of their system of Natural History have therefore been principally drawn from the different *Nikandū* or dictionaries, as also from the incidental notices which occur in other works. The Tamil system of Natural History embraces a two-fold classification of animated nature,—one mythological and the other natural.

According to the mythological classification, the “Gods” form a part of the zoological circle. All organised bodies being distinguished under the two heads of movable (*charam*) and fixed (*acharam*) are again distributed into seven different genera, the names of which, and the number

of species comprised by each, are stated in the twelfth chapter of the *Súlāmani Nikāṇḍu*.

According to the natural classification, which it is curious to observe approximates in some points to that of Linnæus, all things that have life (*sivarāchi*) are divided into four classes (*tóṭṭam*), and these are again sub-divided into as many genera (*sāti*) and species (*pétam*) as they are known to comprehend.

The first class, called *Saráyucham*, includes such as are viviparous, as man, quadrupeds, the bat, the whale, the porpoise, the dolphin, the shark, the ray, &c.

The second class, called *Aṇḍacham*, comprehends such as are oviparous, as birds, fishes, the snake, the frog, the tortoise, the crocodile, the iguana, the lizard, the chameleon, &c.

The third class, called *Suvétacham*, embraces such as are engendered by heat and damp, as worms, maggots, gnats, fleas, &c.

The fourth class, called *Uṭpicham*, comprises such as are germiniparous, as trees and herbs.

It is a common saying among the Tamils that "from the ant to the elephant there are 84,000,000 species of living creatures," but this is altogether fanciful, and deserves no attention. The *Nikāṇḍu* which I have consulted scarcely exhibit the names of more than 100 species in the animal and 500 in the vegetable kingdom. It should, however, be observed that these works do not mention all the animals and vegetables known to the Tamils; and for the greater part confine themselves only to such as are noticed by the ancient poets.

The quadrupeds are distinguished as follows :—

1. *Kuriñchinila-vilaṅku*, or those that live in the hilly country, such as the lion, the tiger, the elephant, the bear, &c.

2. *Mullainila-vilaṅku*, or those that live in woodland country, such as the deer, the hare, &c.

3. *Marutanila-vilaṅku*, or those that live in corn-fields, such as the buffalo, the water-dog, &c.

4. *Pálainila-vilaṅku*, or those that live in sandy deserts, such as the wild dog.

5. *Kóḍilvāl-vilaṅku*, or those that live upon the branches of trees, such as the monkey, the squirrel, &c.

The birds are distinguished as follows :—

1. *Kuriñchinilap paravai*, or those belonging to the hilly country, such as the parrot, the peacock, &c.

2. *Mullainilap paravai*, or those found in the woodland country, such as the wild fowl.

3. *Marutanilap paravai*, or those that frequent corn-fields, such as the heron, the andil, the pelican, the swan, the water-fowl, the duck, &c.

4. *Pálainilap paravai*, or those peculiar to sandy deserts, such as the dove, the kite, the eagle, &c.

5. *Neytlnilap paravai*, or those that are located near the sea, such as the sea-eagle.

The fishes are simply divided into *Kaḍal-miṇ*, or the sea-fish, and *A'ttu-miṇ*, or the river-fish.

With regard to the vegetable kingdom, the grasses, the esculent greens, the creepers, the edible roots, and the mosses being respectively arranged under the the heads of *Pul*, *Kirai*, *Koḍi*, *Kiḷaṅku*, and *Pási*; the trees are distinguished into *A'ṇ-maram*, or the male, *Peṇ-maram*, or the female, and *Ali-maram* or the hermaphrodite; these distinctions are not, however, as in the Linnæan system, founded upon the differences in the structure of the flowers, but upon the differences in the texture of the stems: thus, trees the inside of which is harder than the outside, as the ebony, fall under the class of male trees; those the outside of which is harder than the inside, as the palmirah, fall under the class of

females ; and trees which are spongy and have a milky sap, as the *Erythrina Indica*, fall under the class of hermaphrodites.

Independent of the foregoing distinctions, plants in general are sub-divided into four kinds, viz :—

1. *Oḍati*, or those which bear fruit once and then die.
2. *Avakési*, or those bearing no fruit.
3. *Vaṇapati*, or those bearing fruit (apparently) without blossoms.
4. *Vaṇapátavam*, or those bearing fruits from blossoms.

The following is a list of the animals in the *Saráyucham* class, as known to the Tamils, and arranged according to their genera. Should it meet with the approval of the Society, I shall in my next communication follow it up with lists of the objects in the other classes.

LIST OF ANIMALS IN THE SARAYUJA CLASS.

I.—Genus, *Puli*.

1. *Vayappuli* or *Siṅkam*, the lion.
2. *Vēṅkaippuli*, the royal lion.
3. *Karumpuli*, the black tiger.
4. *Sempuli*, the red tiger.
5. *Kalutaippuli*, hyæna.
6. *Siṛutteippuli*, the leopard.
7. *Koḍippuli*, the tiger cat.

II.—Genus, *Púṇai*.

1. *Púṇai*, the domestic cat.
2. *Káḍduppúṇai*, the wild cat.
3. *Pulukuppúṇai*, the civet cat.

III.—Genus, *Yáli*.

1. *Yáli* or *Yánaiyáli*.

The name of this animal occurs in the different *Nikaṇḍus*, and is described as a lion with the proboscis of an elephant,

but it is supposed to have been either fabulous or one of the extinct species. Some think it was possibly the mammoth.

IV.—Genus, *Náy*.

1. *Náy*, the common dog.
2. *Chunaṅkunáy*, the long-eared dog.
3. *Koḍináy*, the greyhound.
4. *Chadaináy*, the woolly dog.
5. *O'náy*, the wolf.
6. *Chennáy*, the wild dog.
7. *Maranáy*, the polecat.
8. *Nírnáy*, the otter.

V.—Genus, *Nari*.

1. *Nari*, the jackal.
2. *Kuḷinari*, the fox.

VI.—Genus, *Karaḍi*.

1. *Karaḍi*, the bear.

VII.—Genus, *Yáṇai*.

1. *Yáṇai*, the elephant.

VIII.—Genus, *Káṇḍámirukam*.

1. *Káṇḍámirukam*, the rhinoceros.

IX.—Genus, *Paṇṇi*.

1. *U'rppaṇṇi*, the domestic hog.
2. *Káḍḍuppaṇṇi*, the wild hog.
3. *Muḍpaṇṇi*, the porcupine.
4. *Kaḍaṭpaṇṇi*, the porpoise.

X.—Genus, *Kutirai*.

1. *Kutirai*, the horse.
2. *Vanakkutirai*, the wild horse.

XI.—Genus, *Kalutai*.

1. *Kalutai*, the ass.
2. *Kóvérukalutai*, the mule.

XII.—Genus, *Oḍḍakam*.

1. *Oḍḍakam*, the camel.

XIII.—Genus, *A'* or *Máḍu*.

1. *A'* or *Pasumáḍu*, the cow.
2. *Kára* or *Erumaimáḍu*, the buffalo.

XIV.—Genus, *A'ḍu*.

1. *Veláḍu*, the long-legged goat.
2. *Pallaiáḍu*, the dwarf goat.
3. *Chemmaríáḍu*, the sheep.
4. *Kurumpáḍu*, the fleecy sheep.
5. *Varaiáḍu*, the mountain sheep.

XV.—Genus, *Máṇ*.

1. *Pullimáṇ*, the spotted deer.
 2. *Velimáṇ*, the antelope.
 3. *Puluḍḍaimáṇ*, the hog deer.
 4. *Kastúrimáṇ*, the musk deer.
 5. *Maraimáṇ* or *Marui*, the elk.
- Kavarimáṇ*, the deer of whose tail the chouri is made.

XVI.—Genus, *Muyal*.

1. *Varimuyal*, the hare.
2. *Kulimuyal*, the rabbit.
3. *Charukumuyal* or *Ukkuláṇ*, the miminna.

XVII.—Genus, *Kuraṅku*.

1. *Chen̄kuraṅku*, the red monkey.
2. *Karun̄kuraṅku*, the black monkey.

XVIII.—Genus, *Téyváṅku*.

1. *Namatéyváṅku*, the brown lemur.
2. *Karuntéyváṅku*, the black lemur.

XIX.—Genus, *Aḷun̄ku*.

1. *Aḷun̄ku*, the armadillo.

XX.—Genus, *Kiri*.

1. *Kiri*, the common ichneumon.
2. *Chen̄kiri*, the red-faced ichneumon.

XXI.—Genus, *Aṇil*.

1. *Variaṇil*, the common squirrel.
2. *Maravaṇil*, the dandulena.

XXII.—Genus, *Vauvāl*.

1. *Mūttiravauvāl*, the common bat.
2. *Kaṇivauvāl*, the large bat.

XXIII.—Genus, *Eli*.

1. *Eli*, the common rat.
2. *Irappeli*, the house rat.
3. *Kāddeli*, the wild rat.
4. *Kāreli*, the black rat.
5. *Velleli*, the white rat.
6. *Suṇḍeli*, the mouse.
7. *Mulleli*, the hedge rat.
8. *Akalāṇ*, the mole.
9. *Peruchchālī*, the bandicoot.
10. *Mūñchūru*, the musk rat.

XXIV.—Genus, *Churá*.

- | | |
|--------------------------|-------------------------|
| 1. <i>O'ṇkitichurá.</i> | 5. <i>Maḍḍichchurá.</i> |
| 2. <i>Kuraṇkaṇchurá.</i> | 6. <i>Valuvanchurá.</i> |
| 3. <i>Kompaṇchurá.</i> | 7. <i>Véláchchurá.</i> |
| 4. <i>Pátchurá.</i> | |

Different kinds of sharks.

XXV.—Genus, *Tirukkai*.

- | | |
|-----------------------------|-------------------------------|
| 1. <i>A'dát tirukkai.</i> | 6. <i>Chen tirukkai.</i> |
| 2. <i>Oḍḍait tirukkai.</i> | 7. <i>Pañchádít tirukkai.</i> |
| 3. <i>Karun tirukkai.</i> | 8. <i>Pullit tirukkai.</i> |
| 4. <i>Kuruvit tirukkai.</i> | 9. <i>Maṇaṭ tirukkai.</i> |
| 5. <i>Kóḍḍát tirukkai.</i> | |

Different kinds of rays.

PRISON DISCIPLINE IN CEYLON.

BY A. G. GREEN, ESQ.

(Read December 1, 1849.)

ALTHOUGH this paper only relates to one prison,—the Welikada Jail,—yet inasmuch as it treats of the sole place where any systematic mode of punishment and training has been carried out, it may truly be said to combine the whole Prison Discipline of the Island.

Previous to the erection of this prison, the want of a regular and systematic mode of treating criminals had been long felt and confessed on all sides—the imprisonment and labour in those days were of a most unsatisfactory nature ; nothing like security of the prisoners, or real labour at their hands was ever attained. They appear to have preferred an imprisonment which offered them better lodging, food, and clothing than they could attain in their usual mode of life, with quite as little labour, and from which they could escape, whenever it suited them so to do.

This state of things had not escaped the attention of Government, and accordingly proper representations having been made to the home authorities by the then Governor, Mr. Stewart Mackenzie, it was determined to erect a suitable prison which should be placed under new and efficient management.

In 1841, Sir Colin Campbell being then Governor, the present building was commenced by the Civil Engineer, with the artificers of his department, assisted by a number of the prisoners from the old jail. In 1843, a sufficient extent of accommodation was completed to enable the authorities to place eighty prisoners within its walls, and who

continued to assist in carrying on the remainder of the work. Within a year from this time the convicts had become such good artificers, that the Civil Engineer was enabled to dispense with hired labour, and rely upon them for the completion of the buildings.

This proved not only a great saving, but it also prevented hurtful communications from being kept up between the prisoners and their friends outside, by means of the usual hired labourers.

Not long after this it was determined to bring from Kandy about forty of the most troublesome prisoners there, in order that they might be turned to better account and reap the advantage of the new system. Amongst these convicts was the noted Puran Appu, since shot at Kandy during the late rebellion.

To keep the prisoners at continuous labour is a difficult task ; on the one hand, the natural repugnance to toil inherent in the native of the tropics has to be contended with ; on the other, the physical powers of overseers and others in charge of working parties are liable to be weakened, and their interest to flag in the same proportion as those of the workmen, in long continued monotonous tasks ; hence will naturally follow among men deficient in energy and activity, a desire to get through the day as easily as possible, and their ideas of usefulness in their vocation are bounded by the simple effort to avoid censure or dismissal ; from these and similar causes arises the necessity for strict and unceasing vigilance on the part of the prison government.

A great obstacle to the profitable employment of prisoners consists in their unwillingness to afford by their labour any benefit to Government, whom they consider as their enemy, in depriving them of their liberty. To such an extent was this feeling carried among them, that on the introduction of the system of trades instruction into the prison, only a few were found willing to avail themselves of

this advantage ; and the benefits which have subsequently accrued to the establishment from this course would never have been realised had not Government, on the urgent representation of the Civil Engineer, sanctioned the payment of a small allowance to each prisoner who should attain a certain degree of proficiency in his trade. This allowance was fixed at three farthings per diem to those actively and diligently employed *learning* a trade, and six farthings per diem to the expert, or first class workman ; any act of misconduct or breach of jail rules to entail the forfeiture of the whole. This allowance, however, only applies to labour performed under estimates sanctioned by Government.

It is a curious fact connected with the history of Prison Discipline in Ceylon that the admission of a tradesman to the jail is of very rare occurrence ; out of a hundred prisoners committed, there will not be more *than one* who has been brought up to any trade. It would seem therefore that when the natives are able to earn the ordinary wages of a mechanic they rarely resort to dishonesty.

It will be obvious that in proportion as the savings of the tradesman accumulate, so will his endeavours to prevent their forfeiture increase, hence the prison government possesses a powerful incentive to good behaviour on the part of the workmen, and cases of misconduct amongst them are of very rare occurrence.

The mode of selecting prisoners for instruction in trades is as follows:—On his admission the prisoner is first sent to work at cooly labour in the road gangs or at the cabook quarries, and there kept under a course of probation for some time, when, if his overseer is able to make a favourable report of his conduct and diligence at work, he is placed as an apprentice in one of the workshops ; a choice of trades is generally accorded to him if practicable, and the usual results of promotion to second class work, and after a time from second to first class, in most cases follow.

The tradesmen prisoners are generally well behaved. The few cases of misconduct which occur are generally punished with removal for a day or two to the outdoor gangs, which seldom fails of the desired effect. Serious or oft repeated offences are visited with final dismissal from the trades department, and consequent forfeiture of all earnings.

The duty of providing employment for the prisoners is entrusted chiefly to that department with the twofold object of completing the erection of the prison and providing for the employment of the prisoners.

Masons are chiefly employed in the erection of prison buildings, workshops, and on Government buildings within a reasonable distance of the prison.

Carpenters are similarly employed, and also in the execution of work for the Civil Engineer's department when available.

Smiths are also employed on the iron work required for the prison, and on making chains and fetters for criminals, iron work for bridges, and other public works.

Sawyers perform all works required for the public in and about Colombo, and for the cooperage in the department of the Commissariat.

Stone-cutters, besides dressing all the granite used in the erection of the prison, are constantly employed in cutting stone for bridges and other public works.

A shoemakers' shop has been opened under the superintendence of an European overseer: it has been in operation about six months, and although all those now working at it were previously ignorant of the use of a single tool, the manufacture is so far satisfactory that the prison work is beginning to be much sought after; upwards of five hundred pairs of shoes of all sizes have been made and disposed of. A cooperage is just being established which promises to be useful hereafter.

The construction of wire suspension bridges is also being attempted, which, if successful, will prove a profitable and useful branch of employment.

All painters' and glaziers' work required in the prison is performed by the prisoners themselves.

Coir-matting of excellent quality useful for doors, verandahs, and barbacles is manufactured in the prison.

All cabook stones required for prison buildings are quarried and carted by the prisoners.

All cooking, washing, and attendance on the sick is done by the prisoners.

When practicable, the trades instructors are selected from among the prisoners themselves; this is now the case with the carpenters, stone-cutters, and sawyers: the two latter learned the business in the prison.

The following statement shows the number employed at different trades, and the value of labour performed by each class.

	Masons.		Carpenters.		Smiths.		Sawyers.		Stone-cutters.		Shoemakers.		
	No.	Value per day.	No.	Value.	No.	Value.	No.	Value.	No.	Value.	No.	Value.	TOTAL.
	s. d.		s. d.		s. d.		s. d.		s. d.		s. d.		
1st Class.	6	1 0	2	1 0	5	1 0	12	1 0	3	1 0	3	0 8	31
2nd Class.	9	0 9	11	0 7½	4	0 6	12	0 9	10	0 9	5	0 6	51
Apprentices	8	0 7½	6	0 4½	4	0 4½	2	0 6	9	0 6	12	0 3½	41
Total ...	23		19		13		26		22		20		123

The hours of labour are the same as those in the public departments, viz.:—From 6 to 11 A.M.; half an hour for breakfast; from 11.30 A.M. to 3.30 P.M.

Instruction, Religious and Scholastic.

Table of religious persuasion of the inmates of the Prison.

Protestants	...	...	...	...	30
Roman Catholics	...	...	...	...	40
Muhammadans	...	...	...	...	33
Buddhists	...	...	...	...	158
Gentoos	...	...	...	...	39
Total ...					300

The different religious services conducted in the prison are : for the Tamil prisoners instruction by a duly qualified native Catechist, followed by Scripture reading, the church prayers, and a short address.

On the dismissal of the Tamil congregation, numbering usually from forty to fifty, the Sindhalese service commences, conducted by a clergyman of the Church of England ; the same course of instruction is pursued as with the Tamils, and in the catechetical part a knowledge of Scriptural history is sometimes shown to an extent which would surprise many Europeans. The practice of asking questions on any part of the minister's lessons is permitted and encouraged. The Sindhalese congregation numbers upwards of one hundred. The prisoners are visited generally once during the week days, and addressed on religious subjects ; those in hospital also receive attention.

Schools have been in operation in the establishment since its opening, but very few prisoners were found willing to take advantage of them ; their ideas are, that Government must reap some benefit or advantage by their being instructed, or they would not incur such expense for masters, books, &c. ; out of one hundred and seventy prisoners only seventeen for a long time attended school, and the system was about to be abandoned as hopeless. But on the suggestion of the Commission, the following regulation was sanctioned by the Governor, viz., "That every hour "attentively passed in school and Divine services should "be deducted from the sentences of all prisoners under

“confinement for more than three months.” The effects of this regulation were speedily apparent; the number of scholars rose from seventeen to one hundred and fifty; instead of *one* teacher being sufficient for the wants of the schools *three* were found requisite, and in addition to this number it became necessary to appoint some of the more advanced pupils to be monitors over the junior classes.

The schools have continued in this satisfactory state for upwards of four years. The scholars may be thus arranged:—

	1st Class.	2nd Class.	3rd Class.	4th Class.	Total.
Tamil School, one Master ...	13	9	35	0	57
Sinhalese School, two Masters ...	48	20	18	17	103
Total ...	61	29	53	17	160

The instruction given in the schools is chiefly confined to reading, and writing on slates; a few learn a little cyphering, some few have attempted to learn the English language; in this, however, very little progress is made, nor are the prisoners encouraged in the attempt; only one man has been able hitherto to make proficiency in English, and he is “Chandrefoly,” the leader of the revolutionary movement in 1842, whose sentence of death for high treason was commuted to fourteen years’ hard labour in chains, and who since his imprisonment has evinced intelligence and capacity far beyond the generality of his countrymen; *he* has learned to read and speak English since he came to prison, has read the New Testament through, has learned the trade of carpenter, and by his general good conduct has won the goodwill of all with whom he is concerned.

Suitable books are provided for all who can read; a small library containing some useful works in English is provided for European and Burgher prisoners.

The numbers which have passed through the school and been taught to read well, and in about half the cases to write a little, are 95 Singhalese and 46 Tamils.

Tables having reference to the state of education generally are here subjoined.

Table No. 1 shows the number who could read, or read and write, on their admission to prison, of the present inmates of the jail :—

Could read	...	...	...	16
Could read and write	...	...	...	63
Neither	...	...	...	221
Total ...				300

Table No. 2 shows the number who could read and write in every hundred prisoners committed during the last six years :—

Out of every 100 Prisoners committed in the year.	Could Read and Write.	Out of every 100 Prisoners committed in the year.	Could Read and Write.
1844 ...	26	1847 ...	26
1845 ...	31	1848 ...	28
1846 ...	22	1849 ...	34

Table No. 3 shows the state of education in different districts :—

(Prisoners admitted from the several outstations and Colombo.)

Place.	Number.	Could Read and Write.
Jaffna	84	40
Galle	62	19
Colombo	100	30
Chilaw	58	14
Kandy	100	21

The hours for meals are 6 A.M., 10 A.M., and 5 P.M. The former consists only of bread, biscuits, or hoppers, and coffee ; the two latter each of one-third quart of rice and a curry of either dried fish or vegetables. The food is cooked by a portion of the prisoners. Twice a week fresh fish is

substituted for salted. This scale relates only to the native prisoners ; for Burghers and Europeans beef and bread are substituted for a part of the curry. The cost per diem in the former case is $3\frac{1}{8}d.$, for the latter $6\frac{1}{4}d.$

For the hospital, of course, there are various scales employed, according to the orders of the medical attendant.

The clothing for the native prisoners is of the simplest kind, consisting only of two slips of blue and white cloth, the cost of which is $9d.$, and they are expected to last fully three months. European and Burgher prisoners are allowed a straw hat, a jacket and trousers of blue calico, a shirt, and a pair of shoes, the whole costing $12s.$, or $\pounds 2. 8s.$ per annum.

The bedding for natives is simple—a common straw mat and cumblie ; and for Europeans and Burghers a mattress, blanket, and pillow.

The prison hospital is under the immediate care of a medical sub-assistant, who is allowed two prisoners to act as orderlies under him. He visits the whole of the prisoners weekly, and the inmates of the hospital daily. This officer has great need of the utmost vigilance and discretion in reference to the many reported cases of sickness amongst the inmates, who, quite aware as they are of the exceptions from labour of all the hospital patients, constantly resort to every description of feigned illness to gain admission to the sick wards. The obstinacy and endurance of actual suffering on the part of some natives who prefer anything to labour, are almost past belief.

In the same manner, prisoners sometimes feign insanity to a most remarkable degree—refusing food and playing the most fantastic tricks to give probability to their case. Instances are on record in which prisoners have starved themselves to death, or brought on fatal maladies from their obstinate determination not to give way.

The punishments resorted to for offences committed within the prison are flogging, solitary confinement, and

diminished allowance of food. The former is much dreaded by the prisoners, and the remembrance of it seems never to leave them. Solitary confinement is rarely resorted to for longer than three or four days, as it has a prejudicial effect on their health.

The practice of cutting off the hair of convicts, though so very general in other countries, has not been adopted here, which is to be regretted, as it is believed that the fear of losing their most cherished ornament would operate very powerfully upon them.

The following table shows the terms for which the three hundred present inmates of the prison have been sentenced :—

Transportation.			
Life.	Ten years.	Seven years.	Five years.
1	10	6	2

Imprisonment with hard labour.

	Years.										
Life.	14.	10.	7.	5.	4.	3.	2.	1½.	1.	6.*	
	1 ...	3 ...	4 ...	3 ...	44 ...	24 ...	111 ...	30 ...	8 ...	16 ...	37

* Months and under.

Escapes have been numerous, but not more so than might be expected when the exposed situation of the jail, the density of the surrounding jungle, and the extent of grounds over which the outdoor gangs have been employed are taken into consideration.

The number of escapes during the last six years have been as follows:—

Year.		Escaped.		Re-taken.
1844	...	9	...	9
1845	...	3	...	2
1846	...	2	...	0
1847	...	5	...	5
1848	...	10	...	8
1849 (9 months)	...	3	...	0
		<hr/>		<hr/>
Total	...	32		24

Escapes have been chiefly made from the parties at work at a distance from the prison, and are generally effected by men who were not liable to be suspected of such an intention, although there can be no rule given for placing confidence on any prisoner as regards his not escaping ; for men have escaped from the prison whose periods of imprisonment remaining were found to have been only fourteen days, thirty-six days, three months, and forty-five days respectively.

Of the general character of the prisoners the following Table of Offences will give an idea :—

Convicted of	No.	Convicted of	No.
Murder	... 3	Rape	... 3
Manslaughter	... 12	Poisoning	... 1
High treason	... 2	Forgery	... 3
Violent assault	... 15	Uttering forged in-	
Assault	... 13	strument	... 7
Assault and robbery	... 31	Arson	... 1
Burglary	... 15	Pejury	... 3
Burglary and robbery	... 26	Maliciously killing	
Highway robbery	... 20	cattle	... 2
Cattle stealing	... 35	Breach of local Or-	
Robbery	... 22	dinances	... 6
Having stolen property	19		
Theft	... 16	Total	... 300

It will be seen from the following table that the prisoners are chiefly young men, and the prison books show that the weighty offences are committed by men advanced in years, to a certain extent :—

Of 50 years of age and upwards	...	11
45 do. do.	...	13
40 do. do.	...	11
35 do. do.	...	24
30 do. do.	...	60
25 do. do.	...	111
20 do. do.	...	63
18 do. do.	...	7

Total ... 300

In calculating the progress of crime in the Island it should be borne in mind the great advances the population has made in civilisation during the last five years. It is an admitted fact, that as new tastes are acquired and fresh comforts and appliances are ushered into society by the advances of civilisation, so will a certain class of offences against the laws increase: new wants are created, new desires spring up. Better clothing, larger houses, and increased conveniences are all aimed at as the inhabitants become acquainted with the habits and usages of their more civilised neighbours. What at first were deemed luxuries gradually assume the form of necessities, and the demands for the gratification of these new cravings become impervious and irresistible, and either form effectual spurs to industry and enterprise, or where these qualities are not called into action, lead to acts of dishonesty, over-reaching, swindling, and the like, and in this way we may account for an increase in "offences against property."

The tables furnished below will show that this class of offences (against property) greatly predominates, and even in the few "offences against the person" enumerated, there has been in the majority of cases a remote bearing on the subject of "property"; as, for instance, in cases of murder and manslaughter, it will generally be found that the victim has in some way stood between the offender and the possession of property in the shape of land, money, jewels, &c., which the latter was bent on obtaining.

One of the tables exhibits a remarkable difference between the five principal districts of the Island as regards the prevalence of offences against the person. Thus it would seem that the offences of prisoners in the Colombo district have been principally against property alone, only fourteen per cent. having been convicted of offences against the person. This may in a greater measure be attributable to the greater degree of temptation thrown in the way of domestic

servants and others employed in the houses, stores, and shops of the merchants, traders, and others about Colombo, while in the Jaffna and Chilaw districts, where the inhabitants are scattered over a greater extent of country, and where European tastes and habits have not obtained such a hold upon the minds of the people, property is more secure ; but quarrels, assaults, and even murder, are but too common.

Years.			Crimes against Property.	Crimes against Person.	Com- bined.	Against Local Ordi- nances.	Total.
1844	...	...	92	40	12	34	182
1845	...	...	90	38	7	28	163
1846	...	...	129	40	11	66	246
1847	...	...	199	104	54	94	451
1848	...	...	151	71	29	83	334
To September 30, 1849			150	23	25	21	219
Grand Total			818	320	138	326	1,529

Table of crime as prevailing in different districts :—

One hundred Prisoners from				Convicted of Offences against		Com- bined.	Total.
				Property.	Person.		
Kandy	...	...	...	67	22	14	100
Colombo	...	...	...	74	14	12	100
Chilaw and Jaffna	...	...	...	38	27	35	100

To those who watch the progress of the native mind, and the effects of contact with European usages, the foregoing details will, I trust, be found interesting, as the narrative of the introduction of prison discipline into this Colony. That much yet remains to be done there is no doubt: the jail as a Government institution may be said to be only in its infancy, and who can say what will yet be effected ?

In future years, as opportunities offer, it would be well to watch the after-career of those released prisoners who have

been taught trades within the walls of Wēlikāḍa; but at present this is not possible, and we can only hope and believe that the knowledge they have thus acquired is turned to good and profitable account, rendering them at once honest and useful members of society.

CATALOGUE OF BOOKS IN THE TAMIL
LANGUAGE, WITH NAMES OF THE AUTHORS,
THE SUBJECTS, AND DATES, AS FAR AS
THEY CAN BE ASCERTAINED.

BY SIMON CASIE CHITTY, ESQ., C.M.R.A.S.

(Read December 1, 1849.)

SECTION III.

THEOLOGY AND METAPHYSICAL PHILOSOPHY.

THE following fourteen treatises are collectively called *Saivachittánta Núl*, and are considered to be the most authorised expositions of the theological position of the Vedas. They appear to have been written by different authors, and at different times, but none of them date earlier than the era of Mánikkavásakar, the great champion of the religion :—

1. *Tiruvuntiyár* : by Mánikkavásakar.
2. *Tirukkalittuppadiyár*.
3. *Sivañánapótam*.
4. *Sivañáñachittiyár*.
5. *Irupávirupahtu*.
6. *Unmaivilakkam*.
7. *Sivappipirakásam* : by Sivappipirakása Suwámi.
8. *Tiruvavarudpayan* : by Umápati Sivácháriyar.
9. *Viñávenpá*.
10. *Póttippahróдай*.
11. *Kodikavi*.
12. *Neñchavidutútu*.
13. *Unmainerivilakkam*.
14. *San̄katpanirákaranam*.

The following treatises illustrate the doctrines peculiar to the worshippers of Vishṇu :—

15. *Arisamaya-típam*.
16. *Tiruváymoli* : by the A'lwárs.
17. *Tirumoli* : by the Alwárs.
18. *Pakavatkítai*, translated from the Sanskrit.
19. *Pañcharattiram*, translated from the Sanskrit.
20. *Vaikánasaṇ*, translated from the Sanskrit.
21. *Irusamaya-vilakkam*.

The following treatises explain the doctrines of the six different philosophical schools of the Hindús, which were respectively founded by the Sages Kapilam, Patañchali, Kaṇátar, Viyásar, Jaimiṇi, and Paḍḍáchári :—

22. *Avirótavuntiyár* : by Santaliṅka Suwámi.
23. *Oḷiviloḍukkam*.
24. *Vayirákkiyatípam* : by Santaliṅka Suwámi.
25. *Vayirákkiyachatakam* : by Santaliṅka Suwámi.
26. *Tévikúlóttaram*.
27. *Sivatarumóttaram*.
28. *Kaivallíyanavanítam*.
29. *Sachchitánantavilakkam* : by Vélaiyánanta Suwámi.
30. *Sittántachikámaṇi*.
31. *Sittántatípikai*.
32. *Sivapókacháram*.
33. *Sasivarnapótam*.
34. *Sivañānatípam*.
35. *Sivānupútilakkam*.
36. *Nátántavilakkam* : by Saṅkara Sivácháriyar.
37. *Nátántacháram* : by Saṅkara Sivácháriyar.
38. *A'ñantattiradḍu*.
39. *A'ñantakkalippu*.
40. *Vétántachúdāmaṇi*.
41. *Arivuvilakkam*.
42. *Meyññānavilakkam*.

43. *Peruntirad̐du.*
44. *Kuruntirad̐du.*
45. *T̐rum̐lamantiram.*
46. *Sivanerippirak̐sam.*
47. *Aññavataipparani.*
48. *Mókavataipparani.*
49. *V̐dduneriyunmai.*
50. *Adukkunilaippótam.*
51. *Ariv̐nantachittiyár.*
52. *Chorúp̐nantachittiyár.*
53. *Siv̐nantamálai.*
54. *Tirun̐vukkaraivar.*

55. *Máyápiralápm.*

56. *Pirapul̐ṅkal̐lai*, translated from the Sanskrit by
Sivappirak̐sa Suw̐mi, 1652 A.D.

57. *Tattuv̐rattin̐akaram.*

58. *Tattuv̐mirtam.*

59. *N̐ṇman̐imálai* : by Tattuv̐ráyar.

60. *Samayach̐aram.*

61. *Sitt̐ántakaraṇam.*

62. *Arud̐pirak̐sam.*

63. *Kalimad̐dal.*

64. *Meymmoli.*

66. *Tuttuvacharitari.*

67. *Vir̐akamam.*

68. *A'̐nantapótam.*

69. *Aṇupavach̐aram.*

70. *Sorupach̐aram.*

71. *Sauntariyalakari.*

72. *Pirapótachantirótayam*, translated from the
Sanskrit.

73. *Sat̐pótachantirótayam*, translated from the
Sanskrit.

74. *Upan̐datam*, translated from the Sanskrit.

75. *Amirtach̐aram.*

76. *Avirótapótam*.

77. *Tirumantiram*.

78. *Ñāṇaváshiddam*.

79. *Ñāṇasitti*.

80. *Paripúraṇasitti*.

81. *Tirukkaḍaipattu*.

82. *Paramártatarisaṇam*.

83. *Saivasamayaneṛi*.

84. *Anupútinilaiyam*.

85. *Uṇmainilaiyam*.

86. *Ñāṇasiriyāṇ*.

87. *Ñāṇakural*: by Auvaiyár, the celebrated female philosopher, who flourished in the ninth century of the Christian era.

88. *Ñāṇa-veddiyaṇ*: by Tiruvalluvar, the brother of Auvaiyár and the author of the “Kural,” which obtained for him a seat on the bench of the Tamil poets in the University of Madura.

89. *Ñāṇakkummi*.

90. *Ñāṇamatiyullāṇ*.

The following works treat of the illusory nature of all mundane existency, defend ascetic devoting, and inveigh against the dogmas of the A’kamas Puráṇas:—

91. *Siva-vákkiam*: by Vákkiyar.

92. *Paráparakkanni*: by Táyumāṇa Suwámi.

93. *Ñāṇanúru*: by Akastiyar.

94. *Ñāṇamuppatu*: by Akastiyar.

95. *Koṇkaṇar Ñāṇam*: by Koṇkaṇar.

96. *Kapilar Akaval*: by Kapilar. A confutation of the claims of the Brahmins to superiority from caste. The author was the brother of Tiruvalluvar, and is said to have composed the present work in consequence of the Brahmins of Tiruvélúr, against whom he was brought up, having refused to invest him with the triple cord on his mother being a pariah woman.

97. *Akappaichchittar Pádal.*
90. *Alukunichchittar Pádal.*
99. *Idaikkáđduchchittar Pádal.*
100. *Pattirakiriyár Pulampal.*
101. *Pađđanattuppillaiyár Pádal.*

A collection of verses of different metres, attributed to Pađđanattuppillai, a wealthy merchant of Kávérippúmpađđanam, who is said to have ejaculated them extempore as he wandered up and down the country after he had parted with all his worldly possessions and assumed the life of an ascetic.

The following works belong to the Tamil Catholics :—

1. *Ñánópatésam.*—A course of lectures on theology : by the Rev. Father Robert De Nobiles.

2. *A'tma Nirṇayam.*—A treatise on the origin and nature of the soul of man, in opposition to the various conflicting opinions held by the Hindu philosophers about them : by the same author.

3. *Mantira Málai.*—A choice collection of prayers for the use of the laity : by the same author.

4. *Vétiyar Olukkam.*—Exhortations on the nature and duties of the office of catechists, in twenty chapters : by the Rev. Father J. C. Beschi, 1727.

5. *Ñāṇakkannādi.*—Meditations for catechists : by the same author.

6. *Ñāṇamuyatchi.*—Exhortations on the practice of piety : by the same author.

7. *Véta Viḷakkam.*—Exposition and defence of the doctrines of the Catholic Church, in eighteen chapters : by the same author.

8. *Pétakamuruttal.*—A confutation of schism : by the same author.

9. *Lútarinattiyaipu.*—The apocalyptic vision of the fall of a star from heaven applied to the fall of Luther from the Catholic Church : by the same author.

10. *Ñāṇa Vunartal*.—Spiritual reflections : by the same author.

11. *Suvisheshaka Virutti Urai*.—The Gospel for all the Sundays and festivals of the year, with practical reflections : by the same author.

12. *Reppremāta Tarkkam*.—Reasons for not attending the Dutch Church, written in the form of a dialogue between a Government schoolmaster and a Catholic boy : by the same author.

13. *Pusaittiyaṇam*.—Explanatory prayers at Mass : by the same author.

14. *Viyākulap Pirasaṅkam*.—Sermons on the Passion of our Lord : by the same author.

15. *Kristiyāṇi A'layam*.

16. *A'tma Vttiyaṇam*.

17. *Ñāṇa Appam*.—Pious instruction : by the Rev. Father Gabriel Pacheco.

18. *Aḷukaik Kuravai*.—Meditations on the griefs of the Blessed Virgin : by the same author.

19. *Sattiyajeyattan Saṅkaram*.—An Answer to the Rev. Mr. Meloh's "Triumph of the Truth" : by the same author.

20. *A'ru Ilakkaṇam*.—The Six Attributes of God : by the same author.

21. *Ñāṇa Putaiyal*.—The Spiritual Treasure : by Rev. Father Sebastian Pereira.

22. *Kristu Anucharam*.—The following of Christ, from the Latin of Thomas à Kempis : by the same author.

23. *Saṅchivi*.—A vindication of the Catholic Church and its dogmas against the attacks of Heresy, in three books, comprising thirty-seven chapters : by the Rev. Father L. Du. Pui, Pondicherry, 1841.

24. *Sattiyavéta Parikshai*.—A work of the same author, tending as the last.

25. *Teyva Parikshai*.—A review and refutation of the Hindú religion.

The following works belong to the Tamil Protestants :—

1. A translation of the New Testament : by the Rev. B. Zeigenbalg, Tranquebar, 1715.
2. Another translation of the same : by the Rev. T. A. Bronsveldt and the Rev. J. J. Fybrandts, Colombo, 1759.
3. Another translation of the same : by the Rev. T. Farricius, Tranquebar, 1772.
4. Another translation of the same : by the Rev. C. T. E. Rhenius, Madras, 1823.
5. A translation of the Old Testament : by the Rev. B. Zeigenbalg and the Rev. B. Schulze, Tranquebar, 1723–1728.
6. A translation of the Apocrypha : by the Rev. B. Schulze, Tranquebar, 1726.
7. A translation of the Pentateuch into high Tamil : by the Rev. Phillippus De Melho, Colombo, 1790.
8. Arendt's True Christianity, translated from the German : by the Rev. B. Schulze, Halle, 1751.
9. The Popes' Mirror, showing the errors of Popery.
10. The Liturgy of the Reformed Church : by the Rev. Phillippus De Melho, Colombo, 1760.
11. Triumph of the Truth, a refutation of the principal errors of the Church of Rome : by the same author, Colombo, 1753.
12. The Heidelberg Catechism : translated by the Rev. S. A. Bronsveldt, Colombo, 1754.
13. Bern's Compendium of the Christian religion : Colombo, 1778.
14. Borstin's short questions on religion.
15. Da Mulliu and Drellincourt's Meditations and Prayers : translated by the Rev. J. Franciscus, Colombo, 1778.
16. Catechism for children : by the Rev. S. A. Bronsveldt, Colombo, 1753.
17. History of the Old Testament : Colombo, 1753.

18. History of the New Testament : Colombo, 1753.
 19. An abridged History of Christianity : Colombo, 1781.
 20. Spencer's Dogmatic Theology.
 21. A Dialogue between a Heathen and a Christian : Madras, 1776, 12mo.
 22. A Dialogue between an Idolator and a Christian : Tranquebar, 1790, 12mo.
 23. Dialogues inter Moslimum et Christianem de via ad salutem : Tranquebar, 1803, 8vo.
 24. The Book of Common Prayer : translated by the Rev. Christian David, Serampore, 1818.
 25. Bunyan's Pilgrim's Progress, English and Tamil : Madras, 1826, 4to.
 26. The Book of Common Prayer : translated by the Rev. Dr. Rotler, Madras, 1828.
 27. A Protestant Catechism, showing the principal errors of the Church of Rome : Vepery, 1830, 12mo.
 28. The Evidence of Christianity : by the Rev. T. C. Rhenius, Madras, 1835.
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SKETCHES IN THE NATURAL HISTORY OF CEYLON.

BY EDGAR L. LAYARD, ESQ., C.M.E.S.

(Read June 9, 1849.)

PART I.—MAMMALIA.

Order QUADRUMANA.

Family SIMIA.

Genus MACACUS.

1.—M. SINICUS (L.), *Desmarest*.

SYN.—M. *Piliatus*, Lesson ; *Vandurá*, Sin.

The common black monkey of the maritime provinces ; very common also in the Kandyan districts ; about Trincomalee it is replaced by *Presbytes thersites*, and in the Jaffna peninsula by *P. Priamus*.

Genus PRESBYTES.

2.—P. THERSITES, *Elliot et Blyth* (Journal R. A. S., XVI., 1271).

This and the preceding species would seem to be peculiar to the Island, the present race being confined to the neighbourhood of Trincomalee.

3.—P. PRIAMUS, *Elliot et Blyth* (Journal R. A. S., XIII., 470; XVI., 732).

SYN.—*Kuranku*, Mal. ; *Buji*, Port.

Confined to the Jaffna peninsula on this Island, but inhabiting also the Malabar and Coromandel coasts. They are particularly abundant about Point Pedro, feeding on the palmirah, margosa, and other fruits. The young are produced in February or March.

4.—PR. CEPHALOPPEUS, *Zimmerman*.

SYN.—*Simia dentata*, Shaw ; *S. porphyrops*, Link ;
S. pithicus, Nestor Bennet ; *Rilavá*, Sin.

Peculiar to Ceylon, and distributed all over the Island, with the exception of the extreme north.

Family LEMURIDÆ.

Genus STENOPS.

5.—S. GRACILIS.

SYN.—*Loris gracilis*, Geoff. ; *Lemin loris*, Zimmerman ;
L. Ceylonicus, Fisch ; *Unahapuluvá*, Sin. ;
Teyváñku, Mal.

Very common, and generally distributed ; feeding on birds, eggs, and fruits. From its nocturnal habits it is not much noticed by Europeans, but by the natives it is much prized, being used in charms and love potions.

Family CHEIROPTERA, *Cuv.* ;

VESPERTILIONIDÆ, *Gray*.

Genus PTEROPUS.

6.—P. EDULIS PERON.

SYN.—*P. Edwardii*, Geoff. ; *Vavulá*, Sin. ; *Vauvál*, Mal. ;
Mursagu, Port.

This destructive animal is generally scattered over the whole Island, infesting fruit trees by night, and during the day hanging in clusters from some huge tree in the depths of the jungle, from whence it sallies forth on the approach of evening. The natives use them for food.

Genus CYNOPTERUS.

7.—C. MARGINATUS, *Birch*, *Hamilton*.

The small flying fox of Europeans ; abundant in the southern and midland provinces, but I have not met with it in the Jaffna peninsula.

Genus NYCTICEJUS.

8.—N. HEATHII, *Horsf.*

Abundant, and widely distributed; rises easily from the ground.

9.—N. TEMMINCKII, *Horsf.*

SYN.—*Vespertilio noctulinus* et *V. belangeri*, Geoff.

Common about Kalutara, inhabiting the old fort.

Genus KERIWULA.

10.—K. PICTA, *Gray.*

SYN.—*Vespertilio kerivoula*, Bodd.

I have only met with this species about Colombo in any abundance, and I obtained one solitary specimen at Ambagamuwa.

Genus PIPISTRELLUS.

11.—P. IRRORITUS, *Cantor.*

This small bat is abundant in the southern provinces; to the north it is replaced by the next species.

Genus HYPOSIDERCS.

12.—H. SPEORIS, *Sch.*

SYN.—*H. apicelatus* (female), Gray; *H. penicillatus* (male), Gray.

Remarkably abundant here (at Point Pedro), dwelling in caverns, of which there are several in the stony country about the villages of Alváy and Tondamánaru. It also clings under the roofs of houses in company with the next.

13.—H. MURINUS, *Elliot.*

This is equally abundant.

Genus MEGADERMA.

14.—M. LYRA, *Geoff.*

SYN.—*M. Carnatica*, Elliot.

Very abundant, and generally distributed; it rises easily from the ground when accidentally knocked down, and I am nearly sure I have seen it rise from a voluntary alighting.

Order CARNIVORA.

Family CANIDÆ.

Genus CANIS, L.

15.—C. AUREUS (?).

SYN.—*Sacalius Indicus*; *Nariyá*, Sin.; *Nari*, Mal.

I have never been able to obtain a specimen of our common jackal for identification; nevertheless, I believe the species to be identical with the Indian races.

Family FELIDÆ.

Genus FELIS.

16.—F. PARDUS, var. LEOPARDUS.

SYN.—*Puli (necjuratus)*, Mal.; *Tigir*, Port.; *Kotiyá*, Sin.

The leopard (or tiger of Europeans here) is too well known to need any notice, save that the common appellation of tiger wrongly bestowed on it leads people in England to suppose that *F. tigris* exists here, which it really does not.

A black variety of *F. pardus* is not unfrequently met with; it is nearly accidental.

17.—FELIS VIVERRINUS.

Common about Jaffna. I am in possession of a beautiful half-breed between this species and the domestic variety.

Family VIVERRINÆ.

Genus PARADOXURUS.

18.—P. ZEYLONICUS, *Schreber*.

Peculiar to the Island, and seems to be plentiful near Puttalam. I have not seen it from other parts.

Genus VIVERRA.

19.—V. ZIBETHA, *Lin.*

SYN.—*V. Midulata*, Gray; *Návi*, Mal.

Abundant about Jaffna. The natives keep them in confinement for the sake of the musk, which they secrete

largely. The method of collecting the secretion is by placing the animal in a small cage, against the sides of which it is obliged to rub itself, thereby depositing the musk on the woodwork, whence it is carefully scraped.

Genus GENETTA.

20.—G. INDICA.

SYN.—*Maranari*, Mal. (literally “Tree-dog”).

We have one, if not more, species of this genus, but I have not been able to identify them, never having procured a full grown specimen; they infest the houses in Colombo, but would seem to be quite unknown in the Jaffna peninsula.

Genus MANGUSTA.

21.—M. VITICOLLIS.

SYN.—*Herpestes vitlicollis*, Bennet.

Not uncommon in the interior of the Island, about Ambagamuwa and Pusselláwa, from which places I have received it.

22.—M. GRISEUS.

SYN.—*Herpestes griseus*, Sykes; *Kiri*, Mal.;

Bungoose, Port.; *Mukatiyá*, Sin.

Very common in the Jaffna peninsula. It appears identical with the Indian race, except that the nose and paws are much darker. There is another variety at Trincomalee which accords exactly with the Indian animal.

Genus LUTRA.

23.—L. NAIR, Cuv.

SYN.—*Diyaballá*, Sin. (literally “Water-dog”).

Not uncommon in the Bentota river. I kept one alive for several weeks in a bath. It fed on fish and the heads and entrails of fowls; it was unfortunately neglected by the native servants, and died during my temporary absence from home. It uttered a low growl and a plaintive whine in showing anger or fear. When feeding it was very savage, and would snap furiously at anything held to it.

Family URSIDÆ.

Genus URSUS.

24.—U. (PROCHILUS) LABIATUS, *Blainville*.

SYN.—*U. longirostris*, Seid. ; *Valahá*, Sin. ; *Karadi*, Mal. ;

Usu, Port.

The common bear of Europeans ; *ubique*.

Order INSECTIVORA.

Family SORIDÆ.

Genus SOREX.

25.

SYN.—*S. Indicus et S. Capensis*, Geoff. ; *Miyá*, Sin. ;

Múñchúru, Mal. (literally “Smelling-rat”).

The common shrew or musk rat ; abundant everywhere.

There are probably several species yet to be determined.

Order RODENTIA.

Family MURIDÆ.

Genus MUS.

26.—M. BANDICOTA, *Bichs*.

SYN.—*M. Giganteus*, Hardwick ; *Miyá*, Sin. ; *Akalán*,

Mal. ; *Ratu*, Port. name for all.

Common in the paddy fields round Kótté, doing great damage to the crops and embankments. The natives consider them very good eating.

27.—M. INDICA, *Geoff*.

SYN.—*M. kok*, Gray ; *Velleli*, Mal. (literally “White-belly rat”).

Not uncommon about Jaffna. The natives esteem them great delicacies, and they are much sought after.

28.—M. SETIFER, *Horsf*.

Founded on a young specimen, the only one procured. I shot it in a paddy field near Galle, and also saw another near Mátara.

29.—M. DECAMENUS.

SYN.—*Velleli*, Mal.

The common European brown rat; introduced.

30.—M. RATTUS.

The common European black rat; introduced.

Genus GERBILLUS.

31.—G. INDICUS, *Waterhouse*.

Common throughout the low country. It does not appear to extend to the hills. It constructs its burrow just under the surface of grass land, to the great danger of horses and other animals, who frequently injure their feet or legs by stepping into them.

Family SCIURIDÆ.

Genus SCIURIES.

32.—S. TENNENTII, *Layard*.SYN.—*Dandū-léná*, Sin.

69 The large squirrel of the interior to which I have given the foregoing name, is found somewhat abundantly about Ambagamuwa and Pussellawa. It differs considerably from *S. bicolor*. For full description of this and all our squirrels see Mr. Blyth's paper on the "Sciuri inhabiting Ceylon," which is compiled from specimens sent him by myself, and which are consequently not now in my possession to refer to. It is peculiar to the Island.

33.—S. MACROURUS, *Forster*. (Journal R. A. S., XVI., 1869.)SYN.—*Maranil*, Mal. (literally "Tree-squirrel").

Common large squirrel of our western coast. It never intrudes on the haunts of the preceding, nor is it intermingled with it in its own locality.

34.—S. TRISTRIATUS, *Waterhouse*. (Journal R. A. S.,
XVI., 1001.)

SYN.—*Léná*, Sin. ; *Anil*, Mal. ; *Surkachi*, Port.
for all the tribe.

The common low-country palm squirrel ; identical with the Indian race.

35.—S. BRODIEI, *Blyth* and *Layard*.

Peculiar to the Island ; common on the west coast from Point Pedro to Puttalam, replacing *S. tristriatus*, from which it is easily distinguishable by its pale colour and long pencil tuft at the extremity of the tail. This, however, is often wanting in stuffed specimens, and indeed even in live ones, the hair being but lightly attached to the skin.

36.—S. LAYARDI, *Blyth*.

This lovely little squirrel I procured in the jungles near Ambagamuwa. It is peculiar to the interior or hilly districts, and of a new species.

37.—S. KELAARTI, *Layard*.

I procured a *Sciurus* about Tangalla, which I fancy will prove a new species ; and shall therefore name it after one of our members who is now taking up the study of the fauna of his native country, thus offering a bright example to his apathetic countrymen. Our Society may look forward with strong hopes to many new species being added to our indigenous fauna by his researches.

S. Kelaarti may be described as very like *S. Palmarum* of India, the head much redder, the alves of the back and belly more blended, and the animal altogether smaller. It entirely replaces all the small *Sciuri* from Tangalla and Hambantota, and I should fancy extends far on towards Trincomalee.

Genus PTEROMYS.

38.—P. ——?

I have seen a mutilated skin of a species killed in the neighbourhood of Ramboda. It requires identification, and there are probably other species.

Family HISTRICIDÆ.

Genus HYSTRIX.

39.—H. CRISTATA.

SYN.—*Eyp-panri* and *Mud-panri*, Mal. ; *Porco di spino*, Port. ; *Katu-úrú*, Siṅ. (literally “Thorn-pig.”)

The common porcupine is unluckily very abundant, and generally distributed, doing great damage to the young cocoanut trees ; the flesh is very white, and good eating.

Family LEPORIDÆ.

Genus LEPUS.

40.—L. NIGRICOLLIS, *F. Cuv.*

SYN.—*L. Meloncha*, Tem. ; *Musal*, Mal. ; *Levri*, Port. ; *Hává*, Siṅ.

Common throughout the Island, and very abundant in the plains of the western coast.

Order PACHYDERMATA.

Genus ELEPHAS.

41.—E. INDICUS, *L.*

SYN.—*Yáṇai*, Tam. ; *Aliyá*, Siṅ. ; *Alphanti*, Port
The elephant.

Genus SUS.

42.—S. SCROFA, var. INDICUS.

SYN.—*Panri*, Mal. ; *Porco*, Port. ; *U'rá*, Siṅ.
The common wild hog.

Genus HALICORE.

43.—H. DUGONG, *Cuv.*

SYN.—*H. Indicus*, Owen; *Kadaṭ-panṇi*, Mal. (literally “Sea-pig”); *Porco de mara*, Port.; *Múdu-úrā*, Siṅ.

Common in the Bay of Kalpiṭiya, feeding on the marine algæ; they are much prized by the natives for food.

Of the *Cetacea* that frequent our seas I have not had any opportunity of judging further than that occasionally we have an unpleasant visit from a carcass stranded on the Galle Buck, which would seem to be that of the common cachalot or spermaceti whale.

44.—PHYSETER MACROCEPHALUS.

Order RUMINANTIA.

Family CERVIDÆ.

Genus CERVUS.

45.—C. HIPPIAPHUS, *Cuv.*

SYN.—*Marai*, Mal.; *Merong*, Port.; *Góná* Siṅ.
The common elk.

46.—C. AXIS, *L.*

SYN.—*Máṇ*, Mal.; *Viado*, Port.; *Muvá*, Siṅ.
The common spotted axis.

47.—C. MUNTJACK, *Zimmerman.*

SYN.—*Vel-muvá*, Siṅ. (literally “Field-deer”).

The paddy-field deer. I have been assured by many sportsmen that there exists of this deer *sed non vidi*.

Genus MEMINNA.

48.—M. INDICA, *Gray.*

SYN.—*Moschus Meminna*, Erxl.; *Ukkulāṇ panṇi*, Mal.
(literally “Cleft pig”); *Miminná*, Siṅ.

The mouse deer of Europeans.

Genus BOS.

49.—B. GAURUS.

Knox gives this noble animal as existing in his time. They are undoubtedly now extinct, which is much to be regretted.

50.—B. BUBALUS.

SYN.—*Kulu Mádu*, Mal.; *Mi-haraká*, Sin.
The wild buffalo.

Order EDENTATA.

Genus MANIS.

51.—M. BRACHYURA? *Erxl.*

SYN.—*Alunhu*, Mal.; *Kaballéyá*, Sin.

I think our Island species is identical with the Indian race. It is not uncommon, but requires identification. I have also seen another species, which I have little doubt will prove to be the long-tailed *Manis* of authors.

The above list of mammalia has been the result of about three years' collection, principally in the Southern and Northern divisions of the Island. It is still very imperfect, and many more species and genera may be looked for from the interior.

I have trustworthy information of a true fox, and doubt not that a search would amply repay the time and trouble expended.

Such as this list is, I present it to the Society in full hopes that it may induce some one to come forward and contribute towards rendering it perfect.

PART II.

 SKETCHES IN THE NATURAL HISTORY OF
 CEYLON: ORNITHOLOGY.

BY EDGAR L. LAYARD, ESQ., C.M.E.S.

(Read August 25, 1849.)

CLASS—AVES.

Order SCANSORES.

Family PSITTACIDÆ.

Genus PALÆORNIS.

1.—P. ALEXANDRI (*Edw.*, pl. 292; *Nat. Lib.*
Psittacidæ, pl. 2).

SYN.—*Psittacus Alexandri*, L.; *P. Eupatria*, L., the female; *Psittaca Ginginiana*, Bris., the female; *P. Guineensis*, Scop. (*nec. Gem.*); *P. Sonneratii*, Gem.; *Pal. Nepalensis*, Hodg. (*Journal As. Res.*, XIX., 177). *Pannú-girawá*,* *Sin.*; *Pañchavarṇak-kili*, Mal. (literally *pañcha* “five,” *varṇa* “coloured”); *Pappugaiha*, Port. (the name for all parrots); *Jongichy*, Dutch.

This parrot is found in large flocks about Colombo and in the jungles of the lower hills. It extends to Chilaw, where it is mingled with the smaller *P. torquatus*, and is also abundant at Galle, Mátara, and Batticaloa, the last place in particular. Its favourite food consists of the young blossoms of the cocoanut, and, where they are not procurable, of various wild nuts. The natives, who catch them in

* The Siphalese and Tamil names should be pronounced as if written with Italian vowels.

great numbers when young, report them to breed in hollow trees. They roost in large flocks in the cocoanut topes.

2.—P. TORQUATUS (*Daubenton's Pl. Enl.*, 551).

SYN.—*Psittaca Torquata*, Bris.; *Psittacus Alexandri*, var. B. Latham; *P. Cubicularis*, Hassel; *P. Docilis*, Viel.; *Girawá*, Sip.; *Marutan-kili*, *Tennan-kili*, Mal. (*Marutu* literally, the name of a tree in which they breed).

Particularly common in the Jaffna peninsula, and extending to Chilaw. In the harvest time they feed in vast flocks on the stubble or standing grain, leaving sentinels on watch for danger. When the grain fails them they devour the fruit of the tamarind, margosa, &c.

The eggs are pure white, and with little distinction between the two ends: they are generally three or four in number, and are laid in holes in trees with but scarcely any nest. Weight, 2 drachms and 16 grains. Incubation begins in March.

They are brought to Colombo to be tamed, and when properly taught speak well, and are much sought after by the native bird-fanciers.

75
3.—P. CALTHROPÆ, *Layard*.

Of this lovely bird I procured but one pair, and those in the month of November, 1848, at Kandy. The male was killed on the wing, the female in the act of feeding on the ground on some decayed fruits. As these specimens are in Calcutta with Mr. Blyth, the Curator of the Bengal Asiatic Society's Museum, I cannot describe them from themselves, and must therefore subjoin the description which he has published; and here I would beg to acknowledge the great obligations I am under to that gentleman for the names and identification of all the species here enumerated. Had it not been for the aid thus kindly afforded, the rough notes of the birds collected would never have seen the light.

Mr. Blyth says : “ A beautiful species, the representative in the mountainous parts of Ceylon of *P. Columboides* of the Nilgherries,* to which species it manifests the nearest affinity. Crown and back plumbeous-gray, passing to bluish on the rump, and rich dark indigo-blue on the middle tail-feathers and outer webs of the rest ; tail yellow beneath and at the tips, sullied along the inner web of the rectrices above ; forehead and cheeks (passing beyond the eye) broad, nuchal ring and entire under parts brilliant green ; wings deeper green, paler and yellowish towards the scapularies ; throat intense black and contrasting, with a tendency to form a ring round the neck. Upper mandible bright coral, with a white tip, the lower reddish. Wing $5\frac{1}{2}$ in.; tail probably of the usual length, but its medial feathers in the specimen described appear but half grown.† A female or young male is wholly green, more yellowish below, except the rump, which is brighter blue than in the adult male, and the tail is mingled green and indigo-blue ; the more vivid green ring of the neck but obscurely indicated. Both mandibles dull coral, with white tips, and the wing measures $5\frac{1}{4}$ in., the tail but $4\frac{1}{2}$ in.”

To the above may be added that in a fresh specimen the feet are bluish-grey, as it were powdered, and the eye of a pale chrome.

Our late President, Sir J. Emerson Tennent, had a singular living variety of this species, wholly of a bright chrome colour, the broad green nuchal ring being slightly darker in some lights. When I saw it, it had moulted several times, but had always assumed the same garb. It was caught in the neighbourhood of Adam’s Peak.

* This species may yet be found here.—E.L.L.

† While going to press I have received a letter from Mr. Blyth enumerating some new birds received from Dr. Kelaart at Nuwara Eliya. He writes : “ Among these is *P. Calthropæ* adult, with full-grown tail no longer than your specimen.”

4.—P. CYANOCEPHALUS (*Edm., pl. 233*).

SYN.—*Psittacus Cyanocephalus*, E. ; *P. Flavitorquis*, Shaw ; *Palæornis Flavicollaris*, Frank ; *Psittaca Bengalensis*, Bris. ; *Psittacus Erythrocephalus*, Gume ; *Batugirawá*, Sin. (literally “Brinjal colour”) ; *Payattan-kili* Mal. (*Payaru* is literally the name of a bean).

This elegant parrot seems generally distributed (with the exception of the Jaffna peninsula) throughout the Island. It chiefly prevails in the low wooded hills between Colombo and Kandy, feeding in small flocks of one or two families on the nut of the *dombagaha* (Sinhalese).

The adult birds are much prized among the natives ; the young birds have the head of a greyish-purple, with a yellow ring round the throat. On assuming the plum colour of the adult bird, the feathers do not fall off, but change colour. From the numerous specimens procured, I am inclined to think this change takes place before the end of the first year.

Sub-Family LORINÆ.

Genus LORICULUS, *Blyth.*

5.—L. ASIATICUS.

SYN.—*P. Asiaticus*, Latham ; *P. Indicus*, Gme. ;

Mal-girawá, Sin. (literally “Flower parrot”).

Very abundant in the plain extending along the whole sea coast from Puttalam (where said by Mr. Brodie to be common) to Tangalla. Plentiful also about Kandy and Ambagamuwa.

They are exceedingly fond of drinking from the toddy vessels ; and in such situations are entrapped in horse-hair nooses by the native boys, who tame them. The young bird resembles its Indian representative *L. vernalis*. Not having the red heads, like as in the preceding species, the feathers themselves assume the bright red colour by age.

RAPTORES.

Tribe DIURNI.

Family FALCONIDÆ.

Genus FALCO.

6.—F. PEREGRINUS, L.

SYN.—*F. Barlarus*, L. ; *F. Communis*, Bris. ; *Rájáliyá*, Sin. (the name of the whole tribe of Raptores) ; *Paruntu*, Mal. (general name also) ; *Knykdief*, Dutch (literally “Chicken thief”) ; *Moitu*, Port. (general name also).

Very rare in Ceylon ; one specimen only procured ; this I shot in January, 1850, on the open plain near Vallai Bridge, Jaffna district, feeding on the waders which frequent the borders of the salt pans. In its maw were the remains of *H. Leschenaulti*.

Sub-Genus TINNUNCULUS, Vieillot.

7.—T. ALAUDARIUS.

SYN.—*Falco Alaudarius*, Brie. ; *F. Tinnunculus*, Lin. ;
F. Interstinctus, McLelands.

This daring hawk is common throughout the Island on open ground dotted with low bushes. They are generally found hunting in couples, skimming low over the bushes and along the ground, and darting suddenly on their prey, which consists almost exclusively of small birds, such as larks and amadavats, which abound in such situations.

Sub-Family PERNINÆ.

Genus BAZA, Hodgson.

8.—B. LOPHOTES, (Pl. Col., 10).

SYN.—*Falco Lophotes*, Tem. ; *F. Syama*, Hodg.

Uncommon, but found occasionally in the Jaffna district in the cold season, from October to February. It is said to feed on caterpillars, but a specimen which I procured in Jaffna contained a lizard (*Calotes*) in its throat half devoured.

Sub-Family CIRCAEIINÆ.

Genus HÆMATORNIS, *Vigors*.

9.—H. BIDO.

SYN.—*Falco Bido*, Hors. ; *F. Bacha* (?), Daudin ;
F. Cheela, var.

Not uncommon in various parts of the Island, having been received from Mr. Brodie at Puttalam, procured by Dr. Templeton near Colombo, and another was shot by myself in the Pasdun koralé near the hill Diyagallagolava, the habitat of the Edible-nest-building *Collocaliæ*, while sleeping on a low tree: a fortunate discharge of dust shot brought it to the ground, and on removing the skin a large mould shot was found embedded in the bone of the right wing: from its appearance it had evidently existed there for a long period.* The specimens procured in this country are uniformly smaller than the Indian race.

Sub-Family CIRCINÆ.

Genus CIRCUS, *Lacepede*.10.—C. SWAINSONII, *A. Smith* (*Gould's B. E.*, pl. 34.)

SYN.—*C. Pallidus*, Sykes ; *C. Albescens*, Leson.

Not uncommon on the open plains about Puttalam and the neighbourhood of the salt lake at Vallai, Jaffna district. It preys on frogs, lizards, and reptiles of all kinds.

* For the benefit of any person collecting in this region, into whose hands these "Sketches" may fall, the following description of a collecting gun, which I have in constant use, is given :—

Length of barrel, 3 ft. 7 in.; calibre rather less than 3-8ths of an in., carrying a ball 120 to the pound; thickness of metal 1-8th of an in., making a total of 5-8ths of an in. in the diameter of the barrel at the muzzle. At the breech the metal is much thicker, to counter-balance the length. The stock is fitted with a trap box holding wadding, balls, caps, a knife, needles and thread, &c. The charge for this gun is about a quarter the usual quantity, which will be found very economical in a country where all the collector's ammunition has to be carried by coolies. It kills at a long distance, and throws ball or three buck shot admirably, if required for deer, pea-fowl, or wild ducks. It was with this gun I killed *H. Bido*.

11.—C. CINERASCENS (*Gould's B. E.*, pl. 35).SYN.—*F. Cinerascens*, Montague ; *C. Montagui*, Vieillot.

Abundant in the same localities as the preceding, and often mistaken for it in its adult plumage. When young it is rufous brown, with a light chocolate nuchal ring and a conspicuous whitish mark on the rump, by which it may be identified during its flight at a great distance. Its principal food consists of snakes, upon which it pounces in its low skimming flight. The prey is always seized with the foot near the neck, and instantly bitten across the head. I have seen it strike its quarry as often in the water as on land.

12.—C. MELANOLEUCUS.

SYN.—*Falco Melanoleucus*, Pennant.

One specimen only of this bird has fallen under my notice. I shot it near Mántódđam, west coast.

Sub-Family ACCIPITRINÆ.

Genus MICRONISUS, *G. R. Gray*.13.—M. BADIUS (*Rl. Col.*, 308, 336).SYN.—*Falco Badius*, Gmelin ; *F. Brownii*, Shaw.

This is the common sparrow-hawk of the European residents, and is most universally distributed, and very common. It preys on small reptiles and birds.

Genus ASTUR, *Bechstein*.14.—A. TRIVIRGATUS (*Pl. Col.*, 303).SYN.—*Falco Trivirgatus*, Rein. ; *Astur Indicus*,
Hodg. ; *A. cristatus*, *G. R. Gray*.

Apparently confined to the mountainous districts, where, to the loss and annoyance of the planting community, it is very common, doing great damage in the hen roosts. It is very sly, and rarely falls by the planter's gun, although always killed when opportunity offers. The late Mr. Dewar

of Carolina estate, Ambagamuwa, told me many pairs built in the clefts of a perpendicular cliff overlooking the falls of the Kelani-ganga.

Sub-Family THRASÆTINÆ.

Genus SPIZÆTUS, Vieillot.

15. — S. LIMNÆTUS (*Pl. Col.*, 127, 134).

SYN.—*Falco Caligatus*, Raffles; *F. Niveus*, Tem.; *Kólik-kallān*, Mal. (literally “Fowl thief”).

The crested variety of this noble hawk is rather abundant and generally distributed. I have shot it at Mátara about the banks of the river, and at Point Pedro, the northernmost point of the Island.

Sub-Family HALLÆTINÆ.

Genus BLAGRUS, Blyth.

16. — B. LEUCOGASTER.

SYN.—*F. Dimidiatus*, Raffles; *Ichthyætus Cultrunguis*, Blyth. (*Journal A. S.*, XI.) *Kadal-A'lá*, Mal. (literally “Sea eagle”).

Not uncommon, but local, one pair frequenting the same place for several years and breeding on the same tree, generally an aged *bó*-tree, whose sanctity protects the nest from the depredations of the boys. I found the nest of one pair lately (January, 1850) in such a situation; and although I offered a good reward to some lads on the spot, not one would mount to rob it, saying that the demon of the tree would injure them.

This is the largest bird of prey now existing in the Island.*

* Bennet, in his work on Ceylon, includes *Gyps Indicus* among the birds of the Island. Traditional reports are also current among the natives in the extreme south, of the existence of a large bird of prey once existing in that locality.

Genus HALIASTUR, Selby.

17.—H. INDUS.

SYN.—*Falco Indus*, Boddaert; *F. Pondicerianus*, Gme.; *Milvus Rotundicaudatus*, Hodg. (young); *Chem Paruntu* Mal. (literally “Red hawk”); *Brimalgu Moitu*, Port. (literally “Red hawk”).

The common red-fish hawk of Europeans is found abundantly all round the sea coast, and particularly at the mouths of rivers, where it preys upon all kinds of carrion brought down by the stream, fighting with the crows for the prize. They will sit for hours on the fish-kraals in the rivers and catch the small fish which rise to the surface in their endeavours to escape. I have known them seize a fowl, but this is of rare occurrence; one was cut down with a table knife by a gentleman while in the act of killing a large hen. They build in trees in the neighbourhood of water, making many false nests before they finally fix on a place which pleases them. While the female is incubating the male occupies one of these nests. The nest, like that of *Blagrus Leucogaster*, is composed of sticks and twigs without any lining; eggs about 2 in. in length by $1\frac{1}{2}$ in. in diameter. Colour, dull dirty white, dotted at the thick end with bloody coloured unequal and uncertain small blotches and spots; in some instances these spots are nearly black, resembling dry blood. The young, of which there are generally two, are excluded about the first week in February, incubation lasting about three weeks. Before the appearance of their feathers they are covered with a grayish down, and are apparently fed with soft reptiles.

Genus MILVUS, Cuvier.

18.—M. ATER.

SYN.—*F. Ater*, Emen.; *M. Govinda*, Sykes; *Karum Paruntu*, Mal. (literally “Black hawk”).

Common all along the sea coast, and easily distinguished by its deeply forked tail. It feeds in company with the last on the same substances.

NOCTURNI.

Family STRIGIDÆ.

Genus SCOPS, *Savigny*.19.—S. LEMPIGI (*Pl. Col.*, 99).

SYN.—*Strix Lempigi*, Hors.; *Scops Javanicus*, Less.; *Punchy bassa*, Sin. (literally “Small owl,” the name *bassa* being common to all the owls, and even including the *Caprimulgidæ*); *Nattu*, Mal.; *Koorooi*, Port.

The Ceylon variety of this bird (the *S. Lempigi*, Jerdon) is common throughout the maritime districts, though periodical in its appearance. During moonlight nights they hunt in pairs for *Coleoptera* and *Phalænæ* about umbrageous trees, uttering their monotonous and melancholy “*wagh wagh*” when at rest, and a quick tremulous cry when flying. The natives say they build in hollow trees, never in buildings.

Genus KETUPA, *Less*.

20.—K. CEYLONENSIS.

SYN.—*S. Leschenaulti*, Tem.; *Loku Bassa* and *Bakamúná*, Sin.; *U'mattan-kúkai*, Mal.; *Bacamuna*, Port.

These large owls are common and apparently widely distributed, being found in Colombo, Puttalam, and Jaffna. The natives tell me they feed much on fish, which they catch by moonlight. A pair I kept alive for some time fed on fish with avidity. When alarmed they uttered a hissing note, ending in a deep growl, bulging out the throat. The natives report that they build in hollow trees and clefts of rocks, laying two large white eggs.

Sub-Family ATHENINÆ.

Genus NINOX, *Hodgson*.21.—N. SCUTULATUS (*Pl. Col.*, 289).

SYN.—*Strix Scutulata*, Raffles; *S. Hirsuta*, Tem.; *N. Nialensis*, Hodgson.

Found but rarely in the interior of the Island. I know nothing of its habits, never having seen it alive.

Genus *ATHENE*, *Boie*.22.—*A. CASTANOTUS*, *Blyth*.

SYN.—*A. Castanoptera*, Blyth (Journal A. S., XV., 280).

Peculiar to the Island, and discovered by Dr. Templeton in 1846. It is pretty generally distributed about the interior, and not uncommon.

Its description is fully given *loc. cit.*, and may be briefly summed up thus: Length, 7 to 8 in.; head and breast dark brown, barred with dusky buff; back and wings dark brown, barred like the head with a dark brown; tail similarly barred, but with wider stripes; vent and stomach whitish, and much mottled with brown; beak much hidden by the *vibrissæ*; feet small, and clothed with stiff hairs.

Sub-Family SYRNIINÆ.

Genus *SYRNIUM*, *Savigny*.23.—*S. INDRANI* (*Gray's Il. Gen. Birds*).

SYN.—*Strix Indrani*, Sykes, T. A.; *Ulamá*, Sip.

Found occasionally in the densest and most lonely jungles. This is the dreaded “Devil bird” of the Siphalese, and its note is considered as a pure prestige of evil.

Sub-Family STRIGINÆ.

Genus *STRIX*, *L.*24.—*S. FLAMMEA*, *L.*

SYN.—*S. Javanica*, Sykes.

The white or barn owl of Europe is probably identical with the species which we have in this Island. The only place whence I have procured it is the old Fort of Jaffna, where the dilapidated ruins and the vast old banian tree on the bastion overlooking the esplanade afford it a congenial home; here it may be nightly heard uttering its mournful cry while seated on a gable of the old Dutch church.

NOTES ON THE GEOLOGY OF CEYLON.
LATERITE FORMATION.—FLUVIATILE DEPOSIT
OF NUWARA ELIYA.

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“ *Even those who run may read in the Book of Nature, and if they read there is no reason why they should not note for the benefit of those who have not the opportunity of studying from the same pages.* ” —NEWBOLD.

THOUGH the geological formations of Ceylon are of a simple nature, and described as such by writers, that attention has not been paid to the laterite formation of the Island which it deserves : some have called it decayed clay ironstone ; others have described it to be granitic rocks weathered *in situ*. It has not, however, been so slightly regarded by Indian geologists. Their more recent researches have discovered new features in this peculiar formation, which have thrown great doubts as to its being the mere result of disintegrated or decomposed hypogene or trapean rocks *in situ*. Captain Newbold of the Madras Engineers has even gone so far as to suspect it to be of tertiary origin. It is with a view of drawing the attention of observers in this Island, for a more complete elucidation of this subject, that this communication is submitted to the Ceylon Asiatic Society.

The term laterite (derived from *later*, a brick) is applied to those masses of reddish clay, more or less indurated, and containing pebbles or crystals of quartz. It is called by the Singhalese *cabook*, and is used extensively for building purposes. There are several varieties of laterite, and which admit of classification :—(1) Laterite, properly so called, of a hard compact, almost jaspedous rock, formed of indurated

clay, tabular or sinuous, in which are impacted quartz crystals of various sizes and colours, generally of a reddish or brick colour. To this kind the term *quartzose* may be applied, as it contains a larger proportion of undecomposed quartz. The cavities and sinuosities are lined, or sometimes filled with a whitish, yellowish, or reddish clay.

(2) A second variety of laterite, and that most frequently met with in Ceylon, is of a softer consistence, and can be cut easily with a knife, but hardens on exposure to the atmosphere. The term *lithomargic* laterite has been applied to this kind.

(3) There is another form which my friend Staff Surgeon Dr. Clark calls *detrital*. This is found in nullahs or ravines. It is evidently formed of pebbles of quartz loosely imbedded in clay, both being washed down to these nullahs by the heavy rains. The detritus of laterite is seen about Colombo forming a bræccia with marine shells. A laterite gravel is also seen in various parts of the Island covering the laterite hills, and it is also found at their base. This gravel is nothing more than the quartz crystals of the laterite rocks separated by the rains from their clayey matrix: some of the pebbles are denuded entirely of the clayey covering, others retain still a thin coating of it. *Lithomarge* is a sectile clayey substance of variegated colours. It is chiefly formed of a decomposed felspar and hornblende,—whitish when the former prevails, and yellow or reddish when hornblende predominates in the rock from which it is derived, owing to the larger proportion of oxide of iron which the latter mineral contains. There are extensive hills of lithomarge in Ceylon, and frequently it lies under the hard laterite, and is often interposed between its layers.

With the exception of Voysey and his few supporters (who regard the laterite to be of igneous or volcanic origin), geologists consider laterite to be the product of the disintegration and decomposition of granitic rocks. The

difference of opinion rests upon the question whether the disintegration or decomposition took place *in situ*, or whether the disintegrated masses were deposited or brought from a distance and laid over the rocks on which laterite now lies ; or, in other words, is it a formation in itself derived from rocks which formerly existed ?

To the former view (weathering *in situ*) there are many more supporters than to the latter ; and among them our late much lamented Dr. Gardner, who from observations both in this Island and on the Continent of India, attributed the formation of laterite to the simple decay of gneiss or granitic rocks. I cannot but agree with him that in many cuts or sections of the rock nature is detected in the act of disintegration, some of the original stratification (often seen running almost vertically) of the gneiss being preserved ; in other places it is difficult to trace where the gneiss terminates and the laterite commences, one as it were running into the other. But I must observe that I could never trace this continuity in the hills of the harder variety of laterite. Here, certainly, the appearances are favourable to the opinion that laterite is a distinct formation of itself. And yet this hard laterite rests on gneissic rocks, as is seen at the bottom of wells sunk in the lateritic hills at Mutwal and in the Fort of Colombo. Laterite may also be seen, says Captain Newbold, capping hypogene or trap rocks of great elevations, while the adjacent hills, composed of an exactly similar rock and forming a continuation of the same bed equally exposed to the action of the weather, are quite bare of the laterite. He also observed laterite resting on limestone without a trace of lime in the laterite. If my information is correct, laterite is also seen over some of the limestones of Jaffna in the north of the Island. General Cullen found on the western coast of India, 15 miles south of Quilon, a layer of lignite in the

laterite, imbedded in a stratum of dark shale and clays. Lignite has also been seen in the laterite of Travancore, and graphite has also been observed there. These are the observations which have made Captain Newbold and others view the laterite of Southern India as a distinct formation, more recent than any of the hypogene rocks. Till similar features are observed in some of the laterites of Ceylon, we are obliged to regard them to be the weathering of hypogene rocks *in situ*.

To comprehend how a hard compact rock like granite or gneiss could moulder away into laterite and lithomarge, it is necessary to know the composition of the minerals which enter into the formation of these hypogene rocks.

The following are the mineral constituents of the most common forms of :—

	Felspar.	Mica.	Hornblende.
Silica	66·75	48·00	42·00
Alumina	17·50	34·25	12·00
Lime	1·05	—	11·00
Potash	12·00	8·75	a trace.
Magnesia	—	—	2·25
Oxide of Iron	·75	·50	·25
Oxide of Manganese	—	·50	·25
Water	—	—	·75
	98·25	96·00	98·25

Quartz consists of nearly pure silica, with a trace, however, of alumina and sometimes of iron.—From *Jameison's Journal*.

It is easily seen that the chief source of the alumina necessary for the formation of clay is derived from the felspar and mica which enter into the composition of granitic rocks, and that hornblende supplies the largest quantity of iron, the hyperoxidation of which, assisted probably by electric influences, precedes the disintegration of these rocks. In rocks in which felspar and hornblende predominate, the clay formed is much variegated. Pure felspar forms the porcelain clay or kaolin so abundant on the plains of

Nuwara Eliya. Quartz, if deeply impregnated with oxide of iron, will also moulder away, but not quite so soon as the other mineral constituents of hypogene rocks.

Before I had observed the immense lithomargic hills of Uva and Nuwara Eliya, it was difficult for me to believe that large mountain masses of hard rock could disintegrate so completely into lithomarge. When there are, however, such unequivocal proofs of rocks, several hundred feet high, mouldering away into kaolin or white procelain clay in some parts, and in others into lithomargic earths and clays of various colours and consistence, it is not difficult to account even for the formation of the harder forms of laterite. In sections made in Nuwara Eliya for the construction of roads, successive layers of sienitic gneiss are seen in various stages of decomposition, and these layers retain in some parts, where the decay is not far advanced, the original lines of stratification. Some of these layers are of pure kaolin, others of a reddish or yellowish clay; some mixed of all three, giving a beautiful variegated surface to these exposed parts of the hills. In half-decomposed portions of some of the hills on the plains of Nuwara Eliya may be seen dark reddish spots, which are formed of decomposed garnets, and in other hills are seen scaly graphite. Adularia and ceylonite are sometimes found in the beds of clay. If such then be the striking illustration of the decomposition of one form of gneiss in which hornblende and felspar prevail, it is easy to conceive other forms of granitic or gneissic rocks weathering into laterite in other circumstances and other situations. Laterite in any shape is not found in Nuwara Eliya. The stones used here for building are half-decomposed gneiss obtained from lithomargic hills, and it is yet to be ascertained how long these will last. I fear that the decomposed stone is too felspathic to last many years.

The presence of lignite in some of the laterites of Southern

India, and sometimes laterite being found over limestone, would lead us to suppose that laterites are of two periods : the one, and only one perhaps, existing in Ceylon being of the weathering of rocks *in situ*, and therefore still being formed, and the other a deposit of disintegrated lateritic matter (over more recent formations) derived from previously existing lateritic rocks. The subject, however, requires further investigation ; it is involved in greater mystery than many other geological phenomena. Ceylon affords many opportunities for carrying on observations necessary for its complete solution. The features of the laterite of Southern India, which induced Captain Newbold to suppose laterite to be a distinct formation, may also exist in Ceylon ; therefore Members of the Asiatic Society will do well to note the nature of the rocks on which the Ceylon laterite lies, and to examine whether any of it contains lignite or is in the slightest degree fossiliferous. The discovery of fossils alone will not prove that laterite is not decomposed gneiss *in situ*, for Sir Charles Lyell and others have suggested the possibility of finding fossils even in gneiss of later origin. Granting that this is the case, nothing could then be easier than to account for the presence of fossils in decomposed masses of the same kind of rocks. This subject is now engaging the attention of the Geological Society of London, their notice being attracted to it by the so-called *foot-prints* on the gneissic rock at Kurunégala, which I have not yet had an opportunity of examining.*

Though the geological features of Ceylon resemble those of Southern India, yet from the paucity of observations perhaps, there appears to be considerable difference in many respects, especially in the nature of more recent deposits. Kunker, a limestone gravel, has not been noticed in Ceylon,

* Since this Paper was written I have examined the rock and found it to be laminated granite, and the marks merely the effects of weathering.

nor has clay-slate been seen in this Island, though its associate rocks are found in great abundance. Both are found in extensive beds in Southern India. Regur, the black cotton soil which covers nearly two-thirds of Southern India, has not been noticed in Ceylon, and yet it is most probable that all these three formations exist in some parts of the Island, most likely in the northern districts.

The only alluvial, or rather fluviatile, deposit in Ceylon resembling in external characters the regur of India, is the black soil of Nuwara Eliya and its neighbourhood; with this difference, however,—regur lies over a limestone gravel and the blackish loam of Nuwara Eliya over a quartz gravel with a substratum of clayey earths, formed of the lithomargic hills and valleys over which the loam and gravel were deposited. A deposit of gravel and loam has also been observed on the Nilgiris, 6,000 ft. above sea-level. These deposits of loam and gravel on the patanas and plains of Nuwara Eliya are considered by casual observers to be the decayed particles of the rocks in the immediate vicinity, brought down by the rains. If this is their real nature, the decomposed particles of the gneiss and quartzite, which chiefly compose these existing rocks above the plains, could not by any means have taken their present position of the loam and gravel. The colour, too, of the decomposed particles would not be dark brown or black, but whitish or yellowish. The loam and gravel lie so conformably on the lithomargic surface of the hills and valleys that it is unreasonable to suppose that they were deposited from any other source than from a large sheet of water.* The heavier

* May not this account for the want of luxuriant vegetation on these patanas, the water having washed and carried away to the lower parts of the Island the alkalies and phosphates so necessary to plants? The black soil of Nuwara Eliya, however rich in appearances, requires much manuring; the best potatoes are the product of well-manured grounds; guano is as much required here as anywhere else.

particles in the form of gravel sinking first, and then the lighter particles held in suspension in the water, were deposited over the bed of gravel, or, as in some places seen, on layers of various-sized pieces of quartzite and gneiss. The loam is not mixed with gravel ; it is composed of fine sand, just such as the mud of rivers or lakes is composed of. In the lower layers this loam is of a brown colour, but becoming darker as it approaches the surface, and after being mixed with the decomposed matter of the grasses which grow on it, the loam becomes nearly of a peaty nature and of a blackish colour.

In sections along the different roads which traverse the plains, a continuous layer of gravel, from 1 in. to 2 ft. or 3 ft. in thickness, is seen lying over the lithomargic hills, and on this gravelly surface the brown or blackish loam is seen of varied thickness, generally from 1 ft. to 3 ft. ; in some places even 5 ft. or 6 ft. of loam is found. In a section near the Governor's Cottage an interruption appears to have taken place, after about a foot of mud was deposited ; then came over the pure mud masses of gneiss and pebbles, now lying several feet thick, mixed with loam of a brownish colour. Over this mixed deposit is again seen a thin layer of loam such as is found in other parts of the plain,—the whole forming a curious variegated structure.

The above observations lead me to conclude that the plains of Nuwara Eliya, and perhaps those of higher parts, have once been the channel of a slow winding river or bed of an extensive lake. And it is probable that lower hills, which look like inverted tea cups, were elevated by subsequent upheavals after the waters had deposited the gravel and loam. It is perhaps in this manner only that the almost uniform thickness of the gravel and loam in the valleys and on the tops of the hills can be accounted for. Had the present elevated surface existed while the waters were

depositing the heavier particles held in suspension, we should expect to find thicker layers of gravel on the valleys than on the sides of hills. Such is not, however, the case : thick beds of gravel are even found on the tops of the hills several hundred feet above the present drainage of the plains. Geologists have decided that the mountains of Southern India were elevated to their present heights by successive upheavals, and therefore it is not objectionable to consider the higher lands of Ceylon to have also been elevated by more than one upheaval. There is abundant evidence too, besides the one just alluded to, to conclude that Ceylon has been subjected to successive internal forces, which will explain also the present configuration of the mountain masses of Nuwara Eliya and the characters of Nuwara Eliya and Horton plains.

Hitherto no evidences of deluvial or glacial currents have been found in Ceylon. The rounded blocks of granite and gneiss seen on various parts of the Island are the effects of a spontaneous concentric exfoliation which small and large masses of these rocks are susceptible of. Major Lushington has instanced this peculiar exfoliation in a gigantic scale on the rock of Dambulla. Alluvial and fluvial deposits are seen in various parts of the Island, but none perhaps so extensive as the fluvial deposits of Nuwara Eliya, which appear to extend from Horton Plains, passing over Nuwara Eliya and progressing towards the valleys of Maturata on one side and to Dimbula on the other. Although these deposits are not of a diluvial nature, still there is an importance attached to them, as they show that at a former epoch the interior of Ceylon was traversed by broader and more expansive sheets of water than any of the rivers of the present day. It is doubtful, however, whether this large lake or river which has deposited its mud on the plains of Nuwara Eliya is dwindled down

into the narrow streams which now exist on these plains as tributaries to the great Mahâwêl-gaṅga.

While geology fails to tell us how a world was made, this science teaches us how after it was made it was disturbed and altered for the habitation of successive generations of organised beings. Though the ground we walk upon and the hills which surround us are inanimate objects, we ought to remember that they too received and obeyed, and continue to receive and to obey, the laws of the same Creator, who made the grass to grow and animated the world with living beings. When we observe hard adamantine rocks mouldering away into soft clays and earths by the same forces which give life and energy to animal and vegetable natures, we also find that it is one and the same power which reduces both organic and inorganic matters, at later periods, to their primitive elements. To man is given the faculty of observing and recording the operations of this power, though from him is hidden the mysterious nature of that power which was from the beginning, still is, and will at last dissolve the great globe itself. Before the tender herb and scented flowers burst into life and beauty the inorganic world received the care of the Omnipotent God; and surely what required and received His first attention is deserving of much more than our least. Therefore it is to be hoped that Members of the Asiatic Society of Ceylon, and their friends in different parts of this Island, will make such observation as will contribute to a more perfect knowledge of the Physical History of Ceylon.

ON THE MANUFACTURE OF SUGAR FROM THE JUICE OF THE COCOANUT TREE.

BY J. G. TAYLOR, ESQ.

(*Read February 23, 1850.*)

IN 1847, during my residence in the Southern Province, near the main road from Point de Galle to Mátara, this idea was first made known to me by a very ingenious person, now a resident in Galle ; but I was too incessantly engaged in the duties of my situation to allow of my making any experiments. Nor had I then the requisite experience in the ways of the Island ; besides, unfortunately, the native population had conceived so many prejudices against us and our sugar-making operations, that I think it would have been out of the question.

In the beginning of the month of September my attention was again aroused by the experiments of a friend, well versed in chemistry, on the products of the cocoanut tree, and, having procured a small quantity of sweet toddy, I had the satisfaction of perceiving that a very fair quality of sugar could be made therefrom. After this, my brother consented to tap two young trees near his residence, on small quantities of juice collected from which I made a great number of experiments, the results of which I now propose to lay before you ; and I am even sanguine enough to hope that some of them (as well as the inferences deducible from other remarks) may be of some service also to the manufacturer of sugar from the juice of the cane. In fact, we find that very often more light has been thrown on certain investigations from observations on analogous inquiries than from direct experiment on the very subject itself.

Two methods are, as described by my brother, employed by the natives to preserve the juice from fermentation by separating the feculencies. As to the nature of these feculencies, we are still, unfortunately, very much in the dark. We have, even did we possess time and ability, no apparatus or materials for the investigation of the subject, and it is for that reason I earnestly entreat the Society, should they agree with me in considering the subject to merit sufficient importance, to cause all possible efforts to be made to have these particulars thoroughly and scientifically elucidated. But I will communicate what I know on the point, as that will be some guide perhaps as to what direction the attention of the investigator should be addressed.

From the end of the spadix, a slimy matter is observable, oozing out with air bubbles along with the juice, and whether with bark or lime, but more especially with lime, an abundant bulky mass of this substance, called in Tamil *mundi*, is generally found on straining the juice; but curious to say, when the spadix is reduced to a mere stump, and the running of the toddy draws near an end, very little indeed, if any of this *mundi* is seen. I imagine from this that the *mundi* goes, in the economy of the plant, to form the flowers, &c., but may not be needed by it when the fruit is established; but this is a mere suggestion. It is not the substance which is all precipitated by the defecating agents employed, for they are equally necessary when we see none of it, and it also exists in the drinking toddy, which has had nothing put into it. This *mundi*, then, is a white, opaque, pasty substance, quite tasteless and devoid of smell, and when washed and dried contracts, and becomes first elastic and india-rubber-like, and next hard, and of somewhat the appearance of gum, but when again put into cold water swells, and becomes as at

first. It possesses one very curious property, however, which may possibly give a clue to a discovery of one at least of its constituent parts. When added to starch paste, heated till the pellicles burst, it will liquify the same, and, in one instance only, saccharified it. The latter only happened with one parcel of *mundi*, which I suppose had been kept just long enough to allow of the particular principle which effects this being evolved in proper proportion. But the liquifaction took place in more than four trials ; one on the scale of three gallons of water, kept three hours on a water-bath at 150° , with about two ounces of *mundi* stirred in. Probably this may suggest that a portion of that strange substance, diastase, is present in the *mundi*, as the nature of the scum or pellicle which rose to the surface from time to time seemed to look like caseine. The dried *mundi* thrown on a red-hot iron gives out the smell of toasted bread. This may indicate dextrine, and as starch itself exists, it is said, in the sap of all plants, that may be also present. A small quantity of *mundi* which I had put aside and forgotten for a time became quite saccharine by itself. Diastase is extracted from malt, which is formed by the germination of a grain ; then why not in the bursting of a flower bud ? It is the diastase, acting on the starch in the grain, which saccharifies malt. I trust some able chemist may take up the investigation, a most interesting one, even as regards the solution of some of the mystery of the physiology of plants, and of the elaboration of their proteine compounds, as they are justly named.

Whatever they are—and it is all-important for us that they should be known exactly—they seem to exercise under favourable circumstances no evil influence that we can see, on the liquor which reaches the hands of the manufacturer,—a clear white limpid fluid hardly distinguishable from water.

I am puzzled to know, indeed, what substances they may be which are separated by the defecating agents. So long as *mundi* was present I concluded that it was that; but I have lately manipulated liquor in which I could actually detect nothing but what had been put in, and yet we have proved that without anything sugar can be made (though the litmus paper be unreddened at all), and that not even with the after addition of lime. A thick scum forms on the top after boiling, and the syrup assumes a viscous character.

From the hopelessly black colour of the native jaggery made from limed liquor (*peni*), I thought good sugar could not be made from it. However, I procured a quantity for trial. The enormous quantity of lime that had been put into the chatties was soon apparent, and it was partly diffused through the liquor like a very fine impalpable sediment. Fine English towels would not stop it from running through them. I earnestly beg for assistance also to enable a plan to be established for the extraction of this floating lime. It is true that most settles to the bottom, as I have since found, and might be left behind by drawing off the supernatant liquor; but still some is lost, which I am anxious to avoid. Now herein seems to be a great difference between cane juice and *peni*. Whatever quantity of lime one puts to the former seems taken up by it, and to exert its baneful influence at once; but in the toddy, as I say, we find the most of it at the bottom, while the supernatant liquid remains quite limpid, and not to have taken up more lime than so much water would have done. Although by the first experiment with the limed liquor I did not succeed in getting out the half of the lime, which I estimated correctly at over an ounce to a gallon, the sugar did not turn out nearly so black as I thought it would have done, and is the sample marked No. 3. These trials, I may add, were all made with open chatties.

As regards filters, having remembered seeing, when the coolies poured out the chatty of water round the cocoanut plants, that all the vegetable impurities seemed to remain on the surface of the sandy soil, the idea of a sand filter occurred to me. In a box filter of fine wire cloth I spread three inches of sharp sand from the bottom of a well, and poured on gently the liquor to be filtered. The sand stopped even the most minute particles, and the liquid came through quite limpid. These sand filters acted in the most perfect manner possible so long as *mundi* was present,—it preventing, in some curious way, the fine particles of lime from choking the sand ; but having lately tried them with the liquor which contained none, they failed of their effect. They still stop every impurity, but soon get choked, and are thus too slow for practical purposes. But cane juice which has been defecated passes through well, and therefore I recommend a trial of these sand filters to sugar-makers. I noticed in this trial that the lime which remained in the liquor was taken up and dissolved by the sugar when the density of the syrup was about 20° Beaume.

In the next trial, the floating lime was taken out with the white of an egg to two gallons. Eggs are not generally admitted as legitimate materials for defecation, as not always procurable, but in a country where this would only add one-sixteenth of a penny to the value of a pound of sugar I am not so sure that they might not be occasionally employed. In this case they took every atom of lime out, and the result was an excellent sugar, the grain of which I purposely “broke” for claying,* and it is the clayed sample No. 4. Thus I came to the conclusion that lime, merely in solution, does not make the sugar dark, and only injures the result by forming an undue quantity of molasses. And yet all the

* An operation the use of which is now quite exploded, or ought to be.

drained syrups granulated well on being boiled a second and third time ; but if not for the lime, a very small portion of syrup or molasses would drain from it on the very first boiling, as I have since proved. Our toddy-drawer boiled a lot from which the lime had been extracted by egg, and to his great surprise the result was a jaggery actually whiter than that made from bark toddy.

I need not tell any sugar maker that it is a popular error to think that eggs make sugar or syrup white. The albumen has no decolorising power at all, but only removes those impurities which would have made the sugar dark. If therefore we extract these by any other means it will do equally well. If it be true, what the natives tell us, that bark will not prevent the juice from fermenting somewhat in rainy weather (though that I doubt), if we are compelled to use lime, it is just as well that we know how to get it out. A nut is sold in the bazaars called in Tamil *kaḍḍukai*, and used by the tanners, but it is not the true gallnut. On the addition of an infusion of the powdered nuts to the strongly limed but clear liquor, a very abundant precipitate took place. The liquor, being filtered, was as brilliantly transparent as rock crystal, and all the subsequent processes perfectly satisfactory. I now find that the solution or infusion of *kaḍḍukai* should be added to the liquor at the temperature of 140° to 160°, and that filtered a minute after reaching the boiling point. The precipitate was a reddish brown colour. The result of this experiment, which I have repeated since, using another material, gave the sugar No. 2. The *kaḍḍukai* infusion gives a dark blue or nearly black colour with the muriate of iron, and forms a precipitate with the solution of gelatine. The following day, to give this experiment its collateral test, I ground twenty-five canes, which produced me two and a half gallons of juice, at 9°, to which I added two drams of lime. On the

addition of the infusion of *kaḍḍukai* just as perfect a precipitation occurred as with *peni*; after filtration it threw up no scum whatever, and was nearly colourless. Gallnuts are mentioned by Dr. Evans as one of the best defecating agents. I confidently recommend a trial of this to sugar planters, as I believe it to be of the last importance to extract the lime, and for the above idea I am indebted to the suggestion of a friend.

Before this I had ascertained a curious fact. Strange to say, though so large an amount of lime is present turmeric paper is not reddened unless the cream of lime is stirred up. But on adding a very great excess, the *peni* will redden a solution of turmeric. This was done till the liquor assumed a light red colour. To this common alum was added at 140°, until a bulky precipitate took place, and all colour whatsoever disappeared. The liquor being filtered was remarkably clear and pure, and notwithstanding we know that the sulphate of potash is still present* and will exercise a baneful effect on the liquor, it did not seem to do so, but granulated freely. Perhaps the sulphate of potash may pass into the molasses. I tried this plan with a solution of very black cane sugar, and with the same effect, the precipitation discharging nearly all the colour.

The idea of the last trial which I shall detail is taken from a pamphlet by Mr. Gay. His words are : "The addition of tannate of lime and alum as the liquor came from the mill would effectually prevent all fermentation, and gelatine could be added during the succeeding process of clarification." I must here remark that I have frequently boiled liquor defecated by bark, and though it made good sugar found it possessed a certain thickness which I did not like, and an unwillingness to part with its molasses. However, this idea

* Evans, p. 103.

of gelatine, on being pointed out to me in Mr. Gay's pamphlet, seemed very applicable to our liquor. Being already saturated with the peculiar principle of the bark, on the addition of the gelatine a decided and very abundant precipitate at once took place, which was all stopped by a flannel filter, leaving a pure limpid fluid, which we all agree in thinking cannot contain much besides sugar and the salts (supposed to be of potash) peculiar to the cocoanut juice. Though boiled in a quantity of only three pints, in a wretched little earthen pot, which burned the liquor in all directions, as they all do, the sugar No. 1 was the result, and the molasses merely nominal,* while it was easy to see the syrup would have mostly all grained on a second boiling. This process I consider as the one in every respect the best, and I also recommend this to the cane planter. The pounded *hal potu*, in sufficient quantity, I would leave in the clarifier all the time the juice is running in from the mill; or if that were insufficient, a decoction or infusion could be added. The gelatine must be mixed and the liquor filtered, I think, below the boiling point, or even cold, but that must be ascertained by experiment. The vessels for clarifying must be of copper. I fully intend to prove this point as soon as our present wet weather shall clear up.

Having written the above, I was favoured with the opinion of a scientific friend on the subject, on which I have detailed the experiment just described. He says he has been studying the action of the bark, and does not think it contains any tannin, for in the first place it shows no action with iron, and moreover the precipitate which it forms with gelatine is soluble in lime water. (This is true, for I have proved it also.) He says further:—"I am inclined to think that it contains a peculiar principle capable of throwing

* None of the samples of sugar I send have been drained for more than two days.

down gelatine, but differing from tannin. I find that other substances throw down gelatine; for instance, hematine, the peculiar principle of brazil wood, does so, but the precipitate is soluble in hot water. The *kaḍukkáy* doubtless contains tannin, and its precipitate is tannate of lime. I tried, as you requested me, the gelatine; the result was the best sugar I have made, and the quantity also was more satisfactory. A careful quantitative experiment is necessary to determine the relative value of the bark and the chunam toddy. The lime certainly does favour the catalytic change of the sugar into glucose, but probably it would not if thrown down by the tannin before the application of heat. Tannin throws down almost every vegetable proximate principle, and gelatine throws down albumen, so that I think with this we get rid of everything out of the toddy except the sugar, the dextrine, and the salts. There is an innocuous substance which precipitates gum, and probably would dextrine also, but which from want of proper apparatus I am unable to prepare; it is silicate of potash. The preparation of this compound is very easy and cheap, and if it acts as I think it would, it would leave us just the sugar and the salts."

I have since tried some juice, substituting the rind of the fruit of the pomegranate for the *kaḍukkáy*. It had the same effect exactly, and the result is excellent. The bark of the ironwood tree I believe will also do, and perhaps many other barks and nuts.

The addition of a true decolorising agent, such as animal charcoal, to the liquor while boiling, effects a wonderful improvement in the colour of the sugar, even in an open pan. But as that would involve a second and far more tedious filtration, in whichever way it is performed, it may be doubtful whether we shall ever adopt it. However, we can manufacture the animal charcoal here as advantageously as

in any place in Ceylon. I have fancied that even a small flannel bag-full placed in the pan improved the grain of the sugar in one or two trials, and I found the liquor passed through and through the bag as it boiled.

The gravity of all the *páni* we have experimented on is very nearly the same, being about 9.5° Beaume. Sometimes the mouths of the *mutties* not having been well protected a little rain water has got in, as we judge from a suddenly increased quantity and lower gravity. On one or two occasions the juice reached 8.9° Beaume. There is no doubt therefore that in practice over a pound of Muscovado sugar would be extracted from every gallon, and I myself think more nearly a pound and a half, by the processes, either of bark or lime, detailed above, and I think it not unlikely that could the trees be kept constantly running (which indeed they could) the extraordinary quantity of 180 to 200 pounds of sugar may be obtained annually from every cocoanut tree. How much more ought to be obtained the new publications on sugar making take great pains to inform us, but none of them detail any method by which, except in the laboratory of the chemist, they can really state the true result to have been procured in practice.

Many speculations of different kinds of planting having been undertaken in this Island, perhaps without due consideration of its adaptation to them, it is truly satisfactory to have every day increasing evidence of the fact that this country is at all events eminently fitted for the perfection of the growth of the cocoanut tree. Here we cannot go wrong, and therefore I consider the subject in this particular rests on the solid foundation. Objections against all new ideas are always raised, and sometimes where we expected to find encouragement we are met with a doubt. I have heard it observed against the probability of the establishment of a manufacture of sugar: "Such great numbers of

men would have to be employed that it would be a serious objection." It is true that very numerous gangs will have to be looked for, and probably brought from India. And yet look at the Galle district. Only let a beginning be made and a demand for labour created, the supply will soon come, especially in a fertile, cheap, and abundant country as ours is. And to the objection as to numbers, all I can say is, that any scheme which shows that a great force of labour, and perhaps also necessity for the employment of European talent, is required, and can be profitably exerted in the carrying out of any object, that object must surely be deemed of some importance.

ON THE SAP OF THE COCOANUT
TREE, AND ITS MANUFACTURE INTO SUGAR.

BY W. S. TAYLOR, ESQ.

(Read February 9, 1850.)

At a time when there are complaints made of decreased production of sugar in our West Indian Colonies, of the failure of cane planting in the Madras Presidency, and of the ill success which has attended some speculations of a like nature in this colony,—when the futility of the means adopted by the English for the abolition of slavery has been gravely announced, whereby the sugar growers of Cuba and Brazil are likely to acquire too great a predominance in the market, and well nigh a monopoly of the article,—it will prove encouraging to many who are interested in the general welfare and prosperity of Ceylon to hear that its far famed cocoanut palms are calculated to yield a large amount of excellent sugar, the manufacture of which it is to be hoped we shall ere long see established. When, too, it is considered what thousands of tons of sugar must be destroyed by the distillation of the sweet sap of this palm into alcohol, and the moral pestilence which this baneful liquor occasions, it must be ardently desired by every philanthropic mind that the sap, if taken at all, should be converted into a blessing in the form of sugar, instead of being perverted into a curse in the shape of arrack. By this means we should be entering the list against vice, and not only the vice of intemperance and its concomitant evils of crime and suffering, but we should also be active rivals of the

pampered slave-owners, and directing a thoroughly practical crusade against Negro slavery. Every consideration therefore both of profit and humanity stimulates us to carry out this idea. Yet it seems singular that it should never have been attempted before, as the sap, or "toddy" as it is generally called, has been, I presume, from time immemorial made into the form of jaggery, which is however a far inferior mode of rendering it useful for purposes of domestic economy, it being with difficulty prevented from deliquescing, while sugar, from its being in separate crystals of considerable hardness, offers more resistance to the humidity of the atmosphere.

Having seen small samples of sugar made from the toddy, I determined about three months ago to try two young trees, six years old and coming into bearing, to see what quantity of sap they would yield, and whether the product could be readily manufactured into a useful and marketable article, and as far as the experiments have been carried (only as yet on a small scale) the result is very satisfactory. The natives have long been in the habit of making a very superior kind of white jaggery, and therefore it was only natural to suppose that if they could succeed in making it either white or black (at least, some they make with lime is dark brown) at their pleasure, any one accustomed to sugar making could produce a superior article at once from the tree, it being also quite easy, as has been proved here, to make a good grained sugar from the jaggery, and even from the common impure article manufactured at Point Pedro from the palmyra toddy, used for binding fine chunam work.

There are several ways of taking the sap here, which it may perhaps be useful to detail before proceeding to the manufacture of the sugar: that is to say, the mode of cutting the flower-stalk is the same in all cases, but I mean

as to what is put into the pots to precipitate the feculencies and prevent fermentation. For drinking purposes alone it is taken without anything being put into the pots, the main point being then of course to get it to ferment as soon as possible, when, if taken for instance at six o'clock in the morning, it is sourish early in the afternoon, in which state it is drunk in considerable quantities, and is very intoxicating. For this purpose it is taken from the tree twice a day, the morning's toddy being drunk in the afternoon, and the evening's at night. Limed toddy can however be kept till three or four o'clock P.M. without change. The fermented toddy is sold regularly in licensed taverns,—taverns which I need hardly say are perfect *foci* of idleness and vice, gambling, &c. No one can tap his own tree to get the pure sweet toddy, were he inclined to drink it, without paying one pound a year to the "toddy renter." There is no tax however on taking it for making jaggery or sugar, under certain restrictions, *i. e.*, with an infusion of bark or lime, which of course are supposed to render it undrinkable. This is as it should be, and with such a law we can work with tolerable freedom. Perhaps, however, the sugar manufacturer might be allowed by special license to take it without bark or lime, if he found he could make a purer article without them.

For jaggery the best method is to put some pounded bark into the pots (*mutti*). This bark is called *tumpalam paddai* in Tamil, and *hal-potu* in Singhalese. It is highly astringent, and the effects of its tannin is to coagulate and precipitate a white pasty sediment, and thereby prevent fermentation. This sediment is thrown away as worthless, but there is also some sediment found in the fermented toddy pots, which is used as a yeast for raising wheaten bread. Lime also is a powerful agent, as better not to use it, since it acts too strongly on the sugar

contained in the sap; the proportion of it, however, can be nevertheless so adjusted as not to have a very destructive effect; still, it generally causes the liquor to get more or less dark-coloured in the boiling, unless it be extracted by employing tannin or albumen, as will be elsewhere explained in my brother's paper on the manufacture of sugar, &c.

The toddy is called in Tamil *hallu* when it is used for drinking, and *páni* when it is intended to make jaggery or sugar. To obtain it the same method is practised here as in other parts of the Island. Sometimes trees which are not good bearers of nuts are selected for this purpose, which is merely done I presume in order that they may not be so unprofitable as if they only bore a few nuts—though a good bearing tree, one with large well-developed *pálaika!* or flower stalks, is decidedly the best, and will of course yield more sap than an inferior tree. Whatever tree may be selected then, it is necessary that the *pálai* should be well matured and nearly ready to burst into blossom, at which time only it is certain to have a good flow of saccharine sap. The toddy drawer, called *Nalavan*, a peculiar caste, watches for this juncture, and at the proper time he ascends the tree—in the case of mine a mere step off the ground on to the lowest branch; but if the tree be lofty it is more difficult. In this case he makes a small circlet or fillet of palmyra leaf, leather, or coir rope, in which he inserts his feet to prevent their slipping apart; then, with the soles of his feet firmly pressed against the trunk and his arms closely embracing it, he alternately bends and straightens his back and thus climbs up the tall, snake-like stem. In the southern and western parts of the Island they do not require to ascend every tree separately, as there are ropes stretched from one to the other, along which the men pass safely and quickly at a great height from the ground, and this enables them to attend to about fifty trees a day each

man,* whereas here, twenty to twenty-five trees are considered about the mark. At Galle especially, where a great many trees are rented for arrack in the same plantation, this is easily managed, but at Batticaloa very few trees comparatively speaking are devoted to toddy, there being such a steady demand for the nuts, and no arrack distilled here, that people prefer to let their trees bear. The *Nalavan* is provided with a cylindrical-shaped mallet, called *tadda-pudde*, made of a hard dark wood called *náka*, neatly turned, and a sharp, broad bladed crooked knife called *pálaik-katti*. Arrived at the top of the tree he seats himself quite leisurely on one of the broad branches, resting the *mutti*, before tying it on to the *pálai*, in the hollow of another, which seems just adapted to the purpose. At first he merely beats the *pálai* well, once a day, in the morning, and after the first time, and again after each beating, he binds the *pálai* firmly round with fillets of cocoanut and palmyra leaves, to prevent its bursting into flowers. On the third morning he slices off the horny tip of the *spatha*, or sheath of the flower-stalk, exposing to view the young flowers and perhaps one or two young nuts, which it is hardly necessary to observe are formed by a kind of cryptogamous generation in the mysterious recesses of the *pálai*. The flowers therefore which are seen on the numerous small side stalks which branch out of the main flower-stem are, I believe, the male flowers, which have to fecundate the embryo nuts. However this may be, all this process is interrupted by the first cut of the trenchant blade. The same evening the man slices a little more, and after that regularly twice a day, but he does not always beat it, only every three days, once in the morning. I

* I am told a man will actually take the toddy from two hundred trees, but probably with assistance.

suppose this is done to bruise the young flowers and nuts, and prevent their forming and exhausting the sap, which has to flow through the main and side stalks for our purposes perhaps somewhat different from what nature intended. Still it is quite as allowable to take the produce of the tree in this form as to let it mature its nuts with all their complicated structure of coir, shell, and oily kernel,—which one would suppose would task the tree quite as much as parting so readily with its sap can do,—which may in one sense be said to save the tree a great deal of trouble. By pursuing the above-mentioned treatment regularly, in from twelve to fifteen days, or less, the sap begins to exude from the sliced surface. At first, and for two or three days, it is too small in quantity to be worth collecting, and it is eagerly consumed by bees, wasps, and ants. In fact, I observed mine oozing out sufficiently to attract the insects on the seventh day, but the natives generally allow till the twelfth or fifteenth day before tying on the *mutti*, by which they may lose some, which perhaps we could not afford to do on a large scale. I observed the *pálaika!* began to drip pretty freely on the ninth day, on the evening of which the *mutti* were tied on, and on the following morning they were taken down, and after being strained the liquor measured a pint and three quarters from the two trees, two *pálaika!* on each tree being cut. After this the *mutti* were taken down and fresh ones tied on twice a day, no more tapping or beating being required, only regularly taking off a thin slice twice a day, to form a fresh surface for the sap to exude from, otherwise it would soon become clogged up and would not run at all; and this is continued till the *pálai* is sliced away to a mere stump; and this obviously depends on the length and size of the *pálai*—if a short one, as on a very young tree, it may be exhausted in from twenty to thirty days, but if a good sized *pálai* on an

older tree, it may last as much as forty days, or perhaps a day or two more or less. Bark toddy (*paḍḍai-pāṇi*) is taken from the tree twice a day, the *mutti* being emptied, washed, and burnt out with a little dry grass or straw and kept for the next time, and clean *mutti* immediately put on. When lime is used, however, it preserves the sap much longer from fermentation than the bark, for which limed *mutti* are not taken down till twenty-four hours have elapsed; but it is requisite for the man to ascend the tree in the evening and take off the *mutti* for a moment when he slices the *pālai* to make a fresh surface, and then replace them, only taking them down for boiling the sap into jaggery on the following morning.

I found that the trees soon began to yield an increased quantity of sap, which was boiled down to sugar or syrup in different methods, as explained by my brother. For thirty days I gave the two trees a fair trial, only ten *pālai* being cut on each, and the sap increased from $3\frac{1}{4}$ in a day or two to 7, 8, and even 9 pints a day from the two trees, when towards the thirteenth day it fell off to 5 or 6 pints. The average for the thirty days was $6\frac{1}{8}$ pints, or $\frac{3}{16}$ pint from each tree per day. In the meantime two other *pālai* had been cut on one of the trees and one on the other, which gradually came into yielding, and I gave the two trees another trial; this time for thirty-one days, during which period the yield increased from 5 or 6 pints to 9, 10, and $11\frac{1}{4}$ pints a day; and the average from the two trees for the thirty-one days was $8\frac{1}{8}$ pints, or $4\frac{1}{16}$ pints per tree per day. Since the end of the thirty-one days—*i. e.*, about the middle and latter end of November, when there was only one *pālai* running on the smaller tree—it has frequently given 3 pints, which seems an immense quantity, as, if three or four had been running together at that rate, the tree would have given from 9 pints to a gallon and a half a day! At all

events, I am inclined to think that a gallon a day is but a reasonable yield to expect from each tree when arrived at a proper size and maturity and accustomed to yield its sap. The quantity of sap yielded by the two young trees in sixteen days from seven *pálaika!* was $439\frac{1}{2}$ pints, or $54\frac{1}{4}$ gallons, or $7\frac{1}{8}$ gallons from each *pálai*. Add one eighth more *pálai*, which was matured but not cut, but might have been made to yield within the time, we have about 185 gallons in a year from each tree. These two trees give, say, 55 gallons in two months ; one tree $27\frac{1}{2}$ gallons in the same time, or 165 gallons in a year. Add one eighth for a *pálai* not cut, we have $185\frac{5}{8}$ gallons per tree per annum. Perhaps 200 gallons from a good large tree might not be too much to expect. A greater quantity would probably have been obtained had we gone on cutting the *pálaika!* as fast as they were ready, but I wished to stop to prove an assertion I heard, that after tapping a young tree for a short time it would bear nuts more abundantly than one which was not tapped. And I must say that, so far from the operation having tended to exhaust them, as some might imagine, the newly-developed *pálaika!* are larger and longer than any previous ones, and promise abundance of fruit, while it is not less probable that they would have yielded more toddy than any other had they been tapped in their regular turn. From the rains having set in, and other circumstances, I am waiting some time before recommencing toddy-drawing operations.

It is rather difficult to come to a decided conclusion of how much a tree will give in a year. The quantity of toddy must of course be proportioned to the number of *pálaika!* that come out on a tree. Ask any native and he will say the trees get one *pálai* and one new shoot, or branch, every month, but there would seem to be no fixed rule for this, as more come out on some trees within a given time, and more on one tree than on another. I think two a month, or three

in two months, is much more likely to be the rate, but then some trees grow much faster than others. One of my trees matured and would have burst six *pálaika!* between August 28 and November 20 ; the other tree only four in that time.

The sap, or *pəni*, with bark infused, gives a much whiter jaggery than that which is limed, the latter, as made by the native method, being nearly black and full of impurities. Very few of the natives, however, take bark toddy, as they consider it more troublesome and expensive, though the jaggery makes amends for that by fetching a higher price.

The difference between the preparation of jaggery and sugar is merely this. For jaggery the liquor is boiled till it is extremely thick, and it is kept boiling and well agitated with the ladle to prevent its burning till it is quite inspissated, so as to be merely kept in a semi-fluid state by the heat : it is then turned into moulds (generally cocoanut shells), when it immediately cools into a hard concreted mass without any distinguishable grain ; whereas sugar (after being properly clarified) requires only to be boiled very carefully, yet quickly, till it attains a certain degree of tenacity, which is known to the experienced boiler as the “point.” It is then taken off, “skipped” into another vessel called the cooler, in which it ought to part with its heat gradually : so they are generally made of wood, and this ensures its forming a good strong grain. It does not, however, become quite dry till it is transferred into a second vessel, constructed so as to drain off the superfluous syrup which will not grain ; and this is termed the molasses. This will sometimes grain on being boiled again, and it is a curious fact that the molasses from cocoanut, or coco sugar, even when the liquor has been very highly, perhaps excessively, limed, grains much more freely than that from cane sugar ; and this process may even be repeated several

times with a clear gain of sugar each time, till at length the remaining molasses is so trifling in quantity as would hardly require a still to work it off into rum (or arrack, whichever it might be termed), which is so necessary an adjunct to a cane-sugar making establishment. Nevertheless, it is probable a small still may be maintained with advantage to entirely prevent waste by the accidental souring of the liquor, working off whatever molasses there might be, &c.; but as to skimmings, the liquor can be so easily clarified, being much more manageable than cane-juice—there is hardly anything to skim off from the first boiling of the “skip.”

I have, since writing the above, heard so many statements that the continual drawing of toddy would injure the trees, that perhaps it may oblige us to intermit our operations for three months, during the season in which the hot land wind blows—say, June, July, and August.

ON THE ELU LANGUAGE, ITS POETRY AND ITS POETS.

BY JAMES DE ALWIS, ESQ.

(Read February 23, 1850.)

CONTENTS.

THE apparent inattention to the study of the Singhalese—The present low state of learning in the towns—The *Elu* defined—The derivation of the terms *Elu* and *Sīṅhala*—The apparent difference between the old and the new styles in prose accounted for and exemplified—The general destruction of the Singhalese literary records—That *Elu* and *Sīṅhalese* are synonymous terms proved—Authorities cited—That the *Elu* and the Sanskrit had one common origin—The Singhalese alphabet analysed—The formation of the letters pointed out—The *Sanskrit* and *Pāli* characters embodied in the Singhalese alphabet—The sound of *f* found in the Sanskrit—Prose writings in the Singhalese classified—Examples—The Singhalese poetry defended against slights with which it is treated by Europeans—Similarity of thought between English and Singhalese poetry instanced—Translation of English and Singhalese poetry—The translated Holy Scriptures—The different kinds of poetry—Examples and rules of versification—Three diagrams—The මරය poem with a translation—*Yuvala* verses—An attempt to ascertain the date of “*Sidat Sangarāva*”—Several species of puns in poetry, with examples—Acrostics—The twenty-six Singhalese epithets for Buddha in general critically translated and explained—Singhalese *dialogues* explained and illustrated—A few rules of Singhalese prosody—The eight rythmical feet in poetry—Native prejudices against some—Examples—The evil characters, &c.—The diagram called අමසල explained—The four *Yavahan*—Examples—Brief notices of the poets and their works, with an attempt to ascertain their dates—“*Kāvyasékara*”—“*Seḷalihini-sandésa*”—“*Parawisandésa*”—“*Moggallāyana Patipanchiká*”—the “*Peṛa Kumbá Sirita*”—“*Kowulsandésa*.” (To be continued.)

INTRODUCTORY REMARKS.

It is not easy to explain the reason why so little attention is paid to the study of *Elu* by the Sinhalese. Many are the conjectures on this subject. Whilst some, it is said, have not the necessary time at their disposal, others complain of a want of teachers and books. Numbers having the means and time necessary for its study deprecate it as little less than *useless*. Others, though possessed of all the desirable advantages, devote their time to the study exclusively of the dead languages, ill-acquainted with, if not ignorant of, their own.

It is matter for regret to the writer that the Sinhalese should so far neglect their own language ; that though they use it in their everyday intercourse, and thereby shut themselves out from the possibility of acquiring a correct idiomatic knowledge of a foreign tongue, they, or at least the greater portion of the rising generation, should yet be incapable of carrying on an intercourse for any length of time without introducing Portuguese, Dutch, or English terms—a practice which, I regret, is gaining ground in the towns of this Island. I am however free to admit that with the introduction of European institutions, manufactures, &c., European words and names before unknown to the Sinhalese must necessarily obtain amongst them : as for instance, මරලෝපුව, *Portuguese*, ‘a watch’ ; බුදලේ, *boedel* in *Dutch*, ‘estate’ ; කුස්තමිහොසිසිය, *English*, ‘custom-house,’ &c. But how can anyone therefore justify the admixture of pure English words with the Sinhalese—*e. g.*, උයස trick එකක් play කරපි *for* උයස ප්‍රයෝගයක් කරපි, ‘He has played a nice trick.’ The writer has with regret observed the ridicule and contempt with which Europeans have frequently treated language such as the above, and that to his readers will furnish a satisfactory apology for the introduction of the subject in these pages, besides an

anxiety on his part to bring the subject prominently before his native readers, with a view to the discouragement of a practice which exists to a lamentable extent—a practice, too, from which no good results, since they who use a mixture of English terms neither think in English, and thereby exercise an easy mode of acquiring the idiom of that language, nor habituate themselves to a correct and fluent expression of their native tongue.

From such a state of things—I had almost said the degeneracy in literature—one would be led to believe that the Singhalese language is defective. But this is not so.* Such a belief would be inconsistent with the existence of books treating fully on a variety of subjects. It is said, however, that the books are written in EĻu and not in the Singhalese. This, again, is a mistake. *There is, in fact, no difference between the Singhalese and EĻu.* Owing to a plurality of vulgar terms which the natives use in their everyday intercourse, and also to a belief that “the dialect in which the Singhalese works are written is called EĻu,”† Europeans have been led to this supposition.‡ But they are both appellations for one and the same language, although it is true that from time to time the EĻu, like the English, has

* “The Eloo has undoubtedly given birth to the vernacular language of this country. It appears to claim great antiquity, and being derived from the *Sanskrit*, a great proportion of the words may be traced to that source. This language is copious, and must, in former periods, have been cultivated to a high degree of perfection; it is regular in its grammatical construction, and possesses most of the elegancies of style; and, from the numerous works which are still extant, it is evident that it is capable of being used in every species of composition.”—Clough’s “Singhalese-English Dictionary,” preface.

† *Vide* C. A. S. Journal, 1846–47, No. 2, p. 103.

‡ The Rev. B. Clough, in his “Singhalese-English Dictionary,” p. 799, gives the following definition:—“ඌ, the *Elu* or ancient language of Ceylon.”

undergone a slight change.* Again, it is incorrect to say

* එබඳු පෙර පියොවක්
දුටුව දනෝ හැරමින්වත්
දිව්වදනෙව් යන්යන්
පෙරලේ දනොමසියබස.—*Swābhāsalaṅkare.*

“Although such tricks (of composition) previously existed, it is improper to attempt them now; for, unlike the language of the gods (Sanskrit), the Singhalese is not without a change from time to time.”

The change here alluded to consists in the present disuse of certain words now obsolete, the introduction of many particles which were anciently omitted in composition, and in the abundance of certain decorations of style which were formerly avoided. The following, which I have elsewhere translated, will explain the difference:—

EXAMPLE 1.—පහන නමරන්ති බමන බමරඉඵ නමම පිරියෙස් සරණ නිමර බලල්වලා, when rendered into the modern, is read as follows:—පහන්වූ කල්හි නෙළුම්මල්හි හැසිරෙන්නාවූ බමරසමූහය අදුරුනැමති මවු සොයමින් ඇවිදින අකුකාරපැවසන් වැන්නෝයි.

EXAMPLE 2.—සරණ නමර වරලස, සෙබෙලවලකර අරියන : රදුවපෙර කළවමන්, කුසනිරිදු නොසමෙලේ, in modern prose reads as follows:—පාදනැමති නෙළුම්මල්හි කෙඟනැමති සෙබෙල් ගවසා ආරාධනාකරන් නාවූ රජදවසින් පෙර කලාවූ අවමාන්‍යයන් කුසරජ්ජුරුවන්වහන්සේ කලසා නොකෙලේය.

In the first example, බමන is the Singhalese for the Sanskrit word බ්‍රමන, which is now used. I have, however, given හැසිරෙන්නාවූ, which is more frequently used. නිමර is of less frequent use than අදුර, and බලල්, the substantive form of the adjective බල, is obsolete, because, perhaps, the same is used for *cats*. වලා, as a term of comparison, is now obsolete.

In the second example, සරණ, “feet” (a word which occurs in the first as the verb for “walking”), is obsolete except in poetry. වරලස, in common parlance, either an ironical or sarcastic expression, is frequently used in poetry. නැමති, a term of comparison, was anciently, and is still, omitted in poetry, as in යොවුන්සසුර for යව්වන නැමති සාරය; in prose, “the ocean of youth.” The decorations of style to which I have alluded, and which are particles and honorifics, are the following:—කල්හි, මල්හි, වූ. නැමති, හි, වූ, විසින්, වූ, වල්, ජුරුවන්වහන්සේ, ය, &c.

From the above examples it will be perceived that the modern prose is much more redundant in its style than the ancient, of which a few passages occur in the “*Sidatsanggarāwa*” and “*Lakunumiṇa*.” My own suspicions are that this arose from the decline of the Singhalese as a language after the general destruction of literary records in the reigns of several kings, and also from a frequent reference to, and a close imitation of, the paraphrases and commentaries, being the great bulk of prose, remnants of an ancient date which *ex-necessitate* adopt the redundant style—a style ill-adapted to other species of composition.

that the ancient books were written in EĻu and not in Sīphalese. The “Sidatsangarāwa,” an EĻu work (assuming that the ancientness of its date is the criterion which should decide the question)—a work indeed written in the most concise ancient style—designates the language of which it treats වහරටසුහුසියබස, “the colloquial Sīphalese”; and “Námāwaliya” (which is a vocabulary of terms contained in all confessedly EĻu works) calls the language of which it is a dictionary “the Sīphalese.”

පද බැඳ කියමි නාමාවලිය සිංහල.

“I sing in rhyme Námāwali Sīphalese.”

Now, those who maintain that an ancient obsolete dialect was the එළු different from the සිංහල, will not deny that the two books above quoted are in that so-called dialect.* How then will they who give the two words different meanings, reconcile their opinion with the positive assertion of the learned writers themselves as above cited, both of whom designate the language of which they wrote “the Sīphalese”?

Some writers have also defined the word එළු to be that dialect in which the poetical works of the Sīphalese are written,† doubtless intending to draw a distinction between the poets of old and those of a comparatively recent date. This is incorrect also. Any one who will be at the trouble

* “සිද්ධන්තසාරව or සිංහලාසංග්‍රහය—A Grammar of the EĻu or Ancient Language of Ceylon.”

“At a much later stage of my proceedings another native production came into my possession, the නාම වලිය, a vocabulary of EĻu nouns.”—Clough’s “Dictionary,” preface, vol. II., p. xix., p. 733.

† “Their scientific writings are generally to be found in Sanskrit; their religious writings in Pali; whilst their poetry is in a dialect of its own, the EĻu.”—C. A. S. Journal, vol. I., p. 36.

“එළු අකාරදිය had been composed to facilitate the study of the purest EĻu authors, especially the poets.”—Clough, *l. c.*, vol. II., p. xix.

to compare together all the poetical works of the Sinhalese will find that they are all (with the exception of a few in blank verse) written in the same poetical style now used amongst the literary Sinhalese, and that there is no real difference approaching to anything like a dialect between any two of them. Indeed, I fail to perceive any difference of dialect between *Totagamura*, the father of poetry after "the destruction" to which allusion has already been made, and the celebrated *Miripenne* of the present day. It is however possible that several words which occur in the old poetical works are no longer in use. This, I apprehend, is not a sufficient reason to justify the conclusion that the so-called old dialect was not the Sinhalese; for, otherwise, we may with equal reason say that Milton and Shakespeare were not English poets.

But I trust the question may be satisfactorily disposed of by an inquiry into what the poets themselves called the language or dialect which they wrote. For if (as it is supposed) there be a difference between *Elu* and Sinhalese, and, moreover, if the first is an obsolete dialect succeeded by the second, the old writers alone could have designated that which they wrote the *Elu*. Far from this being the case, some of the old writers have called the language in which they sang the Sinhalese; and some of the modern have designated it the *Elu*. And very often the same writer has given both the appellations. A reference to books will clearly show that—of which, however, I have no doubt—*the Sinhalese and Elu are synonymous terms*, and have always been used as such, notwithstanding any slight changes that may have taken place from time to time in the construction of sentences, or in the formation of words, or the elision of letters in the language of the Sinhalese.

Having but few books to which I can at once have

recourse, I shall quote but few passages in addition to the two extracts already given :—

1. මේ පිළිවෙළින් එළුවෙන්.—*Lakunusara.*

“Thus is the *Ełu* to be known.” (Before 1415 A.D.)

සියබස්සි වනු හේමෙසේ.—*Ib.*

“They thus occur in the *Sinhalese*.”

2. කියමි එළුවෙන් මදක් පදබැඳ.—*Kāviyasékaré.*

“I do sing a little in the *Ełu* language.” (1415 A.D.)

3. එබැවින් එළුවෙන් කීවසි අනදර.—*Lóvedasangrahava.*

“That I have sung in *Ełu*.” (1472 A.D.)

4. අජරමර මොක්පිණිස සිංහලබසින් කවිකලෙ නිසි මෙ කුසදු.—*Kusajātaka.*

“With a view to Niwana devoid of death and decrepitude, I have composed ‘*Kusadā*’ in the *Sinhalese* language.” (1610 A.D.)

5. සිංහලබසින් සැකෙවින් කියමි පදබැඳ.—*Subásité.*

“In *Sinhalese* rhyme do I sing.” (1612 A.D.)

6. මකරද්දජ නමින් කී එළුවද අමුතු.

“*Ełu* stanzas by the name of *Makaraddaja*.” (1768 A.D.)

7. එළුවස නගා රසකර.—*Karminīkoṇḍola.*

“The *Ełu* language sweetly rhymed.” (1771 A.D.)

8. ගඟරූපුදය කවිකලෙ හෙළබසින් මනා.—ගඟරෝහණේ.

“I have rhymed in pure *Ełu* ‘the offering in the river.’” (*Kiramba*, 1807 A.D.)

9. මෙසියබසින් කවිකලෙ නෙක විර්නසුත.—*Siyabas-maldama.*

“I have rhymed in several tunes in *Sinhalese*.” (*Kiramba*, 1821 A.D.)

10. සියබසිනි කවිකර.—*Nikinikata.*

“Rhymed in *Sinhalese*.” (1832 A.D.)

11. නගමින් එළවසට.—*Karmini pahana.*

“Rhymed in *Elu*.” (1840.*)

An inquiry into the derivation of the words එළ and සිංහල will also furnish us with further proof in support of the position advanced by me.†

The term එළ (*Elu*) is derived from සිංහල (*Sinhala*), which mutated into සිහල, සිල, සෙළ, and හෙළ, produce එළ. But scholars are by no means agreed upon this definition. According to some it may be from එ and ලදිවි (එලදිවි), ‡

* Since the above extracts are nearly every one of them from the Sinhalese poets, and lest the reader may therefore be inclined to the supposition that *Elu* is the designation for a so-called “poetical dialect,” the following prose selection from the introduction to the *Pansiya-panas Játaka* may not be out of place :—

අවුමාසාමින් ලී ජනකය නියාව නොවරදවා එළවෙන් ලියවු ජනක කථාව සන්පුරුෂව මුතුසාසන් විසින් කන් යොමා සිත් එලා ඇසියයුතු.

“It is proper that good people, having given their ears and bent their minds, should hear the *Elu* version of ‘The History of Lives,’ composed without departing from the method of the writer of the *Aṭṭwāwas*.”

† The following passage is from the *Pradīpikāva* : සිංහලභාසා යන නන්හි සිංහලභාෂානම් කවරයන් ?

“At the place where mention is made of the ‘Sinhala language,’ what can *Sinhala* language mean?”

The writer, after explaining why the Sinhalese were called *Sinhala* and this Island was called *Sinhala-dwīpa*, proceeds to answer the inquiry thus :—

යම්මේ මඬසවු ජනයෝ මඬගබ්බයෙන් කියනුලැබෙද්ද, එසෙසින් මේ සිංහල දෙයසවු ජනයෝ සිංහල ගබ්බයෙන් කියනු ලැබෙත්; ඔවුන්ගේ භාෂා සිංහල භාෂානම් වේ.

“As people who are natives (of a place) speak in (their) native tongue, so likewise the people of this *Sinhala* country use the *Sinhala* speech. Their language is called the *Sinhala* language.”

The above furnishes us with almost conclusive proof against the position that the *Elu*, but not the *Sinhalese*, was the ancient language of the Ceylonese. For, if according to *Gurūṭugómi*, the writer of the “*Pradīpikāva*,” both Wijayo’s followers and their language were called *Sinhala* from the period of their landing in Ceylon, it is impossible to maintain that *Elu* considered as a dialect different from *Sinhala* was “the ancient language of the Sinhalese.”

‡ නොසිත් නිමකෙලෙමි කවි හෙලදිව්බසිනි.—*Kavyamuktāhāre*.

“Have I in *Heladiv* (Langka’s) language with pleasure finished my song?”

“Lanká,” the last word contracted and added to the particle එ producing එලුව or එළු. It is however to be remarked that the first of these definitions has not only the support of grammar, but the authority of the best scholars of the day ; is apparently more correct than the second ; and that both support the view that *Elu and Sinhala are terms for one and the same language without distinction of dialects*, in that there is no difference between the two roots, since the one has reference to the nation (සිංහල^{*}) and the other to the Island (ලන්කාව) which that nation inhabits. But a question has been very frequently proposed, which has been, I believe, never satisfactorily answered : “What is the Elu language? Is it a dialect of the Sanskrit?”

We have already seen that the *Elu* was no other than the *Sinhalese* language : but the question still remains, “Is it a dialect of the *Sanskrit*?”

Though at the risk of incurring the censure of some who maintain the affirmative, I shall venture upon laying down my own humble views on the subject, counter, I regret to say, to those of many whom I respect.

Let us first inquire “What is a dialect?” It is defined by several lexicographers thus : “DIALECT, *dialectique* F., *dialectica* L., *dialetike* G., is a manner of speech peculiar to some part of the country, and differing from the manner used in other parts, yet all using the same radical language as to the substance of it.” Now, those who maintain that the Sinhalese is a dialect of the Sanskrit, do so upon the ground that many words are derived into the former from that rich and invaluable source the Sanskrit. But this is no more correct than that the Portuguese which abounds with Latin terms and the English with French are

* “The name given in Ceylon subsequent to the landing of Wijayo, from සිංහල, *lion*, and the root එ, *to destroy*.”—Turnour.

respectively dialects of the languages from whence such terms are derived. If also the premise for the conclusion under consideration be correct, we may reasonably affirm that the Sinhalese is also a dialect of the Mágahadí or Páli, for words derived from the Páli into the Sinhalese are as generally abundant as those from the Sanskrit. Indeed, the author of the “Sidatsangaráwa” says :—

“Words may be divided into three classes : (i.) වෙරුන්, purely native Eḷu words ; (ii.) සමු, words common to Eḷu, Páli, and Sanskrit ; and (iii.) බලි, words derived from the Páli and Sanskrit, but slightly different from the original by their adoption into the Eḷu.”

Upon the above process of reasoning we may well conclude that the Sinhalese is a dialect of the Sanskrit *and* Páli. But this is absurd, if on no other ground, upon a view of the definition with which we have set out. For, since the Eḷu has words of its own, and words, too, which, though bearing some affinity to, are not derived from, the Sanskrit, they cannot be pronounced to be the same radical language as to “the substance of it.”

Again, a language and the dialect of that language are not diverse, but one and “the same radical language” : *e. g.*, the *Attic*, the *Ionic*, the *Doric*, and the *Æolic*, are dialects of the same radical language, the *Greek*, and agree with each other in the general principles of declensions, conjugations, &c., but, I believe, differ from one another in spelling or pronunciation, or both—variations which, in the words of our definition, affect merely the “manner of speech” and “the manner used.” The Sinhalese is however different from the Sanskrit in more than one substantial point. A great portion of the language is not derived from the Sanskrit : the Sinhalese has but two genders, whereas the Sanskrit has three : in the former, the verbs are not conjugated as in the latter ; nor are the roots the same in both. The changes which words undergo in the Sinhalese are

altogether upon a process different from, and less certain than, that in the Sanskrit. The declensions are also different in the Sinhalese from the Sanskrit, the dual being unknown to the former, &c. If further it can be shown that the Sinhalese is capable of being written without an admixture of Páli and Sanskrit terms,* I apprehend there will be no difficulty in establishing my position, which is this : *that the Sinhalese bears an affinity to the Sanskrit, and that they are both cognate languages, derived from one and the same source, which is perhaps now irrecoverably lost.*

If, as I have once heard, it be maintained, because certain words in one language bear affinity to others of like signification in another language, that therefore the former must be and is a dialect of the latter, I fear we shall be driven to the absurdity of pronouncing the Sinhalese to be a dialect of the English,† and the Sanskrit a dialect of the Latin. For “the Sanskrit language,” to quote from Sir William Jones (*vide* his works, vol. I, p. 26), “whatever be its antiquity, is of wonderful structure: more perfect than the Greek, more copious than the Latin, and more exquisitely refined than either, yet bearing to both of them a stronger affinity, both in the roots of verbs and in the forms of grammar, than could possibly have been produced by accident—so strong, indeed, that *no philologer could examine them all three without believing them to have sprung from one common source, which perhaps no longer exists.*”

* The writer's acquaintance with the Sanskrit and Páli is indeed inadequate to illustrate this part of the subject with an example; but upon the authority of the “*Sidatsangarāwa*,” it is to be presumed that a language of which two-thirds are *nīpan* and *tasama*, is capable of being expressed without a mixture of the Sanskrit, &c.

† *E. g.*, *lop*, ලොප් ; *door*, දොර ; *mud*, මඩ ; *water*, ඩවුර ; *hour*, ගෝර ; *serpent*, සප් ; *new*, නව ; *way*, වේ ; *name*, නම ; &c.

Just so with the Sinhalese. The affinity which it bears to the Sanskrit is great, so that the conclusion is not that the former is a dialect of the latter, but that they had one common origin. This view seems to be confirmed by the opinion of Dr. Stephenson, who, in a paper read before the Royal Asiatic Society "On the Maharatta Language, on its connection with the other spoken dialects of India, and on its derivation from the Sanskrit, Persian, and other sources," says: "It was thought at one time that all the spoken dialects of India were merely corruptions of the Sanskrit; and although many words were found in those dialects which could not be referred to that source, it was supposed that those words had merely crept in by reason of the barbarism and carelessness of the speakers, who introduced them from ignorance of the correct terms. This opinion, however, lost ground as our acquaintance with the native languages increased: and it is now pretty generally admitted that those of the south of the peninsula at least are of origin quite distinct from the Sanskrit, and that they have admitted words of that language, not from a want of native terms, but from the influence of religion, all their orthodox writings being composed in Sanskrit."

Now, the Sinhalese is unquestionably an Indian dialect; and Dr. Stephenson conceives that the case is the same, though in a less degree, with the other languages of India; that in all of them the Sanskrit is grafted on an aboriginal language; and that, proceeding from the north, it diminishes in quantity as we go southwards, becoming scarcely anything in the vernacular Tamil: in the same way as in Europe the influence of the Latin, which is predominant in the south, decreases as one approaches Britain and Germany.

To the Elu language, then, which is the Ceylonese or Sinhalese, are known ten vowels and twenty consonants. The vowels are subdivided into එනු or ලෙනු "short," and ගුරු "long."

In fact, the short vowels, අ, ඉ, උ, එ, and ඔ, are rendered long thus : අ, අඞ (or ඞ), උඞ, එඞ, and ඔඞ. Each of the twenty consonants, ක, ග, ජ, ට, ඩ, ඤ,* ත, ද, න, ප, බ, ම, ය, ර, ල, ව, ස, හ, ල, except ට (some of which are otherwise written to produce corresponding aspirate sounds, but which are not here reckoned), may be so expressed as to produce all the sounds of the vowels, both long and short. Thus, take, *e. g.*, the first consonant ක. It contains the sound of අ. Render it කි, it produces the sound ඉ ; render it කු, it produces උ ; render it කෙ, it produces එ ; render it කො, it produces ඔ. So likewise are the five long vowel sounds produced by rendering ක into කා, කී, කු, කේ, කෝ. The other consonants may in like manner be varied, except the last ට, which, being immutable, and having no vowel sound associated with it, cannot be uttered without the help of a vowel sound, and it is usually expressed in the alphabet with the first vowel, thus, අට. The nineteen consonants thus produce ten times nineteen, or one hundred and ninety sounds. Add to this number the unchangeable consonant ට and the ten vowels, and we then have two hundred and one, the total number of sounds which compose the Singhalese alphabet. These, according to the author of the “*Sidat-saṅgarāwa*,” are all the symbols which are necessary for a correct expression of the EĻu ; yet we find two letters or sounds exclusively EĻu which are not included by the grammarian in the above number. They are අෑ and අඞ, and are the vowels by whose assistance the changeable nineteen consonants are rendered කෑ and කඞ ; ගෑ ගඞ, &c. Thus, by adding අෑ and අඞ and twice nineteen consonant

* The general use of this guttural sound must here be explained, since there is another dental, භ, having the same sound. භ is used after ර or ග, thus : සරභ “feet” ; සිරිභ “Buddha.” But where the ර or ග is not in the same syllable with භ, the dental should be used, as in සුරභර “gods and men,” and අභතම “last name.”

sounds which are formed by their assistance to the two hundred and one sounds to which I have already called the reader's attention, we obtain the two hundred and forty-one sounds in the Sinhalese language.

Beside the above, it must be remembered that some of the consonants have different forms producing corresponding aspirate sounds. They are not used in the Eḷu, except in expressing words of a foreign origin, and are therefore omitted in the "Sidatsangarāwa." But since they are essential to a correct expression of the Pāli and Sanskrit (languages which the Sinhalese anciently used in common with the Eḷu), and also of *tabava* words (words derived into Eḷu from either the Pāli or Sanskrit), these aspirate letters with several others which I shall hereafter enumerate are found in the Sinhalese alphabet.

The aspirate letters or sounds are the ten following :—ඛ, ඞ, ට, ඩ, ට්, ඩ්, ට්, ඩ්, ට්, and ඞ.

The Sinhalese alphabet also contains six Sanskrit vowels, ඞ, ඞ, ඞ, ඞ, ඞ, and the unchangeable : expressed with the first vowel, thus, ඞ. It is by their assistance that the Sinhalese or Eḷu consonants, which are common to both Pāli and Sanskrit, are changed into ඞ ඞ, ඞ ඞ, ඞ ඞ, ඞ ඞ, ඞ ඞ, &c.

I must not here omit to mention, that besides the above there are several Sanskrit and Pāli consonants which are inserted in the Sinhalese alphabet. They are ඞ and ඞ, Sanskrit exclusively, and ඞ, ඞ, and ඞ, Pāli and Sanskrit.

To these may be added several compound or mixed letters which are formed by a union of two consonants : ඞ, ඞ, ඞ, ඞ, ඞ, ඞ, ඞ, and ඞ.

ඞ is common to all the three languages. In Eḷu it is sounded differently from Pāli and Sanskrit. Thus, ඞ, *aṅga* (Eḷu), "horn," is pronounced more softly than ඞ, *gaṅgá* (Pāli and Sanskrit), "river." This letter is formed in Eḷu by

a union of െ and േ, and in Páli and Sanskrit by incorporating ൈ with േ. It is however, though mistakenly, supposed that its formation in the Eḷu is the same as in Páli and Sanskrit.*

ඔ (Páli and Sanskrit) is compounded of ൈ and േ, as in േඔ, *vañchá* (Páli and Sanskrit), “deceit.”

ඡ. This form, also common to both Sanskrit and Páli, although less frequently used in the former, is compounded of ൈ and ඡ, as in ඡඡ, *añja*, “anoint.”

ඤ is exclusively Sanskrit, and is a compound of ඡ and ൈ, as in ඤඤ, *prájña*, “pandit” or “scholar.”

ඈ is common to both Páli and Sanskrit, and is formed by a union of േ and ൉, as in ඈඈ, *aṭṭha* (Páli), “eight.”

ඉ is used in all the three languages, and is a contraction of ൈ and േ, as ൈඉ, *hañḍa* (Eḷu), “sound”; േඉ, *gañḍa* (Páli and Sanskrit), “fruit.” As is the case in all the compound letters used in Eḷu, this is pronounced more softly in Eḷu than in Páli and Sanskrit.

ඊ is exclusively an Eḷu character, compounded of ൈ and ඊ, and is pronounced softly as in ൈඊ, *hañḍa*, “moon.”

උ, common to Páli and Sanskrit, is produced by a union of ඊ and േ, as in േඋ, *buddha* (Páli and Sanskrit), “Buddha.”

ඌ, used in all the three languages, is composed of േ and ൈ. In the Eḷu it has the soft sound, as in ඌඌ, *aṁba*, “mango”; in Sanskrit and Páli hard, as in ඌඌ, *aṁbu*, “water.”

ඍ, common to Páli and Sanskrit alone, is formed by a union of ඊ and േ, as in േඍ, *dvaya* (Páli and Sanskrit), “two.”

ඎ is peculiar to the Sanskrit, and is a compound of െ and േ, † as in ඎඎ, *añṣa*, “side.” I may add to the above േ, common to Eḷu and Páli, and formed of േ and േ, as േඎ, *kalu*, “black.”

All the characters which are comprehended in the 241 already enumerated are used in the Páli and Sanskrit, with

* *Vide* ඵඵඡඡඡ, Eḷu Prosody, p. 1.

† In Eḷu as in Páli െ “corresponds with the French *n* in *mon*.”

the exception of ඌ and ඌ, which are peculiar to the Eḷu ; ூ, which is used only in Eḷu and Páli ; and ௃ and ௄, which, though used in Páli and Sanskrit, are therein pronounced long, as ௃ and ௄.

It is not a little curious to find that the sound of *f*, utterly unknown to the Sinhalese, and so difficult to be pronounced by the natives, is to be found in the Sanskrit. See *Sarasvatīvyākaraṇe*.

A brief elucidation of the so-called Sinhalese alphabet leads me to a consideration of the prose writings of the Sinhalese, which I confess are not so many and varied as their poetical works. Nor indeed are they so recent as the last-mentioned.

In prose, as in poetry, nothing is more to be desired than clearness and elegance of expression. What that clearness and elegance are can be decided by none but those intimately acquainted with the language ; for that which is elegance in the English is the very opposite in the Sinhalese. To enter into a detail of the rules of composition is indeed to translate the “*Sidatsangarāwa*” into English. But since the object of the writer is to give the English reader a sketch of the distinguishing features of the Sinhalese literature, I may as well call his attention to the *sine quā non* in Sinhalese composition, *the necessity of introducing one’s entire thoughts and ideas on a subject into one unbroken sentence*. In this respect the Sinhalese is as different from, and as much opposed to, the English, whose “soul” is “brevity,” as any two things can possibly be. If the reader will take the trouble to examine some of the prose writers, he will find a great similarity between their writings and the superabundantly exact style of an English conveyancer, or the tedious legal phraseology of an Act of Parliament.

From my limited reading I have been able to divide the prose compositions into but three classes : (1) the simple or common, (2) the elegant, and (3) the refined.

(1) The first, which I shall call the “common,” is that without ornament, the elegant style of an English scholar. Of this species the following from the *Sidatsangaráva* is an example :—

පහන තඹරන්හි බමණ බමරමුළු තමඟ පිරියෙස් සරණ තිමිරබලල්වලා.

A swarm of bees, which in the morning hover over (in) the lotuses, are like the offspring of darkness walking in quest of their parent of darkness.*

(2) Of the second, which is the Sinhalese decorated with all the glittering ornaments of compound words, comparisons, &c., and which in English may be denominated “the verbose,” the following is a specimen from the introduction to the *Bauddha Satakaya* :—

ශ්‍රීමජ්ඣිමනිකායෙහි සකල විද්‍යානිධානවූ ගෞඩදෙශයෙන් ශ්‍රී ලංකාවේපයට පැමිනි තඹවකකරණ කාව්‍යනාටකාදී සමස්ත ශාස්ත්‍රයෙහි නිපුණ කාතකයනගොත්‍රසමූහන ශ්‍රී රාම චන්ද්‍රභාරතී නම් බ්‍රාහ්මණ පණ්ඩිතොත්තම කෙනෙක් ශ්‍රීසංඝ බොධි ශ්‍රී විජයබාහුපර්වෙණ්ඩිපති ත්‍රිපිටක වාගිශ්වරවාය්‍ය ශ්‍රී රාහුලස්ථිරපාදගන්වහන්සේ කෙරෙන් ත්‍රිපිටකධර්මය අසා ඉගෙන ශාසනානිප්‍රසන්න විත්ත ඇතිව පරමවිශුච්ඡුරානිය සංකතියෙන් භක්තිශතක නම්වූ බුබුසෙනාත්‍ර ප්‍රකරණයක් කරන්නාහු “ඥානං යසං සමස්තවසතුවිෂයං” යනාදී ශෙලාකයන් රචනාකලෝ.

Translation.

Sri Rámachandrabháratí, an illustrious Bráhmin, born of the family of (Kátya), learned in all the rich sciences of logic,

* This sentence conveys the idea that bees are inactive at night, and that their activity upon the absence of darkness is such, that it may be almost supposed that these children of darkness are in search of the night—their lost mother.

grammar, poetry, music, &c., having arrived in the beautiful Island of Lanḳá (Ceylon) from the treasury (seat) of all science (language) Gauḍa in the prosperous Jambuddwīpa,* and having inquired and learnt the Tripiṭaka doctrines from the Reverend and Venerable Srī Ráhula Sthavirayo—Supreme Master of the Tripiṭaka doctrines and Principal of the temple Srī Saṅgabodhi Srī Wijayabáhu—and being (also) greatly pleased in mind (delighted) with the religion (or those doctrines), hath with supremely sincere and greatly devout faith paraphrased *Ñānaṃ Yasya Samasta Wastu Wishayaṃ* † and other stanzas of the book composed by himself in praise of Buddha, and called *Bhaktiṣatakaya*, “A Centum of Faith.”

(3) The third is what Europeans call “the bombastic” : and so great is the difference of taste between Europeans and the Sinhalese on the subject of composition, that I had almost said the rules of English composition may be used with the rule of contraries to attain a good native style. The Sinhalese regard the bombastic as the best ; and the following from the *Dévaḍúta sūtra sanné* will serve as an example :—

පවුරු පදනම් දෙරට අටළු වාසල් ගෝසුර හිමල් සෙල්
 විසල් තුල් පළහෙල ලකළ සුළුසා මහසා පෙළිනුදල යුවල
 දළදළිනුදල කොපුලනින් වගළ නොමද මදසුවද පබද
 කළ දළින් බමණ මත්බමරකැලන් කන්තලිනි දුරුකළ
 ගුගුළ දලවලවලින් හා මහගු තුගු තුරග පෙළ අසුර බල
 හළ පුවළ ඔලමොල බලමුලින් යුත් සිවුරගසෙනගින් හා
 සවිසිරි සපිරි පවර කුවෙරරද අලකපුර අසුරු නිවන්ජන
 ඉවන්කළ සැවන්සුර වෙත්හි දෙවිරම් වෙහෙර වැඩවසන
 බුදුන් විසින් මහණුන් කැඳවා මෙසේ වදාරණලදි.

* *Gauḍa* stands for Calcutta, and *Jambuddwīpa* for one of the four quarters of the globe, being the *terra cognita* of the Buddhists, a part of Asia. The *Tripiṭaka* doctrines embrace nearly the whole of Buddha's sermons.

† This is a part of the first stanza of the work called “*Bauddha Satakaya*,” one of the school books of the Sinhalese.

At the temple called Jétawana, in the city of Sēwet [like unto the city of Alaka, the seat of the powerful king Kuwera],* full of prosperity, teeming with the wealthy and possessed of armies composed of soldiers (foot), horsemen, elephant-men (cavalry), and cars containing men (artillery); numbers of brave and intrepid troops able to withstand the demi-gods; beautiful fleet horses; splendid elephants with huge double teeth, and which with their spreading ears remove swarms of bees that hover over them, invited by the tempting odour of the matter which greatly oozes from their (elephants') cheeks; splendid rows of beautiful white spacious squares of sizes (small and large); hills as large as the Himálayas; and gates, entrances, porticos, towers, batteries, and fortresses (at the aforesaid temple of the aforesaid city)—did Buddha, presiding, speak as follows to the summoned priesthood.

Besides the above division of prose compositions into the “simple” or “common,” the “elegant,” and the “refined,” they are susceptible of another classification into the “pure” and the “mixed.” The first comprehends the pure native Sinhalese, and the second a style compounded of Sanskrit and Páli words derived into the Sinhalese. Of the first species the first and the third sentences above extracted are examples; of the second, the second from the *Bauddha Satakaya* is a specimen.

Turn we next to the poetry of the Sinhalese, a department of literature cultivated to great perfection, if perfection could indeed be attained in any human performance. That the Sinhalese poets have over-excelled the great and celebrated Indian authors is perhaps not true; but that there are a few Sinhalese works which equal in merit

* Kuwera, in the Indian Mythology, stands for the Grecian Plutus. He is the lord of wealth and master of nine inestimable treasures. His city, called Alaka, is situated on Mount Kailása, and inhabited by Yakkhó, demi-gods.

some at least of the Sanskrit works, I shall venture to assert. The *Selalihini-sandésé* of Srí Ráhula Sthavira, mentioned above, may indeed be cited as one which is by no means inferior in point of imagery to the celebrated “Meghadúta” of Kálidása, translated into English by Mr. Wilson in 1813.* But I must not omit to mention that, unlike the Sanskrit, which can be procured from India, the

* නනවිශාමා සිඛර දහනා පකඛිමොධරොඡ්ඡි
මධොක්කොමාවකිනහරි භේද්‍රෙක්කොතිමන නාභි
ත්‍රො භේකාඳුදලසමමනා සොනාකනමුසානාහා
සානත්‍රසාද්‍රව්‍යවිච්ඡිතයෙ සෘජිරඳෙසව ධාතුූ.

The above is from the “Meghadúta,” p. 88, and the following, from Mr. Wilson’s beautiful translation, with his notes, will give the English reader a faint idea of the writings referred to in the text :—

—————“a beauteous creature stands,
The first best work of the Creator’s hands ;
Whose slender limbs inadequately bear
A full-orbed bosom and a weight of care ;
Whose teeth like pearls, whose lips like *bimbas* show,
And fawn-like eyes, still tremble as they glow,” &c.

NOTE.—“*The first best work of the Creator’s hands*,” literally the first creation of Bráhma, and “*first*” may refer to time or to degree ; it most probably here means “best.” So Milton speaking of Eve—

“Oh ! fairest of creation, last and best
Of all God’s works.”—*Paradise Lost*.

“We now enter upon perhaps the most pleasing part of this elegant little poem—the description of the Yakshá’s wife. I may perhaps come under the denomination of those who, according to the illiberal and arrogant criticism of such a writer as a Mr. Pinkerton, prove ‘that the climate of India, while it inflames the imagination impairs the judgment,’ when, standing in very little awe of such a poetical censor, I advance an opinion, that we have few specimens either in classical or modern poetry of more genuine tenderness or delicate feeling.”—*Wilson*.

Sinhalese or EĻu works are few in number; and this arises from the grievous loss which they have sustained from the invasions of this Island by the Malabars, and from the general destruction of literary records during several reigns. At least, it is difficult to account for the share of civilisation possessed by the Sinhalese prior to the age of Vídágamá and Totāgamuwa, much less for the great talent and learned research displayed by those *literati*, without supposing that many valuable manuscripts which once existed are now lost. But, however few their works, the Sinhalese have sufficient to prove that they do not deserve to be disparagingly spoken of by Europeans—the majority of whom, whatever may be said of their superior powers of intellect, can never appreciate those beauties of native style which one thoroughly acquainted with the native idiom, the genius of the language, and the religion of the Sinhalese, finds in the EĻu works. The Sinhalese scholar finds, indeed, in the writings of his country's poets the unmatched sublimity of a Milton, the flowing gracefulness of a Pope, and the sparkling wit of a Goldsmith. Of course the English reader must understand the comparison here instituted with reference to the idiom of expression and the genius of the language, the habits of nationality, and the peculiarities of the religion of each class of writers. Perhaps it is difficult for an European, accustomed from his infancy to the peculiar expressions of his language, the numbers of his poetry, and the national and religious feelings which they convey (all which dispose his ear and bias his judgment to give preference to his own language), to understand what is here attempted to be shown—the existence in the Sinhalese of works which may be compared to those of England, *from the sameness of the effect which they severally produce upon the minds of the two classes of readers*. Perhaps also, for the same reason, a native is

incompetent to form a correct opinion on this subject.* Be this as it may, it cannot but be admitted that in the mind's eye of one who can enter into the spirit of both the languages, the Elu is not a language which should disparagingly be spoken of.

Apart from the mere beauties of composition (which can only be appreciated by an intimate acquaintance with a language), I have occasionally found in the Sinhalese books, as in all Oriental literature, a vein of thought exactly similar to that of the Western writers. Who, for instance, could read the following from *Subhásité* of Alagiya-wanna Mohottála and would not be struck with the sameness of idea, if not the exactness of their symbols?

* The writer once explained Goldsmith's beautiful lines "On the death of a mad dog" to several of the most intelligent Sinhalese scholars of the present day, and instead of hearing from them what Mrs. Barbauld thought of "this specimen of Goldsmith's poetical powers," that it "was wonderfully pathetic, and that it was sweet as music and polished like a gem," the writer was told by the Pundits that they could not perceive the wit of being informed by a poet "that his song could not hold them long, if they found it *wondrous short*."

In like manner, the English reader will indeed fail to perceive the gay and smiling imagery, and the smooth and flowing numbers of the two following stanzas, the last composed under the circumstances which I shall here briefly detail. A native poet, who was rather deficient in personal beauty, conceived an attachment to a lady of great attractions. A marriage was proposed, but was not concluded for some time. About this time one of his friends, wishing to rouse the dormant powers of the enamoured bard, sent him an extract of the following lines from the "Kusajátaké," wherein the beautiful princess Pábbáweti, indignant at the deformity of her husband, King Kusa, is said to have exclaimed at the eve of her separation from her royal consort:—

යමෙක් විසුළුව ඉ	ද
පනානම් රුසිරිනි ල	ද
අවැඩම මස නොම	ද
වැඩක් වූයේ ඔහුට කිකල	ද

On Criticism.

“One Science only will one genius fit.”

“ලොවින් එකෙක් එකදේකට වෙයි සමත.”

I need not remind the reader, however, that to render the English literally into the Sinhalese is difficult, if not impossible. And the absence of the same pithy expressions in both the languages, and the difference of idiom between the two, must necessarily render a literal translation little less than ridiculous. But if the well-conceived and understood idea of an English sentence be conveyed in the Sinhalese suited to the peculiarities to which I have already alluded, the translation thus made will serve the purposes of a literal one. Of this the following from Goldsmith

“If one were deformed, and yet longed for a beautiful woman, when did any good result to him, but inordinate ill!”

To the above the poet's answer was not only pert, but what was more (to use the words of Mrs. Barbauld), “it was wonderfully pathetic—sweet as music, and polished like a gem.” He knew that this was a biting sarcasm upon himself, and therefore was sarcastic in return without being offensive. He appealed to the sequel of the very “Kusajátake” to prove the illiberality of a sentiment expressed in the heat of anger; and referring to Pábáweti, who afterwards *ex necessitate* and voluntarily adored her previously-loathsome husband, and also to the alleged circumstance that their reunion resulted in the loss of the king's deformity by the power of a miracle, the poet answered:—

එකී බස බොරු	වි ය
එහිමි අදහස සිදු	වි ය
සළු ඉසුරුමත්	වි ය
එදා දඹදිව මගුල්ගෙය	වි ය

“That dictum was incorrect; for the lover consummated his wish and attained prosperity, and Dambadiwa did on that day present the appearance of a festive house.”

(one of the exercises of the writer) will serve as an example :—

On Woman.

When lovely woman stoops to folly,
And finds too late that men betray ;
What charms can soothe her melancholy
What arts can wash her guilt away?

රුසිරු ලිය ක් සලෙලුන් පියොවට අ සුව
නැවත කල ක් ගොස් දනගණ් ඉන් ප සුව
පැමිනි එදු ක් තමහට වරදින් මු සුව
කුමන දෙය ක් කර සිත කරණිද සුව

The only art her guilt to cover,
To hide her shame from every eye,
To give repentance to her lover,
And wring his bosom—is to die.

වර ද සමග ඇගෙලප්ප් වැසීම ට
තව ද විපිළිසරවීමට හිමියා ට
නොඉ ද ලොවේ නෙදනන් සියැස හමුව ට
වෙන ද ඇති කරුණ මියයාමය ඇ ට

Whilst on the subject of translations, it is perhaps not amiss to introduce into these pages one or two remarks upon the subject of *the translated Holy Scriptures*. It indeed behoves everyone who feels assured that the religion of the Bible will, in process of time, become the universal faith of the Ceylonese, to have the Scriptures translated into correct idiomatic Sinhalese, so that this Book of Books may prove to the Sinhalese scholar what the English version is to the English,—in the words of Dr. Lowth, “the best standard of the English language.” That any of the Sinhalese versions now extant are as correct as they can or ought to be, I am not prepared to say. Nor, if called upon to pronounce an opinion with reference to the style adopted, can I much hesitate to decide in favour of the old version in preference

to the so-called “Kotté version.” I shall not, however, here pause to consider the disputed question regarding the pronouns තෝ (*tó*) and ඔබවහන්සේ (*obawahansé*); nor indeed do I blame the pious and learned gentlemen who introduced the innovation, believing as I do that they were actuated with the best of intentions. But that the simplicity so much studied by the new translators after “an elegant English style” is opposed to the genius of the Sinhalese language, I trust I have already shown by exhibiting the difference between English and Sinhalese compositions. I admit that long parenthetical clauses and laboured periods should, if possible, be avoided in the translation of the Scriptures, and that clearness of expression should be the first endeavour of any writer or translator. But I do indeed object to one or more concurrent ideas which can be well and elegantly expressed in one continuous sentence being broken into two or three periods, either in writing in, or translating into, the Sinhalese.

I shall here extract a few paragraphs from a paper written by me some time ago :—

It will be perceived that in the English version the first three verses of our Lord’s Sermon on the Mount (St. Matt. v. 1–4) comprise one period :

1. And seeing the multitudes, he went up into a mountain : and when he was sat, his disciples came unto him :
2. And he opened his mouth, and taught them, saying,
3. Blessed are the poor in spirit, for theirs’ is the kingdom of heaven.

The Kotté translators have divided the above into four complete sentences ; and that, too, in a language whose very elegance consists in the introduction of as much matter as one can into one continuous sentence.

1 { පසුව ඔහු සමූහය දැක කඳකට නැගී එහි ඉඳගතනය
ඔහුගේ ගෝලයෝ ඔහු ලගට ආවාය.

2. එකල ඔහු සැබ්බේ නගා මෙසේ ඉගැන්නුවාය, ඒනම් :—
 3. සිතින් දිලිඳුන්ට සමගීර්ණය අසිතිනිසා ඔවුන් ආසිඵාදලත්තෝය.

Such a style, especially in the Bible, is calculated speedily to impoverish the Sinhalese as a language, and is unfit for any composition above juvenile books or little tales for children.

* * * * *

Without omitting any of the words above given, the following would be preferable :—

1. සමුහය දැක ඔහු කන්දට නැගී එහි ඉදගන්වාසින් පසු ඔහුගේ ගෝලයෝ ඔහු ලගට ආකල 2. සැබ්බේ නගා ඔහු මෙසේ ඉගැන්නුවාය.
 ඒනම් :—3. දිලිඳුන්ට සමගීර්ණය අසිති නිසා ඔවුන් ආසිඵාදලත්තෝය

* * * * *

Nor, as far as we can be guided by the English version, does the above appear to us to be a correct translation. පසුව has no equivalent in English. සමුහය is singular, and not “multitudes.” සමුහයා දැක in the old version is preferable to the above, though rendering the English literally it should be සමුහයන් දැක. “When he sat” conveys “*after* he was sat”: and the Evangelist evidently wishes us to understand the period of time when the disciples came—“when he was sat, the disciples came unto him.” The Kótté version, however, does not give one an idea as to *when* the disciples came. According to the distinctly separate periods into which the above passage is rendered in Sinhalese, it is perhaps not unreasonable to suppose that the disciples came unto Our Lord *before* he was sat. ලගට is “near”; but “unto” required වෙත. A person may come *unto* one, and yet not come *near* him. ආවාය for the third person plural is ungrammatical: it should be ආවෝය. Here we find a change of expression by the translators, who, in the controversy regarding *tó* and *obawahansé*, object to වනන්සේ, upon the plausible ground of a violation of the prohibition solemnly given in Revelations xxii. “Opened his mouth” is rendered සැබ්බේ නගා, which means “tuned” or “sounded.” To such an expression we do not positively object; but සැබ්බේ නගා is incorrect: it should be සැබ්බේ නගා. But wherefore change the English expression, which is in the Oriental idiom, and foreign to the

Occidental? මුවෙන් නොබැන is a common but idiomatic Singhalese expression, and means “without abusing by (word of) mouth.” Why then not render “opened his mouth” literally as in the old version, මුඛෙ ඇර? Or, why not shorten the expression by still keeping to the original words and the idiom මුඛයෙන් (Sanskrit) or මුවෙන් (Singhalese)? Buddha is said to have “opened his lotus mouth” (මුවෙහි සිසුම් පොබසා), and to have “inquired” from the priests “in what conversation they had been engaged.”

කුමිනම් පුවහ කී නි
සතුව උතුරැයි විනාලේ මු නි—*Guttile.*

එකල is not the Sinhalese for the first “and” in the second verse ; nor was there any necessity arising out of any supposed difference of idiom to omit in the Sinhalese the pronoun “them” after “taught.” ඔවුන් ආසිඞ්ඳ ලක්තේය is, strictly speaking, ungrammatical. According to the “Sidat Sangarāwa” it should be ඔවුහු, the nominative case. සිතීන් දිළිඳුන්ට, though not wrong, is better expressed සිතීහි දුන් ඇත්තරුන්ට.

Being poor in heart (or spirit);
 හිත්හි දුක්ඵලත් වෙලායා.—*Miripenné.*

But lest it should be supposed that I have carefully selected the above passage, I shall turn to the very commencement of the new version, where at least for divers reasons one expects greater accuracy than in the “parenthetical clauses of St. Paul”:—

Kotté Version.

In the beginning God created the heaven and the earth.—I. Gen. i.

ඳෙවියන් විසින් පටන්ගැනීමේදී ස්වර්ගයන් පොලවන් මැවුවාය.

In the first place, the above passage is inelegant in construction. In the Sinhalese, as in several languages of Europe, the governing words generally follow the governed, and the former precede the verb. This is a rule which is not to be acquired by consulting grammars, but from a competent knowledge of a language, by reading and observation. Take, for instance, an example from “*Sidat Sangarāwa*,” “a book of the highest possible authority,” and which I shall have to cite hereafter to test the grammatical

accuracy of the sentence before me—දහම්, නරදම්සැරිත්‍රවිසින් දෙසිනි—"The doctrines were preached by Buddha." But not, as the Sinhalese of the first verse in Genesis above given, නරදම් සැරිත්‍රවිසින් දහම් දෙසුවාය.

The words දෙවියන් විසින් මැව්වාය, "created by God," are ungrammatical, and therefore incorrect. If the translators were conversant with the Sinhalese language, they would not only have shortened the sentence by the omission of the preposition විසින්, but would also have rendered the English sentence literally, and word for word into idiomatic and grammatical Sinhalese. The word විසින් requires a passive termination in the verb මැව්විනි, as in the example already quoted from the "Sidat Sangārāwa"—දහම් නරදම්සැරිත්‍ර විසින් දෙසිනි. * * *

That is to say, the expression "God created the heaven and the earth" is at present translated "By God the heaven and the earth created," instead of "By God the heaven and the earth were created."

*

*

*

*

To return, however, to the subject from which we have digressed. The Sinhalese books abound in pastorals and descriptive poetry, which are divided into many (nearly thirty-five) heads, all which comprise the several species of poetry known to the English. Besides the legitimate Sinhalese poetry there is a species called the එළුශ්ලෝක (*Elu ślōka*), of comparatively modern introduction.

The last-named follows the rules of Sanskrit Prosody, and is written in a variety of measures with which that beautiful language abounds: it will suffice to give two examples:—

No. 1.—*On Night.*

සඳකැන්මි සඳකන් උර බොහු බලා රැබුදිගැස් සිත්තෙසින්
කොඳදන්පා හසිමින්තමස්ගමගුරන්සොල්වාසපත්වත්සෙදින්
සැවරැස්තමිණ රත්වලා රතඹරන් ගන්මින්දුවන් ඇ ලී
තුරැරැස් මිබිදු වන් ඉසිගියරිදි තුන්වන් දුමු සේකර.

When the nocturnal spirit, seeing the goddess of the evening sip the honey of the moonbeams, fastly and indignantly approached (the latter) exposing with her mirth her flowery teeth, and waving the iron staff of night; the evening fled indeed with her scarlet jewel of a sun, and the crimson mantle of a scarlet cloud: the remnants which she left behind—a silver salver and the honey-drops which it scattered—illuminated into the moon and the spangled stars.

The above selection from the *Gangáróhané* is composed in the *Mattébhavikrīḍita* tune,* and comprises:—



anapæst, a dactyl, cretic, tribrach, molossus, bacchic, short and long.

No. 2.

The following, one of the concluding stanzas of a beautiful little poem, “A Critique,” upon the work from which the last has been selected, is from the pen of a celebrated living author named *Miripenné*:—†

* The rule, which is the following:—

සහරන්මාලතිනිත්‍රයොදයයි: මීමනෙහිවික්‍රිවිතං.

— — — — —; — and —

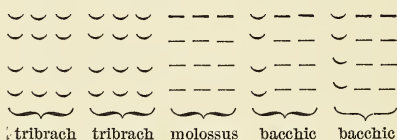
exemplifies itself; “an anapæst, a dactyl, a cretic, a tribrach, a molossus, and a bacchic, ending with two letters, of which the last either long or *al*, and with a pause at the end of the 13th syllable, compose the species called *Mattébhavikrīḍitam*.”

† This talented and venerable priest is a resident of the Galle district. As a Sinhalese poet he is unrivalled at the present day. Some of his earlier productions, quite of a piece with Cowper’s “John Gilpin,” were burnt by the writer, as they were a source of great annoyance to an individual who was the hero of the tale. There are many persons, however, who had committed the whole poem to memory; and I believe it is by no means impossible still to reclaim it from the Destroying Angel of time. His miscellaneous writings comprise two volumes, and are a valuable addition to the Sinhalese classics.

හොඳ හොඳ හපනෙක්වාමයි කියාලා පසැස්මි
 ම ද මදවරදක් නැත්වු දෙයක් දැන් කොසින්දයි
 න ද හඳ වැහෙනා දුල්පුල් සහස්පත්ති දණ්ඩේ
 න ද කොරහැසිතිබ්බා ඇසිපෙණෙන්වත් නොමැද්දේ.

I do indeed esteem him as a clever writer : but what is there free from fault? For do not you see even in the lotus (*nelumbium speciosum*), whose glowing flower is so sweet, that its stalk is full of thorns?

The metre and construction of the last are founded upon the rule called *Málini*.* In this species of poetry, as in the above stanza, every line must not only contain the same number of short and long or *al* sounds,† but those several sounds must uniformly correspond in all the four lines. Thus each of the lines in the above selection contains fifteen sounds, of which seven are either long or *al* and eight short; and they are uniform.



It must however be borne in mind that in this species of poetry the last sound or syllable must always be long or *al*. This distinguishes the *Elu ślóka* from the real Sinhalese poetry, which may end with either a short or long sound, and need only have, except in one or two

* The rule of *Málini* versification is the following :—

නනමය යසුන්යං මාලිනිහොතිලොකෙ:

“Two *na-gana* tribrachs, one *ma-gana* molossus, and two *sa-gana* bacchie, with a pause before and after the eighth letter, comprise the *málini* versification.” The very rule will serve as an example.

⌣ ⌣ ⌣ ⌣ ⌣ — — — — ⌣ — — — —

නනමයයසුන්යං|| මාලිනිහොති ලොකෙ:

† In Sinhalese prosody a long letter is equal in quantity to an *al* consonant, together with the vowel by whose assistance that අල් letter is sounded; *vide infra*.

species, an equal number of sounds ; regarding a long sound or the syllable of an අල් sound as being equal to two short ; as in

සමනා ස් මුනිඳු පිරිනිවි චස පටන් ල ද
 දෙදහ ස් පසලොසක් අවිරුදු පිරුණුස ද
 දියගො ස් පැතිර බුවනෙකබුජ නිරිදුස ද
 පිරිව ස් තුණෙහි සිරිලක රජබිසේල ද

Budugūṇa Alankāré.

Upon the completion of 2015 years from the era of the death of the Omniscient Supreme Intelligent (Buddha) ; and three years since the installation into regal office, in prosperous Laṅkā, of King Buwaneka Báhu of worldly renown :—

— — — — — = 14 short and 2 long.
 — — — — — = 12 do. 3 do.
 — — — — — = 16 do. 1 do.
 — — — — — = 14 do. 2 do.

We must get $\left\{ \begin{array}{l} 14 + (2 \times 2) = 18 \\ 12 + (3 \times 2) = 18 \\ 16 + (1 \times 2) = 18 \\ 14 + (2 \times 2) = 18 \end{array} \right\}$ an equal number of sounds.*

It will be perceived from the above that a return of the same music in all the lines is not essential to Sinhalese poetry, although it would greatly add to the solemnity of compositions. The writer had been successful in this in the following elegy “To the memory of a friend” who lately met a watery grave :—

සි න බැති මිතුර එන මග බලමි න්න
 ස න වෙත නොවතොර දුක සැප අහ උ න්න
 අ න රට ඔහු මර අසලදි වැලිපැ න්න
 ග න මරු අපසොර නොදැකමි අපෙ ගි න්න

Whilst watching the return of the friend of my heart (and) inquiring from people after his health, the Angel of Death hath at Welipenna snatched him away by stealth, unmindful of our grief !

* To the Sinhalese is known poetry of different numbers but uniform in all the four lines. I almost think of this species the numbers of sounds or feet vary from two to twenty-eight.

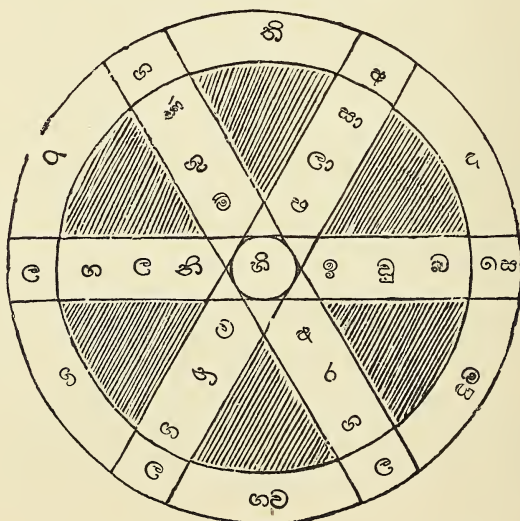
I have said that, except in one or two species of poetry, a stanza had an equal number of sounds in all the four lines. Of the exceptions the short common metre is one; but I cannot find any rule for its construction. From observation, I have however clearly ascertained that the first line consists of nine sounds, the second eleven, the third nine, and the fourth fourteen.

Example.

ගනගුමිති අරග ල
අසාලා එති වනගල
සෙබඩුගුති නිලගල
රගති අදසෙම දුලව ගලගල.—*Kavminikoḍḍala.*

The peacocks with their mates in the mountainous forest hearing the din of tumultuous torrents, and glistening (with beauty), freely play about from hill to hill.

() () () () () () ; = 9
 () () () () () () = 11
 () () () () () () = 9
 () () () () () () — = 14



Although out of place, I must not here omit to remark that the above stanza is so composed as to be used in the diagram without the repetition of eight of the letters found in all the lines.

Besides the above and the blank verse (of which I shall treat hereafter) there are three or four others, as far as I can remember, which have an inequality in the number of sounds or feet in the four lines of a stanza; and they are of a modern introduction—at least I suppose so, having only met with a few in two of the modern poets. Dunuvila Gajanáyaka Nilamé, and Kirañbé Terunnánsé have both adopted them in their works. They are very pleasing to the ear, besides being in one respect similar to the Latin, in that it is permitted in the latter to place the two syllables of a word in two lines—a license neither permitted in the English* nor so ‘ludicrous’ in the Sinhalese as it would seem if introduced into the former language. From *Kirañbé* :—

කොමල සුපිපිසර සදි	සා...පද
සු ග ල මලවිරද තුටුකර නොල	සා
නි ම ල කතකපල විල	සා...දිගු
ල ක ල ඇඟිලිපෙල දිලි පදසර	සා

* “Can anything give us a more ludicrous idea than the practice of the ancients in sometimes splitting a word at the end of the line and commencing the next line with the latter part of the word? This must have been nearly as ridiculous as the following English verses in imitation of this absurd practice:—

Pyrrhus, you tempt a danger high
When you would steal from angry li-
oness her cubs, and soon shall fly
inglorious;

For know the Romans, you shall find
By virtue more and generous kind-
ness than by force or fortune blind,
victorious.”—*Walker*.

Also : Gallicum Rhenum, horribilesque ultim-
osque Britannos.—*Catullus*, Od. 11, 12.
Labitur ripa, Jove non probante, ux-
orius amnis.—*Horace*, Od. 1, 2, 19.

Another species, also of modern introduction into the Sînhalese (probably from the Tamil), is to be found in several works of the elegant poet from whom I have already quoted, Kîrambe Terunnânsé. This has eleven feet in the first, second, and fourth lines, and twelve in the third, in which, as well as in the other line, the cœsural pause falling at the end of the sixth foot, or syllabic instant, renders the stanza very sweet and elegant. It is also remarkable that in this species the third line does not rhyme with the rest. The following is from the beautiful poem called *Kânchanadé-vikatáva* :—

සසලප නැති : සඳ ලෙසේ
දෙස කිසි නැති : එදිගැසේ
දසබල දමි : අසන විලස
එතැන් පත්ව : සිට මෙසේ

The female without blemish, like a moon without the hare's shadow, having thus reached the place to hear Buddha's doctrines :—

$\cup \quad \cup \quad \cup \quad \cup \quad ; \quad \cup \quad :: \quad \cup \quad \quad \cup \quad ; \quad \cup \quad \quad - = 11$
 $\cup \quad \cup \quad \cup \quad \cup \quad ; \quad \cup \quad :: \quad \cup \quad \quad \cup \quad ; \quad \cup \quad \quad - = 11$
 $\cup \quad \cup \quad \cup \quad \cup \quad ; \quad - \quad :: \quad \cup \quad \cup \quad \cup \quad ; \quad \cup \quad \cup \quad \cup \quad \cup \quad = 12$
 $\cup \quad - \quad ; \quad - \quad \quad \cup \quad :: \quad \cup \quad \quad \cup \quad ; \quad \cup \quad \quad - = 11$

The following is also from the same writer :—

මෙක් අම පිරි : සස කමල්
සත් සහගස : සෙවි නිමල්
යුත් සවණක් : කිරණ තරඟ
නමදිම් මුනි : පියුම් විල්

I do bow unto Buddha, like unto a lotus pond, full of the water of benevolence and the renown of lotuses, frequented (attended) by swans, like unto the purely virtuous priests, and having waves of six-coloured rays :—

$$\begin{array}{lcl}
 \text{—} : \text{) } & \text{) } : \text{) } & \text{) } :: \text{) } \text{) } : \text{) } \text{ — } = 11 \\
 \text{—} : \text{) } & \text{) } : \text{) } & \text{) } :: \text{) } \text{) } : \text{) } \text{ — } = 11 \\
 \text{—} : \text{) } & \text{) } : & \text{ — } :: \text{) } \text{) } \text{) } \text{ — } \text{) } \text{) } : = 12 \\
 \text{) } \text{) } : \text{) } \text{) } : \text{) } & \text{) } & :: \text{) } \text{ — } : = 11
 \end{array}$$

“Blank verse,” which is called භී *gí*, though known to the Sinhalese,—as indeed it was the species of musical composition with which many nations commenced poetry in the early ages,—is not, however, in use now. Nor are there any correct books to ascertain the rules of its construction. The *Elu Chandasa*,* the only work of its kind, is found so incorrect, owing, probably, to the errors of ignorant copyists, that with the assistance of four copies procured from different parts of the Island, and with the living aid of two Sinhalese scholars, I have been unable to obtain the information I desire. But I may venture to state, that of *gí* there are nearly fifteen species, differing in quantity from each other. The number of sounds do not, however, altogether exceed 44.† The following are examples :—

සරණ නඹර වරලස	= 10
සෙවෙලවලකර අරියන	= 11
රදුව පෙර කලවමන්	= 10
කුසනිරිඳු නොසැමෙලේ	= 10 = 41

King Kusa forgot the indignities which had been previously offered to him by the princess upon her prayers at his lotus-like feet, covered (leaved) with her *sevel* ‡ like flowing hair.—*Kusa Játaka*.

මහද ගඳකිළි කරු	= 9
සවිනේ ගෙවා දත්තට	= 11
දුහුනන් දැනුම් සඳහා	= 11
කරණෙම් සිදත්සගර	= 11 = 42

* Since writing the above I have met with another work on versification, called *Svabhāsa Alaṅkāraya*, from which it will be perceived that I have already presented the reader with a specimen in a previous note. It is supposed to be a translation into the Sinhalese of a Sanskrit work called *Dandiya Alaṅkāraya*.

† We ought not to omit another species of poetry called සැහැලි *sēheli*, and compounded of “blank verse” and “rhymes,” and which, perhaps, to avoid repetition, we may well consider hereafter (*vide infra*).

‡ The Sinhalese poets have frequently compared the flowing hair of a female to the floating masses in the water called සෙවෙල (*Vallisneria octandra*), the *Elu* form of සෙවෙල in Sanskrit.

Having made my heart the residence for him who knew the end of all things, I compose the “*Sidat Sangaráva*,” in order that the ignorant may be instructed.—*Sidat Sangaráva*.

පැලඹි කල්පහස	= 9
බඹලොවිනා මහන් හුදු	= 11
පිරිහුනු හා රජනෙන්	= 11
අන් දනනකුරු හා කෙවදන්	= 13 = 44

Even the great beings who came from the Brahama world have, enticed by the allurements of love, lost all the prosperity of kingdoms : how much more then (can we say of) other people like unto little tender plants ?—*Elu Chandasa*.

Although I have given the above in four lines, each verse is properly written in two. Thus :—

බලතෙක්දෙස් විලස් නිදසිදු වන් වණනනන් ||
පබවතු නෙවිලස් හා පවසමිලයි මෙවි—
ඇය රුසිරු සරණතල තඹර නියරුස්නෙන් ||
සිනා ගතෙවි තඹරට සියහ මුහුලස පානා—
ඇය මනදහ දහ දුවන් විමනැන් වදනා ||
වියොවගට දුලු කල් යුවල වැටුප් පුවල හල—

(They said) Indra alone could (with his thousand eyes) behold, and Ananteya (with his thousand mouths) alone could expatiate upon even a portion of Pabawatu's deportment. If we attempt to describe it, we should say the lotuses of her lovely feet, by means of their charms, the nails, constantly laugh at the lotus of her hair, whilst her lovely slender calves emulate the proud (light) of the two lamps lit for the Cupid who entered the habitation of her body.—*Kawsilumina*.

There is also a species of poetical composition (similar to the English “ballads” of a former day) called විරිදු *viridu*, which is sung at festivals and other places of rejoicing, without preparation or previous reflection, and upon a subject selected, often suggested, at the spur of the moment. Of this the following, from *Munkotunérála*, one of the attendants of the late Kandyan Minister Pilimé Taláwa, and the

autumn: pray kindly send me a correct book answering to the first four letters of this stanza.

The following from the *Kāvīyasékaré* is a specimen of a stanza containing the same word repeated several times, but conveying at each repetition a different meaning:—

- | | |
|--------------------------|--------|
| (1) මලිතිය බොන මිවන පුජ | මි ව න |
| (2) පිපි තුගුවන මිවනවන | මි ව න |
| (3) හඬිනිදුරණ මිවන වන | මි ව න |
| (4) රණසුදු වැකි මිවන බිල | මි ව න |

- (1) The paroquet which extracts honey from the sweets of flowers ;
- (2) The bees which enter the widespread lofty *mī* forest ;
- (3) The wild buffalo which destroys the ground and the forest by its horns ;
- (4) The rats daubed with glittering chalk (plumbago) which enter the holes of trees.

Carrying the last plan a little further, the author of the *Kavminikonḍala* has given us one line, which when repeated four times conveys four several meanings:—

- (1) වනකදල දෙලෙහුදල
- (2) වනකදල දෙලෙහුදල
- (3) වනකදල දෙලෙහුදල
- (4) වනකදල දෙලෙහුදල

- (1) The jungle trees became bright with the tender foliage ;
- (2) The forest became bright by reason of the assemblage of plantain trees ;
- (3) The eloped wife glistened with (her) streaming tears ;
- (4) The jungle was bent with (the weight of) the dew upon the tender leaves.

The same elegant writer has given us several puns of this kind, of which the reader will observe the following stanza, consisting of ten letters in each line, when divided into two may be read without the second half, by supplying

composed of two letters in the alphabet, and in which are incorporated all the vowel sounds :—

නේවන විවන	ව න
නව විනා වන නී	ව න
වන නොනිවි නුනු	ව න
තානනානව නිවුනේ	ව න

Birds of divers colours entered the forest ; the *ná* (*Mesua Ferrea*) and *bakmī* (*Nauclicia orientalis*) became fresh (with foliage) ; the unwise eloped wives have received no consolation ; (and) the forests became rivers to the bathing elephants.

Illustrative of the decorations of style which the Singhalese poets make their study, I may also mention the existence in their compositions of what may be termed rhymes in the middle of a stanza. This is very common except in short metre. Of this species the following will serve as an example :—

වැඩිවෙ න ලෙසා දෙන දන පමණට ස	න ර
දෙන ද න නී සා දනරස ලැබ නොව වි	න ර
පසු වෙ න දී සා නායක මැතිදුනි ප	න ර
ඉඳ ද න ග සා එන ලෙස අයදිමි නී	න ර

O Chief (Mudaliyár) Disánáyaka ! unbounded in wealth by reason of your valuable charities ! just as the increase of learning in proportion to its impartation to others ; on my bended knees do I constantly pray that you will visit us.

The two following verses may be read in one diagram of uniform construction by the omission of sixteen letters :—

- | | |
|---------------------|-----|
| * (1) ලද ලල දවල උ | ද ල |
| (2) විසන ගන නිලිනි | ද ල |
| (3) සරසිකැල නොලදි | ද ල |
| (4) මෙලෙස දිය නෙකසෙ | ද ල |

* The numbers have reference to the lines in the diagram on page 282.



බරනම ගවසක.

6				5				4							
4	3	2	1	4	3	2	1	4	3	2	1				
1	කි	කි	කි	කි	ද	ස	ල	හි	හි	හි	හි	ර	ඳ	ල	ල
2	කි	රි	ව	ල	ද	ස	හි	ව	ස	ව	මු	කි	හි	ද	කු
3	කි	ද	බ	ව	හි	ම	හි	ර	හි	හි	හි	ම	හි	හි	හි
4	කි	රි	හි	හි	හි	ර	හි	හි	ම	ද	ම	හි	ව	හි	ල
1	හි	ස	හි	හි	බර			හි	ර	ස	ද	හිම			හි
	ද	ර	ප	හි				ම	හි	ද	ම				ඳ
	හි	ස	හි	හි				ද	කි	ද	හි				ස
	හි	හි	හි	හි				ද	හි	ද	හි				ම
2	හි	ව	ර	ද	හි	ව	ස	කි	රි	ප	හි	ල	ම	හි	ම
	හි	ර	ම	හි	හි	හි	හි	ව	ස	ල	ව	හි	ම	ස	ප
	හි	හි	ස	ද	ද	ම	හි	හි	ල	ස	හි	රි	කි	ර	හි
	හි	ව	පු	ස	හි	ද	ප	ර	හි	ර	ස	හි	ම	ප	හි
3	පු	හි	ව	හි	හිම			හි	ව	ද	ද	සකි			හි
	පු	ද	ප	ප				ව	ප	හි	රි				හි
	ද	ව	ව	හි				ස	ව	හි	කි				හි
	හි	හි	හි	හි				හි	හි	හි	හි				හි
4	හි	හි	හි	හි	හි	ර	හි	ස	ස	ස	ස	හි	ඳ	ර	ද
	හි	ර	කි	ස	ව	පු	ව	හි	ර	ස	හි	හි	ව	හි	ද
	හි	හි	හි	හි	හි	කි	ල	හි	පි	ස	කි	හි	ර	හි	ද
	හි	හි	හි	හි	හි	හි	හි	හි	හි	හි	හි	හි	හි	හි	ද
10				11				12							
1				1				1							
2				2				2							
3				3				3							
4				4				4							

(see page 283*) by *Koratōṭa Terunnánsé*, who received a handsome reward from his sovereign, *Rájádhi Rájasiṅha*,* for the cleverness and ability with which he introduced into one diagram twelve well-meant elegant stanzas.

- I. { 1. සිසිසිසිදසල නිනිනිනි නිරජ ලලල ල
 2. සිරිවිලදියන වසවමුසිනද කුසක ල
 3. සිදිබවගිමන රභනගමින පථනස ල
 4. සිරිගන නිරන නමදිමි නවන නුවන ල

(4) I bow to the great *Sirigana* (Buddha),† who abstained from idle praise (exaggeration); (3) who was firm, renowned,

* The writer has given his name and the date of his composition, &c., in the following stanzas. The *Saka* era (from the date of the reign of a king of that name) is much in use among Sīṅhalese scholars. It commences 78 years after the Christian era.

ස ක වසිනෙක්දහස් සත්සිය දෙසිවු ව න
 ල ක සිරිරජ දිරජ සිහනිරිදුට ස ව න
 නි ක රජගුරු ගෝල දමරම් යනි රු ව න
 ස ක කෙලෙ මෙබර කවිගැප් නම් අමුතු ව න

Rev. Dhammárāma, the disciple of the Preceptor of three Sovereigns, hath composed this novel diagram embodying twelve stanzas, in the sixth year of the reign of *Rájádhi Rájasiṅha*, and in the year of *Saka* 1708 :—

මෙනිරි දු මෙසක නරඹා සියසකිනිදු රු
 නෙවිරි දු කිවිදු කල ගෙලෙ වන් පාසසු රු
 මෙනමු දු ලන් පල්ලේබැද්ද ගම්ව රු
 මෙයනි දු හට පිදි මිහි පවනිනා තු රු

This king, having with delight seen with his eyes this diagram, like unto a noose on the necks of his (the writer's) rival poets, has made an offering to this Chief Priest of an estate called *Pallébedda*, as long as the earth shall endure (in perpetuity).

† There are no less than twenty-six epithets for Buddha. They are embodied in the following six lines from the "*Námavaliya*" :—

and, like a precious gem, who extinguished the fire of metempsychosis; (2) who was the chief of the world, blessed with prosperity, who when king Kusa heard the lion's roar, who (by self-denial) extinguished in himself the allurements of sin and vice,—who was gentle (cold) as the moon, benevolent, the saviour of men, the ocean of river-like wisdom, and who destroyed the weakness of the heart by means thereof.

II.	1. නවරදනවසසිරිපතලමනිමනර	ක
	2. නරමනනතවසුලවනමසුපසස	ක
	3. නනසද්දමනනලසනිරිසිරනදපි	ක
	4. නවනුසනදපුරනරසුනමදුචිනය	ක

සවණ සතර මරරුපු මොකැදුරු මුනි	දු
සමනැස් පසැස් දියබස් දසබල දිනි	දු
සමන්බදුරු සිරිගත ලොවග සුගති	දු
නරදමසැරි විනා දමරද සුගත් බු	දු
තිලෝතුරු ලොවිදු සිදු සවණ සිරිම	ත්
දියනා තිලෝනා දින නමලු සැමසුග	ත්

(1) සවන, derived from සච්ඤ (Sanskrit), means “allwise”; (2) සතර, from ඡායනා (Sanskrit), means “master” or “teacher”; (3) මරරුපු means “the enemy of Māra,” a god inimical to Buddha; (4) මොකැදුරු, from මොක් and ඇදුරු, means “the teacher of Niwan”—the *summum bonum* of the Buddhist—the doctrine of the extinction or annihilation of the human soul; (5) මුනිදු, compounded of මුනි and දු, means “supreme intelligence”; (6) සමනැස් is the Eḷu expression of the Sanskrit සමනත චක්ෂු, “eyes on all sides”—omniscient; (7) පසැස්, “five eyes,” having reference to the five powers of sight which his followers attribute to Buddha—they are, first, මසැස, which means මස්ඇස, “bodily eye,” the power whereof was so great that it is said he could see the distance of sixteen miles just as we can see at the distance of sixteen inches, and that it was composed of five colours; *i.e.*, the eye-lids were *blue*, their sockets *glossy yellow*, their corners *red*, the whites of the eyes *snowy white*, and their black *jet black*; secondly, දිවඇස or දිවිඇස, “godly eye,” which had the power of seeing that which the මසැස could not penetrate; thirdly, පැනැස or පැනැඇස, “eye of wisdom,” which means in English “the mind’s eye,” capable of an insight into superlative wisdom; fourthly, බුදුඇස, “Buddha’s eye,” a sight which none possessed but those who became Buddha by predestination; and fifthly, සමනැස (*vide supra*), “omniscience”—(8) දියබස්, from දිය and

(4) Bow ye to the peerless (Buddha) of golden rays, without pride and the evil propensities of humanity ; (3) whose face was like the moon, who had beauty which pleased all, and a voice like that of the Indian cuckoo ; (2) who was not covetous, was without a thirst for evil desires, unavaricious, five-eyed, and the emancipator of hell ; (1) who was blameless, precious as a gem, not led away by the allurements of royalty, and preserved the mind from vacillation.

III.	1. ගතස්සදීපතොස දගනුතදවනිදමන	ද
	2. ගරුපිසුච්ඡවනරසනනවගනනම	ද
	3. ගනනදනකලනපියසිහරනනපප	ද
	4. ගගගනිරනිසසසසනජරදදද	ද

බප්, "father of the world"; (9) දසබල or දසමුල් means "of ten-fold power," having reference to the ten powers of the body and the ten powers of the mind which his followers attribute to Buddha ; (10) දිනිදු, from දින "to conquer" and ඉදු "supreme"—the supreme conqueror—which means the conqueror of *death* මර (the powers of the soul—පංචසකක, *vide* Clough's Dictionary ; lust, anger, ignorance, self-confidence, and pride—කෙලස ; merit and demerit—ඉසිසංසාර ; and මාර, god of that name before explained) ; (11) සමන්බදුරු or සමන්බහදුරු, from සමන්ත පද (Sanskrit), "good in every way" ; (12) සිරිගණ (the word in the text), from ශ්‍රීසණ (Sanskrit) "full of prosperity" ; (13) ලොවම, from ලොකගත (Páli), means "chief of the world" ; (14) සුගතිදු has different meanings, one of which, according to its plain derivation, means "the chief who is gone to good (Nirvána)" from සු "good," ගත් "received," and ඉදු "chief" ; (15) නරදම්සැරි, "men-converting driver," having reference to the facility with which he converted mankind to his doctrines, just as easily as a coachman leads his horse ; (16) විනා, a term as also used to one of the heathen gods *Ganadeviyó*, and means, when applied to Buddha, "the peerless," who has not his like—himself supreme ; (17) දමරද, "king, by reason of his righteousness" ; (18) සුගත් *vide* සුගතිදු, without the adjunct ඉදු ; (19) බුදු (it will exceed the bounds of this Paper to enter into a definition of this term, suffice it, however, to state that it means) "a pandit," "blossoming," or "awaking from sleep" ; (20) තිලෝගුරු, "teacher of the three worlds" ; (21) ලොවිදු, "chief of the world" ; (22) සියුසවන, "all wisdom acquired by himself" ; (23) සිරිමත්, "altogether a beautiful person" ; (24) දියනා "chief of the world" ; (25) තිලෝගු, "chief of the three worlds" ; and (26) දින, "conqueror."

(4) Bow ye to the supreme Buddha, who was without lust, decrepitude and its concomitant ills, the donor of donors, the admiration of the good, who arrived at the goal of metempsychosis ; (3) who pleased the priesthood, was houseless, a stranger to distress ; (2) who was humble and agreeable, gave consolation to men, and procured *Nivana* ; (1) who was easily satiated, quick of perception, self-denying, renowned in the world, and (who moreover) granted Bráhma's prayer.

- IV. {
- | | |
|----------------------------|---|
| 1. ලලලලවිදසි කකකකනගනදදද | ද |
| 2. ලකසනදුරමරසපියබ්බිදමනමප | ද |
| 3. ලසනවසදෙස නසදනසවනමනප | ද |
| 4. ලකුඵ්භුනිදිසමපනවිසකනදනන | ද |

(4) Bow ye to the feet of Buddha, who was a treasure of compassion, successful in profound meditation (that which brings its object fully and undisturbedly before the mind), and pleased all men ; (3) who was like the new brilliant moon, did not secretly sin, and gave *Nivana* ; (2) who loved not sinful men, and practically carried out his profound doctrines ; (1) who could dive with his into other's minds, and who cared "not a straw" ($2\frac{1}{2}$ gr.) for the impure human body which the ignorant regard as a banner.

- V. {
- | | |
|------------------------------|---|
| 1. නිමුගම්බමනනවනිසුදර්සිතනසි | ස |
| 2. නිවනදියදදපලසරදනනිභුසස | ස |
| 3. නිසගමරහසිරිසුලනවදුවගරපි | ස |
| 4. නිවරනනිමදසිවනරනවසදනන | ස |

(4) Bow ye to him who had no impediment against seeing, was unintoxicated with vain-glory, the chief of *Nivana*, resident in forests, and who enjoyed the food of meditation ; (3) who was not enticed away by desires, was deserving of offerings, worthy of adoration, and had no lusts ; (2) who was the (victorious) banner of the world, who obtained the fruitful *Nivana*, enjoyed laudable prosperity, subjugated evil concupiscence and all improper desires, ceased to wander (in the regions of metempsychosis), was able to convert men, and was self-denying and omniscient.

- VI. { 1. සිලවනගනනදනදසනපනිදිසුද ග
 2. සිවබගනසුනරමසනුවදුවසපින ග
 3. සිඊදිඊයරසවරනවනදවතරුන ග
 4. සිසිසිසිනදනනනනනදුවිදගගග ග

(4) Bow ye to him who, at the foot of the *Bó* tree, by the subjugation of evil passions and lusts, attained pre-eminence, who sent many to *Nivana*, dried the springs of sin, and was in speech bold as a lion ; (3) who was of young and tender body, and of superior mental and bodily accomplishments, who continued in moral merit, and destroyed the morbid appetites ; (2) who was pre-eminent in merit and happiness, unattracted by the female sex, and peculiarly fit for *Nivana* ; (1) who was steady and uniform in the observance of religious and moral obligations, and wishful of pleasing the priesthood ; who acted up to the letter of his doctrines, and was a treasury of penance.

- VII. { 1. දදදදරජනසසසසතිරනගගග ග
 2. දපපනනරගසියපිනලකනදනන ග
 3. දමනනගවනනසරනවදුවවසුපිරු ග
 4. දනමදනිවදනනුගදසකොසදියන ග

(4) Bow ye with pleasure to him who gave *Nivana* and consolation to people, had the speech of wisdom, and was the chief of the world ; (3) who was very full of *telesadhutāṅga*,* who revealed to men the hidden treasures of morality, and did not annoy or distress any being ; (2) who was the chief of men—humble, and dazzling with the resulting prosperity of hundreds of meritorious acts, and sinned not ; (1) who was sinless, firm as Mahaméra, possessed of *chatussatya*† ; and for whom love was begotten in the minds of wise Bráhmīns.

* *Telesadhutāṅga* are thirteen religious ordinances to be observed by the priesthood, and which, with their minute subdivisions, are too numerous for detail here.

† *Chatussatya* are four articles of belief in Buddhism, and are the following :—A belief, 1st, in that certainty of sorrow ; 2nd, that it proceeds from sensual desires ; 3rd, that the subjugation of both is by *Nivana* ; and 4th, in the means of obtaining that happy state.

- VIII. {
- | | |
|---------------------------|---|
| 1. කයනච්ඡුමනසුරතරපුදනසනුව | න |
| 2. කපිදතරුසිරිතිසලනනමදදසන | න |
| 3. කසසපසුමනවලසුවනනනනමර | න |
| 4. කරනමනිමලනපරිසිසවනදරව | න |

(4) Bow ye to Buddha, who was pure, and wishful of subjugating the passions and evil desires ; (3) who died to die no more, was without desires, fond of the forest, benevolent, and unqualified for the laity ; (2) who was robed, handsome, firm, and unintoxicated with vanity, and had tenfold-wisdom ; (1) who possessed six species of intelligence superior to that of all men, was infinite in wisdom, and obtained offerings from gods and men.

- IX. {
- | | |
|----------------------------|----|
| 1. ලතවනුනවනමිදිමනතරනිනගරි | සි |
| 2. ලසනථ පනමිගනගරනමභිවබදි | සි |
| 3. ලකසකුදනසිමුවසවනයදිලවරි | සි |
| 4. ලලලලජරනිනිනිනිලයදසිසිසි | සි |

(1) I bow unto him who had no affliction or sorrow, was wishful of redeeming others, was like unto a ship (which wafted men over the ocean of metempsychosis), and free from desire to sin ; (2) who was of glowing splendour, chief of the priesthood—had no delight in witnessing the fights of beasts and birds, and shunned the allurements of hell ; (3) who was the chief of science and of the fine arts, was least desirous of asking (so as to subject himself to ignominy) ; (4) who with his heart gauged the world—was a master mind, a store-house of wise designs (whereby and by reason of his ordinances men obtained *Nirvana*)—the chief of the wise, and the holiest of the holy.

- X. {
- | | |
|--------------------------|----|
| 1. ගගගදච්ඡ නනනනනදනසිසිසි | සි |
| 2. ගතරුතවදනවතරවසරසරිදිරි | සි |
| 3. ගනපියවදුවනසමරනසුනගබව | සි |
| 4. ගදසුදිනිපතසදනදනනනවල | සි |

(3) Bow ye (to Buddha) who will be born no more, the father of the priesthood ; (1) the chiefest of the chief—chief by reason of his moral and religious lectures—who extinguishes sorrow—attracted many to himself, whose smile played amidst the rays of

his white brilliant teeth ; (4) whose word was the theme of the wise, who was not idle, and the chief of men ; (2) whose word had a deep signification, whose voice was sweet, and whose prowess was great.

- XI. { 1. සනනදසවන රනවසිදමනිනරව නි
 2. සපිරගවද්වනලසුරිසිහරමගස නි
 3. සයසනුකිනද රසලපදදයදිනව නි
 4. සසිනනසිරද සුනිවනනමදමගමු නි

(2) Bow ye to him who was of a fully developed body—avoided Anageya's flowery charms, and was engaged in deep meditation regarding *Nivana* ; (1) who pleased all, resided in the country, was of six colours, peaceful, and actuated with righteous principles ; (4) was worthy of praise, had a fascinating speech—and gave to beggars without question ; (4) who was the chief of the *Sákiya* race, great and happy, well clad, worthy of adoration ; and who subjugated the passions.

- XII. { 1. දනනදනකස විනපමයදිනිනුඵකු ල
 2. දපනමනවස නදසනසෙදසවනස ල
 3. දපමනමද බියපිසරමරද්‍රනසක ල
 4. දදදදනගන කකකකසිදවිලලල ල

(1) Bow ye to him who was the delight of men, and devoid of vicious inclinations, was born of an illustrious race, who enjoyed in meditation the fruits of *Nivana* ; (2) which men procured as soon as his words reached their ears ; (3) (bow ye him) who was moderate in speech, who swept away all fear, and frightened the three daughters of *Mára* ; (4) who was like unto a banner, who raised the banner of victory in all his actions, who had an insight into things in the earth, the air, and the water ; who was resplendent, and was (moreover) pure at heart.*

* The above, although a free translation, made with the assistance of several commentaries, is nevertheless—being confined to each line, and therefore without any attempt at arrangement—less elegant than it should otherwise prove. The governing words of each sentence “Bow ye” or “I bow” will be found placed at the beginning of each line with which the writer has commenced the translation.

There is also another species of pun called සුවල *suvala*, or “double-meaning verse,” much esteemed by the Sinhalese. It is to be found, though sparingly, in several of the best authors. In the *Kāvyaśéharé* we find the following :—

නත්වරද ලොප්	වන
කිරියඳිසර සත්	වන
අදෙස් හැදිලි	වන
එසඳ ගුණයෙන් සඳලකුණු	වන

Free from many faults—

1. ලොප්වන.....නත්.....වරද
possessed of previous (ly obtained or done) merit (and)
intelligence,
2. වන.....කිරියඳිසර.....සත්
imbued with faith.
3. අදෙස්.....හැදිලිවන
Woman, by reason of those qualities, is like “grammar.”*
4. එසඳ.....ගුණයෙන්.....වන.....සඳලකුණු

This comparison is explained by the same stanza conveying different ideas, as follows :—

It is by reason of (the following) properties that

4. වන.....ගුණයෙන්.....
she is like the symbols of sound :
එසඳ.....සඳලකුණු

that is to say—

1. “*Nat*” and “*varada*” are produced by elision.†
නත්.....වරද.....වන.....ලොප්
2. The verb is the seventh section.‡

* The word here rendered “grammar” is in the Sinhalese a compound term, which means the “symbols of sound” (*sadalakunu*).

† As නත් and වරද are produced by the elision or lopping of අනත් and සුවරද, so woman, according to the first translation, was shown to be *blameless*, lopped of all her faults.

‡ The verb which is the subject of the seventh section of the grammar conveys an act, as in the agency which is indicated by previously done or obtained merit.

කිරිය.....වන.....සත්.....අදියර

3. The word “*hēdahili*” is produced by substitution.*

හැදි හිලිවන.....අදෙස්

The above conveys both a rule of grammar and an eulogium upon the female sex. In either sense it is grammatically correct, in both senses it is elegant, and in neither is it defective in imagery.

These lines afford us an opportunity to ascertain the date of the “*Sidatsaṅgarāva*.” For although many a Sinhalese scholar believes that the grammarian who professes to write his work upon the precepts of “unerring custom” after the established usage of eminent writers, has borrowed most of his illustrations—such as *වත්* or *අත්*—from the *Kāviyaṣēkaré*, yet I think, apart from the modernism of the style of the last-mentioned work,—a fact which sufficiently refutes the above opinion,—there is almost conclusive evidence to support the more generally prevailing belief that “the last-mentioned work was in point of date subsequent to that of the grammar.” I say there is nearly conclusive evidence, because the poet, in reference to the verb in the stanza under consideration, places it in the seventh section or chapter of grammar—a division which, as far as my inquiries have extended, is to be found in no other work on grammar except the “*Sidatsaṅgarāva*.” Taking then, the date of the grammar to have been before the *Kāviyaṣēkaré*, we are by no means at a loss to say that it was written after the *Kavsilūmana*, from which the grammarian has quoted the following passage :—

තරනිඳුනු ඉංගෙන් සෙමෙනද නැසිපැසැනි.

She came slowly, according to the king’s wish, and hid herself aside, &c.

* As by *ades* (a term of grammar for giving possession to one sound a different one) *අදහිලි* becomes *හැදිහිලි*, so the naturally unbelieving sinful woman was imbued with faith.

Kaṁsilūmina was written by Kalikāla Sahitya Sarawajayna, or King Paṇḍita Parākrama Báhu III., who flourished A.D. 1266, and the *Kāvīyasékaré* was composed by Totagamuwé in the 34th year of the reign of Parākrama Báhu VI., who ascended the throne A.D. 1410.

Between these two dates, therefore, was the “Sidatsangaráva” composed. But we are still unable to state at what precise period of time (during an interval which covers a space of 178 years) it was published.

Extending, however, our investigations a little farther, it may not prove to be an idle theory, nor one inconsistent with that which we have just propounded, to identify *Patirāja*, to whom allusion is made at the conclusion of the “Sidatsangaráva,” with the Wírasingha Patirāja mentioned in the introduction to the “Pansiyapanas Játakaya.” The grammarian, in a sort of dedicatory address with which he concludes, says :—

“May Patirāja, like unto a banner on the summit of the mansion-like village Radula, and who by the arm of his extensive ramparts governs the whole of the southern (division of) Laṅká, be long prosperous ! I have composed the ‘Sidatsangaráva’ at his kind request, and with a view to disseminate (the knowledge of) the rudiments of cases, &c., in the native (Sinhalese) language. The wise man, who shall have learnt its rules both primary and secondary, and shall have made grammar his study—having with facility removed the pretensions of the learned, who are elated with pride—will constantly hoist up the flag of victory in (this land of) Laṅká, like the boundless ocean with the renown of its waves widespread in all directions.”

Patirāja was not a king, but a chieftain in the south of Ceylon, “who by the arm of his extensive ramparts governed Southern Laṅká,” and “at whose request this grammar was composed.” Nor is it consistent with the known history of

this Island to regard him as a king of Ceylon ; nor indeed is he named by the grammarian with a dignified expression such as to justify a like supposition. And that he was a minister of the ruling sovereign, and clothed with the authority of a petty governor, we may without difficulty believe, since we have numerous instances of the kind in the “Mahávaṇsa.”

Having thus far arrived in the chain of our investigations, the question presents itself, When did Patirája flourish? We can only obtain an answer to this in case his identity with Wírasinḥa Patirája, “the supreme minister” named in the following extract, be established :—

“It is well that good people, having given their ears and bent their minds, should hear the EĻu version of the History of the Lives, composed without departing from the method of the writer of Atuwá, and with the assistance of the Supreme Minister Wírasinḥa Patirája, and at the request of the good Minister Parákrama, who commended the translation into the EĻu of the lectures called ‘The Five Hundred and Fifty Lives,’” &c.—*Introduction.*

The like laudable exertions in either case bestowed by the minister in the promotion of native literature, besides the similarity of name given to the chieftain mentioned in each of the above selections, prove the identity of the patron under whose auspices the “Pansiyapanas Játakaya” was translated into EĻu, with the provincial chieftain who directed the publication of the EĻu Grammar. Taking their identity to be thus established, we are enabled—with the assistance of a tradition current in this Island, and supported by evidence as to its truth, that the “Pansiyapanas Játakaya” was translated during the reign of a king of the name of Parákrama Báhu, who had *Hastisalapura* (Kurunégala) for the seat of government—to ascertain as nearly as possible the date of the “Sidatsaṅgaráva,” by fixing upon Paṇḍita Parákrama Báhu IV. (A.D. 1300—1347),

the only king of that name who had his court at Kurunégala.*

There are many other *Yuvala* verses in several books ; but it will suffice to make one more selection from the *Yógaratnākaré*—a book no less celebrated for its doctrines on medicine than esteemed for the elegance of its versification:—

පිහිටි ගුණ තිරස	ර
කළ සවිකුලන් පිරිව	ර
විහිදි රස් මනහ	ර
වදිම සිරිගණසුතර හැමව	ර

First translation, taking the subject of the stanza as *Buddha*:—

Always do I bow to the Mahámétra-like Buddha, who
 හැමවර...වදිම.....සුතර.....සිරිගණ
 surrounded by all castes and races—
 පිරිවරකළ.....සවි.....කුලන්
 emitting lovely rays—
 විහිදි...මනහර...රස්
 possessed unchangeable fruitful virtues.
 පිහිටි.....තිර.....සර...ගුණ

Second translation, taking the subject of the stanza as the *Mahámétra*:—

Always do I bow to the Buddha-like Mahámétra, who†
 හැමවර.....වදිම.....සිරිගණ...සුතර
 encircled by all hills and rocks—
 පිරිවරකළ.....සවි.....කුලන්

* The following remarks from the learned translator of the “Mahāvamsa” support the above theory:—“Paṇḍita Parákrama Báhu IV. (Kurunégala, A.D. 1319–1347).—Relationship not stated ; devoted his time exclusively to religious observances, and to the building and establishing sacred edifices at Kurunégala. Many religious and historical works, among them the ‘Mahāvamsa,’ were compiled under his auspices.”—*Turnour*.

† This is used in the masculine gender ; and it is not a little remarkable that the Eḷu has not the neuter, although it is known to most of the Oriental languages.

resplendent with pleasing lustre—

විසිදි.....මනහර...රූප්

has firm substantial qualities.

පිහිටි...තිර...සර.....ගුණ

I should not omit to add to the above one other species of composition called *Debas*, or “dialogues.” They are generally the language of imagination, wound up at the conclusion with some reality or praise (as the case may be) which the writer wishes to convey. The following from the *Perakumbá-siritá* is a good illustration :—

හේසද කිම මුහුද කිම සැඟවෙනු වෙල න

මෙම ගජ හස අතින් පැරකුමිරජ දිමු න

දෙසි ගිවිදුන් ඔහු මදහස කර ලව න

තදුන් කැලුම් සොම්ගුණයුත් පචුරු ඇ න

The above, when rendered into a dialogue, is read as follows :—

The Ocean :—හේසද. O Moon !

The Moon :—කිම මුහුද. What, O Ocean ?

The Ocean :—කිම සැඟවෙනු වෙලන. Why does thou hide thyself behind the skirts of the shore ?

The Moon :—මෙම ගජ හස අතින් පැරකුමිරජ දිමුන දෙසි ගිවිදුන්. (Because) the enlightened King Parákrama gives away his (elephants) to those who are in quest of elephants and horses.*

The Ocean :—ඔහු මදහස කර ලවන තදුන් කැලුම් සොම් ගුණයුත් පචුරු ඇත. (Nay) the offering of that silver brilliancy (gentleness) of rays, which thou hast emitted is (alone) sufficient to please him (towards thee, and deter him from such an act).†

* This answer conveys to a person well read in the mythology of the East greater information than the words themselves impart. “I do so, lest the enlightened King Parákrama, who gives away elephants to those who are in quest of elephants and horses, should also part with my own elephant, which is my habitation.”

† The ocean is here represented to have spoken thus : “Nay, the offering of that silver-brilliancy (gentleness) of rays which thou hast emitted is alone sufficient to please him towards thee, and to prevent him from giving away thy habitation.”

Having thus given a brief, and doubtless an imperfect, account of Sinhalese poetry, I shall now proceed to show a few rules of Versification or Prosody.

Quantity, feet, and pauses are necessarily constituent parts of all verses ; and one great advantage which the Sinhalese possess over the Western nations. is the existence in the language of the former of symbols for long and short sounds, indubitably expressed, and without reference to usage (very often an uncertain arbiter) for the ascertainment of their quantity. It is for this reason that I have throughout used the word *sound* instead of *letter*. I must, however, not omit to mention that there is a poetical license which permits the use of a long letter for a short or a short for a long letter ; but this is very rare indeed in good compositions. The word පිළි *pili*, "short," in the following line, is used for the long පිළි *pili*, "clothes" :—

කොළම ගොතා අඳිනත් බැරි දළපිළි මතුපිට අඳිත්ට

Even if leaves can be worn by being woven together,

Coarse cloth can I not wear outermost ?

The melody of the Sinhalese verse depends chiefly upon the sounds or letters being short or long,—not to mention what is common to all poetry, the choice of words, the seat of the accent, the pause, and the cadence. As in English, the cæsural pause* is not without effect in the Sinhalese. Of this, the following beautiful lines from the celebrated *Guttala Jātaka* is a good illustration :—

2	1	2	1	1	2	1	2	=	2	=	1	1	1	2	1	1	1	1	2
රුරුසේඅඳිනාලෙසේ	:	අත්	:	:	ලෙලදිදිවිදුලිය	බා													
2	1	2	2	1	1	1	2	=	2	=	2	1	2	2	1	1	1	2	
රත්රසේච්ඡත්තලෙ	සේ	:	වෙන	:	:	නාදනුපාතබන	බා												

* This pause sometimes falls before the middle of a line, but it does not thereby render the poetry less sweet.

2 1 2 1 1 1 1 2 = 2 = 1 1 1 2 1 1 2 1 2
කම්පසේදෙනසැරලෙසේ : දෙස : : බලබලානෙතනිත්ස බා

2 1 2 1 1 1 1 2 = 2 = 1 1 1 2 2 1 1 1 2
මම්කෙසේපවසමිඵ සේ : වර : : සුරලදුන්දුන්රගසු බා

How can I describe the dances of the goddesses—whose hands move like lightning, and as if intent upon portraying a mass of pictures—whose feet move after the music with the same ease with which gold adheres to mercury—and who look at the company from the corners of their eyes with the sharpness of Cupid's darts ?*

The short sounds or letters are called *luhu* or *lahu*, marked in the *Sinhalese* thus, —; and the long sounds, or *al*† sounds, together with their respective vowels, with whose assistance they are pronounced, are called *guru*, marked thus, ˘.

Three of these sounds compose a *foot*, and by a diversity of arrangement these tri-syllables produce *eight* kinds of

* The chief accomplishments of the goddesses are hereby portrayed. Mr. Wilson says at p. 76 of the *Megha Duta* :—

“It is to the Commentators also that I am indebted for the sole occupation of the goddesses being pleasure and dress. That fact—
..... to sing, to dance,

To dress, and troll the tongue, and roll the eye—

constitutes a very well-educated female according to the custom of Hindústán.”

Amongst the *Sinhalese*, however, it is different. Except amongst inferior classes, all the above so-called “ornaments of nature,” save elegance in dress, are looked upon by the *Sinhalese* as unbefitting the female sex.

† An *al* letter is a consonant which cannot be sounded without the help of, and being preceded by, a vowel sound, and which has its inherent vowel sound suppressed by a symbol on the top of the letter ; e.g., *al* cannot be sounded without a vowel ; this, together with its vowel, produces one compound sound : and they are therefore reckoned as two short letters or sounds, or as equal to one long sound. Thus, මම *mama* = මි *m* = මන් *man*.

feet;* and without attending to any particular classification, I shall here enumerate them with their corresponding classical terms :—

Quantity.	Greek.	Sinhalese.	Meaning.	Sanskrit.
1 — — —	Tibrach	දේවතනේ	godly	තතනේ
2 — — —	Anapoest	වාසුතනේ	windy	සතනේ
3 — — —	Bacchic	ජලතනේ	water	සතනේ
4 — — —	Amphibrach	සිරුතනේ	sun	ජතනේ
5 — — —	Molossus	බුමිතනේ	earth	මතනේ
6 — — —	Antibachic	ආකූතනේ	air	තතනේ
7 — — —	Dactyl	චන්ද්‍රතනේ	moon	භතනේ
8 — — —	Cretic	ගිනිතනේ	fire	රතනේ

As in all matters emanating from Buddhists, poetry is with them attended with its good and bad effects upon the poets. But, unlike the Sanskrit, Sinhalese poetry need be free from bad feet only at the beginning of a stanza. The Sinhalese poets have, however, little attended to such a slavish fear, and it seems have freely given vent to their muse wherever they could elegantly express themselves.

1. Three short sounds, as in *dōminūs*, compose the *Déva-gāne*, and it is esteemed a good foot.

* The diagram, by means whereof the quantity of poetry is ascertained, is indeed a clever expedient or device, called ප්‍රසාරකරණමා, “spreading the rythmical feet.” It is borrowed from the Sanskrit and adapted to the exigencies of the Sinhalese. I shall merely content myself at present with the following, which is the correct mode in which the eight rythmical feet are placed, and which is just sufficient to ascertain the quantity of any piece of poetry composed of three letters :—

Sinhalese.		Greek.
1 () () ()	} = {	— — —
2 — () ()		— — —
3 () — ()		— — —
4 — — — ()		— — —
5 () () —		— — —
6 — () ()		— — —
7 () — —		— — —
8 — — —		— — —

To enter into a detail of this subject will necessarily occupy several pages, which I can hardly afford at present.

Example.

Tibrach.

ඉවතාදිය අයිතිව ත්

එබවදැනමුත් සැරසිත් ත්

පිටියේ ඉන් ගැහුමුවත් ත්

ඳවනසිකපද පසගනැයි යෙ ත්—*Kāvīyaśékaré*.

The second institute of religion is said to be compounded of five ingredients ; the taking—the deceit—the intent to steal—another's property—and the knowledge thereof.*

2. When a long or *al* sound is preceded by two short sounds, as in *spēcīēs*, the rythmical foot is called *Wáyagané*, one of the bad feet. The Sinhalese have a belief that the author of *Guttīla Játaka* suffered transportation—a misfortune, the result of his beautiful work having this foot at its very commencement. That his first stanza is an *anapoest* is true enough; † but whether he at all suffered banishment is not correctly known except from tradition.

* This definition of the crime of theft, *furtum*, seems to be more comprehensive than the one in the Institutes—*Furtum est contractatio fraudulosa lucri faciendi gratia, vel ipsius rei, vel etiam usus ejus, possessionisve. l. 4t. 1§.* The text, when freely rendered into English, runs : “The second institute of religion is said to be (the abstaining from) *theft*, which comprehends the fraudulent taking away of *another's property* with intent to steal (*lucri causâ*), knowing that it is of another.”

† The stanza referred to is the following:—

සි ය පි න් සි ඊ න් ස	රු
දෙතිස් ලකුණෙන් විසිතුරු	රු
කෙලෙසුන් කෙරෙත් ද	රු
විදිම් මුහිඳු මන් තිලෝග	රු

I bow to (his) intelligent Highness (Buddha)—the preceptor of the three worlds (who), having subjugated all the evil propensities of his nature—embellished with thirty (corporeal) beauties, thrived in the (resulting) prosperity of hundreds of meritorious acts.—*Guttīla*.

NOTE.—“The subjugation of the evil propensities of human nature” is a doctrine of Buddhism, according to which none but a Buddha can enter into that holy state *without fault or sin*—a doctrine, too, similar to one of the three doctrinal maxims inculcated in the Elusinian Mysteries, “the attainment of mental peace by a course of penitential purification.”

Example.

Anapoest.



ය ස ගි ඵ නි රි දු	න
නාලියකියන නිවියෙ	න
නා ර ජ හ ට අ ස	න
මදක්බාදු සතුටකදුලෙ	න— <i>Kāvīyaṣékaré.</i>

The king of the Nāgas who (lost in admiration) listened to the sweet songs complimentary to himself oft repeated by the Nāga woman, was only interrupted by tears of joy.

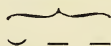
Versified.

The king of serpents bent his ear
 To th' oft-repeated lays ;
 And did, with breathless silence, hear,
 The music of his praise.
 The minstrel fair he views and hears,
 Deep lost in reverie,
 Until a flood of joyful tears
 His captive soul sets free.

3. When one short sound is followed by two or long *al* sounds, as in *hōnēstās*, the foot is called *Jalagané*, and it is esteemed good.

Example.

Bacchic.



අ මා වෙ න් වි ස න	ද
බානවිලසින් සුරවෙද	ද
මොහුසින දුක්තොම	ද
සිතා දුරුකරමෙවිසින්බ	ද— <i>ib.</i>

As the divine doctor by means of his heavenly antidote removes the malignant poison (the Bodisat), with an intention to remove the inordinate heaviness of his (the Brāhmin's) heart, said :—

4. A long or *al* sound preceded and followed by a short sound, as in *āmīcūs*, is the *Hirugané*, a bad foot productive of sickness.

Example.

Amphibrach.

— — —
 ඳ දු න් කි වි දු න් ගෙ න
 බිලිදුන් සහ ලදුන්ගෙ න
 ක ල ව ර ද නො ම ගෙ න
 හලෝපෙරරජතුමෝසසොබ න—*Kusa Játaka.*

Ancient, righteous monarchs disregarded the faults of fools (the ignorant), of poets, of children, and of wives.

5. Three long or *al* sounds, as in *dōctōrēs*, compose the *Búmigané*, which is a good foot.

Example.

Molossus.

— — —
 බ න් පෑ න් ව න් ය හ න
 ම ලී සු ව ද ස හ වි ල වු න
 ප හ න ට නෙ ලී වි ම න
 මෙලෙසදන්වන්සමගවාහ න

The (ten) meritorious gifts (charities) are rice, water, garments, beds, flowers, scents, ointments, oil for the lamp, habitation (lodging), and conveyance.

6. When two long or *al* sounds are followed by a short sound the foot is called *A'kásagané*, a bad one.

Antibachic.

— — —
 ද දෙ ස් ම ල වි සි න
 ම ම් රු දෙස් වෑ ඩි ම න
 වෑ න සෙ න් නෙ ද හ මි න
 කෙනෙක්රජසොරසතුරුබියසෙ න

Some persons die from (diseases of) *dá*, the constitutional parts of the body ; or *dos*, the functions of life ; or *mala*, the excretions of the body ;—others die from folly, (excessive) lust, or evil

passions ;—others from unrighteous acts ;—and others again from causes (immediately) proceeding from kings, thieves, and enemies.*

7. When two short sounds are preceded by a long or *al* sound, as in *cārmñā*, the foot is termed *Chandraganē*, a good one.

Example.

Dactyl.



ඇල්නලවිදඵනවැදසමනි ද්දේ
කල්බිගුරුවුද්දිමල්කුරුම ද්දේ
නල්ඇතුගෙන්බැසනිරිදුපසිද්දේ
ලොල්කරනරඹාඋවන ඇවිද්දේ

The far-famed monarch having descended from his stout elephant, walked with alacrity, inspecting the park, amidst flower trees echoing the buzz of the bees, and enjoying the cool air impregnated with (the sweets of) jasmine (*Jasminum grandiflorum*) and *idda* (oleander) flowers.

8. The last and the most objectionable foot is the *Giniganē*, consisting of a short sound preceded and followed by a long or *al* sound, as in *Cāstītās*.

Cretic.

Example.



රුර සේ අදිනාලෙ සේ අත්ලෙලදිදිවිදුලයප බා
රන්ර සේ එක්වනලෙ සේ වෙනනාදනුපාතබන බා
කම්ප සේ දෙනසැරලෙසේ දෙස බලබලානෙතභිත්ස බා
මම්කෙසේ ප ව ස මි ඵ සේ ව ර සු ර ල දු දුන්රගසු බා†

* ද, *dá*, දොස් *dos*, and මල *mala*, according to the doctrines of the Singhalese books on medicine, are the three constituent parts of the human frame, and whence all distempers result. *Dá* comprehends: 1 taste, 2 blood, 3 flesh, 4 fat, 5 bone, 6 marrow, and 7 semen ; *dos* comprehends bile, phlegm, and wind ; and *mala* are the seven excretions of the seven ද; i.e., 1 phlegm, 2 choler, 3 ear-wax, serum, &c., 4 sweat, 5 nails and hair, 6 excrement ; and 7 rheum, sediment.

† *Vide* translation, *supra*.

Besides the avoidance of evil feet, a serious clog in the way of elegant versification, one other difficulty is chiefly attributable to the necessity of avoiding the use of certain letters which are deemed objectionable by writers of great authority. The author of “*Sidatsangaráva*” has laid down the following rule:—

එකයමරජඅනණලඞ්ඞඞවාක	ර
උපබගහානරනමිතිරිච්චිඅම	ර
සුරකරපෙරපසැනිවැඩදේඅවාක	ර
නසාසුබසියලීනරකරැමැදුන්සර	ර

The above, when freely rendered into English, means :—

Of the alphabet,* එ, ක, ය, ම, ර, ජ, අ, න, ණ, ල, and ° are evil characters ; උ, ප, බ, ග, and හ are human characters ; and the rest, ඉ, ඔ, ට, ව, න, ද, ව, ස, ල, are divine characters ; any one of which last must be preferred to the human characters, both in the beginning of a stanza as well as before and after the name of any person mentioned therein. The evil letters, as being destructive of all prosperity, are to be avoided at those places.

අමතලඞ්ඞවගවණසිරිපිලිවෙලි	නා
යොදු නකුල්මිසුමහවත්වගසපු	නා
තුරගබිලිපුටුසරගන්දුන කෙමෙ	නා
පෙරපසුයොන්බදුනමයෝනටසොබ	නා

By dividing the alphabet† into four, so as to produce the letters අ, ඔ, න, and ල respectively in the beginning of each division, the following diagram consisting of eight classes is produced :—

* *I. e.*, five vowels and twenty consonants, without reference to the long vowels, since they are produced from the short.

† The *Sidatsangaráva* confines the Elu alphabet to ten vowels and twenty consonants ; *vide supra*.

Weesel.	Buffalo.	Owl.	Tiger.	Serpent.	Horse.	Raven.	Deer.
1	2	3	4	5	6	7	8
අ	ආ	ඉ	ඊ	උ	ඌ	ඍ	ඎ
ඔ	ඔ	ඔ	ඔ	උ	ඌ	ඍ	ඎ
ඔ	ආ	ඉ	ඊ	උ	ඌ	ඍ	ඎ
උ	ඌ	ඍ	ඎ	ඏ	ඐ	එ	ඒ

The first class letters, called *Nakul*, “weesel,” are inimical or opposed to the fifth, called *Saputá*, “serpent”; the second, *Miya*, “buffalo,” to the fifth, *Turanga*, “horse”; the third, *Mahavat*, “owl,” to the seventh, *Biliputu*, “raven”; and the fourth, *Vaga*, “tiger,” to the eighth, *Surangan*, “deer.” All the characters opposed to the first letter of a person’s name must be avoided both *before* and *after* that person’s name.

It is also laid down as a rule of versification in several books of authority, that it is objectionable to rhyme a stanza with any of the following sounds : ස, ව, භ, and ඞ, unless the penultimate letter, *i. e.*, the letter immediately preceding any one of the above characters, be the same in all the four lines ; * *e. g.* :—

ස.

දුදන සහ වා	සය
සැම දුකට මුල් දෙ	සය
සුදන සහ වා	සය
එසේනොවසැපදෙයි විසේ	සය

Karminikoṇḍala.

* I must not omit to remark that this is a rule strictly attended to by all who have the slightest claim to scholarship. Indeed I have not found a departure from it by any of the standard writers amongst the Sinhalese.

The association with the wicked is the primary cause of every species of ill ; but the company of the righteous will, on the contrary, result in prosperity.

ව.

දුදනන්ගෙන්දු	රුව
සුදනන්කෙරෙහි මිතු	රුව
ගුණනැතිනි ගැඹු	රුව
දිලෙමවාකුලවිමනමිතු	රුව— <i>Kusa Játaka.</i>

Away from the wicked—attached to the righteous—possessed of deep wisdom and gentle virtues ; may I flourish (like a lamp) in the household of my race.

හ.

රජදම්මනාකල	සිහ
සස රැසින් දියනු	සිහ
විකුමැති එතර	සිහ
නමැතිවිකිත් සිරිරජ	සිහ

Full (unempty) of kingly virtues *—replete with the rays of his worldly renown, and of great prowess, was the lion of men, Kríti Śrī Rájá Sinha.

න්.

දෙබැම දෙදනු	වන්
පටුනලලන වසඳ	වන්
ඇගෙ දිගුසුග සව	වන්
කෙලෙහරුසිරුරනෝවිලි	වන්

Káviyaṣékaré.

Her two brows were like the rainbow, her narrow forehead like the moon in her crescent, and her two long

* The ten moral virtues of kings are here meant, and which are 1, charity or almsgiving ; 2, observance of religious precepts ; 3, liberal in presents ; 4, uprightness and justice ; 5, tenderness ; 6, addicted to religious austerities ; 7, mildness of temper ; 8, compassion and mercy ; 9, patience ; 10, peacefulness.

pendant ears like the golden swing of beauty's goddess, Lakshmi.*

* * The numerousness of the Sinhalese poetical works, the paucity of information regarding their writers, the difficulty experienced in the collection of even the little known of them, and the absence of a library to which reference may be conveniently had,—added to my other pursuits (which leave me but little leisure),—do not, I regret, permit me to bring to a close the last division of my paper—the Sinhalese Poets. I have, however, drawn out a few remarks, though even these will, I fear, exceed the bounds which I originally intended for this Paper. I must therefore content myself at present with the following, with a hope of continuing the subject hereafter :—

Kāvīyaśékaré.

“A garland of flowers on the crown of poetry.”

Perhaps no poetical work in the Sinhalese surpasses this in point of originality and depth of thought, and of

* “Her narrow forehead like the crescent moon,” it would seem, savours much of Oriental imagery. English poets have always considered “an ample forehead” or “a spacious forehead” as beautiful; here the very reverse is the admiration of the Sinhalese poet! But, it must be remarked, that however “ample” or “spacious” the forehead, it does not bear any resemblance to the full orb, but the moon in her *vane*. Hence, although the poet has evinced but little taste by his allusion to “her narrow forehead,” he yet, in my opinion, is far more correct than many who have compared the forehead to the full moon. Mr. Wilson, in a note to the *Megha Duta*, at page 106, says: “Comparing a beautiful face to the moon has been supposed peculiar to Oriental poets; instances, however, may be found in English verse. Perhaps that passage in Pope, where, speaking of an amiable female and the moon, he says :—

‘Serene in virgin modesty she shines,’
may not be exactly in point, although the general idea is similar. Spencer, however, is sufficiently precise—

‘Her spacious forehead, like the clearest moon,
Whose full-grown orb begins now to be spent,
Largely displayed in native silver shone,
Giving wide room to Beauty’s regiment.’”

gance and correctness of expression. Its diction is simple, and its imagery sterling and rich. It was written by a Buddhist priest of the name of *Toṭagamuné* (after his native village in the south of Ceylon), properly called *Srī Rahūla Sthavīrayó*, who was the teacher of the celebrated Chandrabhārati, the author of *Bauddha-ṣatake* (බෞද්ධශතකෙ) and two other valuable works—one of which is a commentary on Sanscrit Prosody and the other the well-known *Vīrttimálākhyāva*, (වෘත්තිමාලාකාව.) Toṭagamunwa converted his Hindú pupil to Buddhism, and thereby received the thanks of his countrymen, including his sovereign, Srī Parákrama Báhu VI., 1410. A.D. The poet was a favourite of the king, and continued to benefit by his patronage to the same extent that he had, before taking holy orders, been fostered in the king's household. The priest was not ungrateful to his benefactor. He gave him the most invaluable token of his regard,—the use of his pen; and, besides dedicating the work under consideration to the Princess Royal, Ulkuda Dévi, at whose request it was composed, he addressed to the king several stanzas of great beauty. He possessed a correct knowledge of several Oriental languages besides the EĻu.* Hence the self-importance which he seems to

* The foreign languages of which this scholar was a proficient are enumerated in the paraphrase to the *Seḷalihinī Ṣandésé*. They were six in number: *Sanskrit*, *Maghaḍi* (or *Páli*), *Apabhranse*, *Paisachi*, *Sureseyni*, and *Tamil*.

Most of our readers are probably acquainted with what is meant by *Sureseyni*; but it may not be amiss to state that it is the *Zend*. The *Edinburgh Review* for April, 1810, at pp. 396–97, in reference to a paper written by Dr. Leyden, on the language and literature of the Indo-Chinese nations, says: “Dr. Leyden imagines that the *Páli* may be identified with the *Magahdi*, and the *Zend* with the *Sureseyni* of Sanscrit authors; but without stating the grounds for the conjecture. We conceive that the emigration of the *Sureseyni* under Crisna, from the banks of the *Yamuna* to the shores of the ocean on the west of Guzerat, would afford much countenance to the conjecture, if supported by other proofs.”

have assumed in the *Kāvīyasékaré*, a weakness though common to many, if not all, poets, yet in this instance without, I believe, its parallel in the history of the world. He speaks of himself in the following strain:—

සවිසත කෙල පැමි	භි
ගුරුවන් දෙරණ සපැමි	භි
පිරිසිදු සිල්ගිහි	භි
සියල් ලෝ විසතුන්ට සිඵමි	භි

Like a Brahaspati* on earth renown'd,
The limits of each science fully found,
Radiant with heavenly-derived religion's beams,
On learning's head a living gem he streams.

Literal translation.

Arrived at the end of all sciences,
Like a Brahaspati who entered the earth,
And possessed of an assemblage of pure observances of religious duties,
A gem (am I) worn on the head of all eminent talents in the world.

This is a work which cost the writer years of great labour, although, judging from its easy and unlaboured style, one is led almost to disbelieve the writer's own account of it, that it was commenced 1958 A.B., or 1415 A.D., and was concluded in the 34th year of the reign of Srī Parákrama Báhu VI., who ascended the throne 1953 A.B., or 1410 A.D. For, if the writer brought this work to a termination in the 34th year of the reign of the said king, he must have spent twenty-nine years in the composition of 885 stanzas, unless indeed the dates given in the *Maháwanṣo* cannot be relied upon. He next wrote the celebrated—

* *Brahaspati* :—The teacher of the Hindú gods is often designated by a term supposed to be its equivalent—Jupiter. But this I believe is incorrect, since the one has nothing in common with the other. The Grecian Zeus and the Roman Jupiter is more like Brahma in one sense and like Indra in another. "He is the site of gods and men; also the Thunderer."

Selalihini Sandésé (සැලලිහිනිගන්දේසේ).

“An epistle per *Gracula religiosa*.”

Well indeed may this work be compared to the *Megha Dūta* of *Kalidasa*. The writer's thoughts, brilliant and original, sparkle as we go along his elegant and flowing rhymes. Both the ear and the mind are at once satisfied. His language is free, and has a fascination which words cannot describe. His illustrations are truly original and lively. We shall present the reader with the following specimen :—

- 1.—සැරද සුලකලකුරු මියුරුනෙපුලෙන් රඳනා
රජකුලගස මැනිනිය සියනිහි සැලලිහිනිසඳ.
- 2.—පුල්මල්කෙසරු මෙන් රන්වනේ නෙලෙ සරණයුග
සපුමල්කැනෙව් තුඩ මදරනිනි පැහැස ර
නිලපුල්දෙලෙව් සමවනේ පිය පියපත ර
මලින්කල රුචිව් එබැවින් නුබිනෙනවර
- 3.—නිලද ලදසිදඹුවො දිගුවරලනි ල
නිලදවට බිඟුපෙල අද තඹරනි ල
- 4.—වනදෙවිලියෝ නොකලොද සවණ අබර ණ
එනමග දුකෙක් නොවිද සබදිනි කල ණ
සෙනෙහස බැඳුනුතැන නොහරිණ කරදිවු ණ
වෙන සැප කුමට නොප දකිනා එමපම ණ*

Versified.†

Hail wond'rous bird ! whose wisdom's pow'r is known
To equal theirs before the royal throne—
Bird of the sweet and richly varied lay,
Long may'st thou flourish 'midst thy fellows gay !

* The above, which is the opening address of the poem, is what is called සැහැලි, *Seheli*, consisting of, first, a blank verse ; second, a verse whose four lines are of different feet, except the second and third, which not only rhyme but are equal in their number of feet ; third, half a stanza followed by, fourth, a complete stanza. Of this genus there are divers species.

† For this, as well as the last translation into English verse, I am indebted to Mr. J. R. Blake, and for the following to Mr. A. M. Ferguson.

How does thy feet a golden hue disclose,
So like the pollen of a full-blown rose ?
How does thy ruddy bill enchanting glow ?
Not fairer blossoms can the *champac* show !
And what can match thy wing's superior hue,
Which wave, wide-spreading, like the lotus blue ?
When, beauteous as a vegetable gem,
Which winds have sever'd from its parent stem,
Thou soar'st, exultant, through the balmy air ?
Have not young goddesses made thee their care,
And fix'd thee, fluttering, in their jetty hair ?
And have not bees, who take their nightly rest
Within the water lily's fragrant breast,
Deceiv'd, crowd round thee in their mid career
In search of honey, through the fields of air ?
And have not Dryads, bright in charms divine,
Taught thee as pendants in their ears to shine ?
Friend of my soul ! say, hast thou e'er been prest
With pangs so fierce as those that wound my breast ?
No, happier in thy love, thy life is peace,
And rolling years but bring thy bliss increase ;
Such bliss, as searching the wide world around,
Save in thy presence, friend, is nowhere found.

Literal translation.

O Gracula religiosa ! in wisdom equal to that of ministers of princes, and of speech sweet, and composed of excellent notes ! mayest thou in the company of thy species live long ! When thou, whose (two) feet are of golden hue, like unto the pollen of a full-blown blossom—whose beak partially red and glistening, like unto a cluster of champaka flowers—and whose wings, black and delightfully wide-spread, like unto the leaves of the blue lotus ; (when thou) takest thy airy flight like a flowery figure : have not youthful goddesses dressed thee in their long jet-black (blue) hair ? Have not swarms of bees, which make the lotuses their habitation, approached and encircled thee ? Have not the goddesses of the forest made thee their ear ornaments ? Has no

(such) ill befallen thee in thy journey? Happy friend! who possessest inviolate, and with increasing vigour, an attachment which thou mayest form: what is bliss save that which is known in thy presence?

Toṭagamuwa undertook this work with grateful affection for the king and his country. He felt interested in the welfare of the young family of Parákrama Báhu VI., and indeed sympathised with the Princess Ulkuda, who mournfully longed for a child. The argument of the poem is well conceived. It is an epistle addressed to Vībushana, the presiding deity of the Kēlani temple, invoking the blessing of a grandson to the king (or rather a son to the princess), and as if intended to be conveyed by means of a bird of the name of *Seḷalihini* from Kóṭṭé, the seat of the then Government. No precise date is given in this work, although we learn from other data that it was written a year after the last. It contains one hundred stanzas.

The poet next gave to the world his

Paravi Sandésé (පරවිසඳෙසේ).

“An epistle per a pigeon.”

A poem of great merit, and generally of a piece with the last in style, although perhaps in many parts inferior to it in imagery. It was an epistle addressed to Krishna, invoking blessings upon the army—the king’s brother of the name of Parákrama, who had the government of Jaffna, or Mayaduna—and upon Chandrawati, the granddaughter of the King Parákrama Báhu VI. The poet’s attachment to the family of his sovereign seems to have been indeed great. Even in this there are tender allusions to the royal family. That Chandrawati might soon enter the bonds of matrimony, and that, allied to a noble prince, she might soon be the mother of a virtuous son, are amongst the orisons of the writer and the topics of his song. No date is given to this work; nor is it easy to ascertain it. But from the slight difference of style to which allusion has been

made, I am led to suppose that this was written shortly after the last. I select the following as a specimen of its style :—

සැරද පරෙවිඳසඳ පසුවන් සුරත්සරණින් ||
 පහළ කිරිමුහුදින් සහ පබලපපලසක්වන්—
 මිතුරුතුරු සරහන මිමිතුරු නවවසන සුරු—
 නුඹනෙතසඳ නද මදමද පවතලෙ ලී
 හෙබිපුල් කුමුදු හැහැ නොගතුද අතින්හි ලී
 සුරගහිතල නෙළුමුදුලිස දහස නොවෙනපත—
 සුදුබුදුනිවසිනෙත නොපදක ලෙවි එස ද
 සුදුබුදුරැස්පිඬෙකැසි නොකලෝද පු ද
 සඳෙකින් නඳනුයනිනෙතමලෙක සුරන මේ
 සඳෙකින් ලොබින් වටලා නොදමුද ඉ මේ
 නිදුකින් අවිද සකිසඳ අතරමගනු මේ
 ඉතිකින් අපට සැපනම් දක්මමයි නු මේ

Versified.

Hail ! beauteous dove, the subject of my lay ;
 Long may'st thou live, through heaven's blue vault to stray !
 When on thy sacred mission thou had'st sped,
 With plumage white and feet of roseate red :
 Like one of those pearl-gleaming shells that rest
 On coral stems in milky ocean's breast ;
 Like the star-spangled, clear, autumnal sky ;
 When borne on gentlest breeze thou passed'st by,
 Did not the gazers hail a lily given,
 Full-blown and bright—a blossom dropt from heaven ?
 Did'st thou not seem, with thy soft pinion's quiver,
 A lotus-bud from the celestial river ?
 Did they not off'rings make, and homage pay,
 As unto Buddha's brightest, purest ray ?
 Did not e'en goddesses, delighted kiss,
 What seemed a flower from Indra's bowers of bliss ?
 Hast thou unscath'd pursued thy airy flight ?
 Hail noble friend, dear to our longing sight !

Literal translation.

Mayest thou, O noble pigeon, live long ! My friend ! by reason of thy yellow-white hue and deeply red feet, like unto a chank with coral plants produced from the milky ocean—like unto the clear autumnal (sky) bespangled with the sun and the stars ! when thou wast slowly moving in the sky, and in a delightfully gentle breeze, were not (people) deceived in thee for a beautifully full-blown white lily dropt from (heaven) ? Did they not approach thee under a belief that thou wast a lotus-bud fallen off from the celestial river ? Did they not make offerings to thee under the impression that thou wast a white ray emitted from Buddha's pure court ? Did not goddesses kiss thee with delight under the mistaken idea that thou wast a flower from Naṇdene, the heavenly park ? Hast thou arrived without accident in thy aerial journey ? Noble friend ! To us thy sight is bliss !

Although many were the writings of this eminent scholar, the only other work handed down to us with the sanction of his own name is *Moggallāyaṇa Patipaṇchaká* (මොග්ගලයාන පඨිපච්ඡක), a commentary on the Páli grammar written by a pandit of the name of *Moggallāyaṇa*.

Perakuṇḁbá Sirité

(පැරකුණබාසිරිතේ).

“The character of Parákrama Báhu.”

Although the poet has not given us his name, we yet have internal evidence sufficient to justify the conclusion, consistent with a tradition on the subject that the above was written by the author of the last. It is true that, unlike the rest of the great writer's works, this contains a great admixture of the Sanskrit ; but, nevertheless, wherever the language is purely EĻu, it has indubitable evidence of the great scholar's style, his masterly and peculiarly fine turns of expression, and his originality and depth of thought. From this and the *Seḷalikhini Śandésé* and *Paravi Śandésé* we may select three verses written of the reigning sovereign, in the same measure, with the same rhymes, and

the same peculiarity of expression, but with an originality of thought in each which is surprising, and certainly uncommon. Many a sentiment of the writer in praise of Parákrama Báhu, whose character and virtues the poet has delineated in this work, is indicative of the kind feelings which he entertained towards his patron and sovereign, and the knowledge he possessed generally of his country's history. This poem may indeed be ranked amongst, and is by no means inferior to, the rest of the supposed writer's works, but for the admixture of foreign words, which, it appears to me, the writer intentionally introduced with a view to adorn his Sinhalese with the glittering ornaments to the celebrated "language of the gods"—the Sanskrit. The following will serve as a specimen :—

පැහැදිසර මබා රැදි මහර මබා
 තුනුසිරර මබා පති පිළිබි මබා
 රුපුරණර මබා වන මහතු මබා
 දින පැරතු මබා හිමි තෙවතු මබා

Prosper thou Lord Parákrama Báhu ! who hast a gentle arm like Krishna's—an arm which is the abode of the lovely Laksmi—who art beautiful as the consort of the goddess Ramba, and powerful as an enraged elephant in the battlefield-like plantain estate.

Kovul Sandésé (කොවුල්ගන්දේසේ).

"An epistle per an Indian cuckoo."

This is a poem which sustains a like character as the last, and written by Totagamuwa's contemporary, Irugalkulé Pariwenádhpati, the presiding priest of Mulgiri-gala. The writer in this poem seeks a blessing from Krishna, the deity presiding over the temple at Devundara (Dondra Head), upon Prince Sengapperumal, or Sapumal, the son of Parákrama Báhu VI. ; and also prays that the war in which the prince was then engaged at Jaffna (probably in support

of his uncle against A'riya Chakkravartti, the king of Karwati) might prove victorious. Again, no date is to be found in this work. Mention, however, is made of the prince ; and the war is spoken of in terms which clearly indicate that his success was uncertain at the time the poet wrote. But *Seḷalihinī Sandésé*, which we have above considered, alludes to the same war, and the poet joins in the general shout of joy amidst which the prince was then returning to his father at Kótté after a successful encounter with his country's foes. We are thus led to conclude that the work under consideration was written at most a few months, if not weeks, before *Seḷalihinī Sandésé*. The following is a specimen from the work under consideration :—

තෙවලාසත්ථවන්තර පැලදිලරතු	ම
තෙවලාවදනිසුරු විජයබතෙරිඳුතු	ම
සබාසමුවලොවවෙසෙසින්පෙනුනලෙ	ස
සබාසකවිබැඳුන්සඳතෝපිවි	ස
සුබාසුරිඳුසසුමල්කුමරුවැනුය	ස
සබාසයෙන්අස්නක්ගෙනයෙමිපව	ස

O bird ! enter thou into (the presence) of the chief of the temple, Wijaya Báhu, supreme master of the Tripiṭaka doctrines, adorned (in his neck) with the golden garland of Piṭa-kattīya, and amidst his poetical labours in the six languages exhibiting to the world the same beautiful but natural form that Kanda Kumára presented ; and say that thou carriest an epistle in the native language expressive of the prosperity of the India-like Prince Sapumal.

(*To be continued.*)

LIST OF MAMMALIA OBSERVED OR COLLECTED IN CEYLON.

By E. F. KELAART, M.D.

Order PRIMATES.

Family SIMIADÆ.

1. *Presbytes cephalopterus*, The Nestor, *Kalu Wandurá*.
Zimm.
- Var. b. monticola, nobis.* The Kandyan variety.
2. *Presbytes Thersites, Elliot.* The Jaffna Monkey, *El Wandurá*.
3. *Presbytes Priam, Elliot.* The Crested Monkey, *Kondé Wandurá*.
4. *Macacus Sinicus, Linn.* The Bonnetted Macaque, *Rilawá*.

Family LEMURIDÆ.

5. *Loris gracilis, Geoff.* The Loris, or Sloth, *Una Hapulurá*.

Family VESPERTILIONIDÆ.

6. *Pteropus Edwardsii, Geoff.* The *Roussette*, or Flying Fox, *Maha Vanulá*.
7. *Pteropus seminudus, n.* The smaller variety.
sp., nobis.
8. *Cynopterus marginatus,* The Margin-eared Bat, *Kotakan Vanulá*.
Gray.
9. *Megaderma lyra, Geoff.* The Megaderm.
10. *Hipposideros Templetonii, nobis.* The Horse-shoe Bat.
11. *Hipposideros atratus, n.b.* Species of same.
12. *Hipposideros Lankadiva, n. sp., nobis.* Large Horse-shoe Bat.
13. *Rhinolphus rubidus, n.* Red Horse-shoe Bat.
sp., nobis.

14. *Rhinolphus*, *n. sp.*? Kaḍugannáwa species.
 15. *Nyctcejus* *Heathii*, The Barbastelle.
Horsf.
 16. *Nyctcejus* *Isabellinus*, New species of same.
Blyth.
 17. *Kirivoulha picta*, *Gray*. The Painted Bat, *Kehe*
Wawulá.
 18. *Taphozous Longimanus*, The Long-armed Tarphien.
Hard.
-

Order FERÆ.

Family FELIDÆ.

A.—FELINA.

19. *Leopardus varius* (*Felis* The Leopard, or Chetah, *Kot-*
Leopardus). *iyá.*
Var. melas. Black variety of same.
 20. *Felis viverrinus*, *Hodg-* The Tiger Cat, *Handun*
son. *Diviyá.*
 21. *Felis Chaus*? The Lynx-like Cat, *Kula*
Diviyá.

B.—VIVERRINA.

22. *Viverricula* (*Viverra*) The Indian Genette, *Urulévá.*
malaccensis, *Horsf.*
 23. *Herpestes vitticollis*, The Streaked Mongoose.
Elliot.
 24. *Herpestes griseus*, *Sykes* The Common Mongoose,
Mugaṭiyá.
 25. *Herpestes flavidens*, *n.* } These may turn out to be
sp.? nobis. } two new species recently dis-
 26. *Herpestes rubiginosus*, } covered by Mr. Waller Elliot.
n. sp., nobis. }
 27. *Paradoxurus Zeylanicus*, The Golden Paradoxure.
Schreb.
Var. b. fuscus. Black-brown variety of same.
 28. *Paradoxurus typus*, *F.* The Palm Cat, *Uguḍuná.*
Cuv.

C.—MUSTETINÆ.

29. *Lutra nair*? *Sykes.* The Otter, *Diya Balla.*

D.—CANINA.

- 30 *Canis aureus*, *Linn.* The Jackall, *Nariyá.*

Family URSIDÆ.

31. *Ursus labiatus*, *Blainv.* The Indian Bear.

Family TALPIDÆ.

32. *Sorex murinus*, *Linn.* The Musk Shrew, *Kunu Míyá.*
 33. *Sorex montanus*, *n. sp.*, The Black Mountain Shrew.
nobis.
 34. *Sorex feroculus*, *n. sp.*, The Long-clawed Shrew.
nobis.
 35. *Sorex ferrugineus*, *n. sp.*, The Dimbula Shrew.
nobis.

Two specimens of Hedgehogs are in the Army Medical Officers' Museum at Colombo, but it is doubtful whether they are natives of Ceylon.

Order CETÆ.

36. *Halicore dugong*, *F.* The Dugong, *Mudú Urá.*
Cuv.

Species of Dolphins, Porpoises, and Whales are also occasionally found in the neighbouring seas.

Order GLIRES.

Family MURIDÆ.

37. *Mus bandicotta*, *Bechst.* The Bandicoot, or Pig Rat.
 38. *Mus decumanus*, *Linn.* The Common Brown House Rat.
 39. *Mus Kandianus*, *n. sp.*, The White-bellied Rat of the
nobis. Kandyan Province.
 40. *Mus Asiaticus*, *Gray.* Paddy-field Rat.
 41. *Mus arboreus*, *B.H.M.S.* The Large Tree Rat.
 42. *Mus Ceylonus*, *n. sp.*, Small Outhouse Rat of Co-
nobis. lombo.
 43. *Mus musculus*, *Linn.* The Mouse.
 44. *Mus nuwara*, *n. sp.*, *nobis.* The Nuwara Eliya Soil Rat..

45. *Mus coffæus*, *n. sp., nobis.* The Coffee Plantation Rat.
 46. *Mus tetragonurus*, *n. sp., nobis.* The Four-sided Tail Rat of Colombo.
 47. *Mus dubius*, *n. sp., nobis.* The Short-tailed Godown Rat of Kandy.

48. *Gerbillus indicus*, *Cuv.* The Indian Yerboa,

Family HYSTRICIDÆ.

49. *Hystrix leucurus*, *Sykes.* The Indian Porcupine, *Itévá.*

Family LEPORIDÆ.

50. *Lepus nigricollis* The Indian Hare, *Hává.*

The Rabbit and Guinea Pig have been introduced in the Island.

Family JERBOIDÆ.

51. *Sciurus macrurus*, *Forster.* The Rukiah, *Dañdu Léná.*

Var. b. moutanus, *S. Tennantii.* The mountain species.

52. *Sciurus tristriatus*, *Waterhouse.* The Palm Squirrel, *Léná.*

53. *Sciurus sublineatus* (trilineatus), *Waterhouse.* The Olive-coloured Squirrel of Nuwara Eliya.

I have not yet seen the *S. Layardii*, *Blyth*, *S. Brodei*, *Blyth*, nor the *S. Kelaartii* of *Layard*.

54. *Pteromys oral*, *Blyth and Tickell* (*P. petaurista* of former list) The Flying Squirrel, *Egallé Léná.*

55. *Sciuropterus Layardii*, *n. sp., nobis.* The Flat-tailed Flying Squirrel of Dimbulla.

Order UNGULATA.

Family BOVIDÆ.

A.—BOVINA.

56. *Bos taurus*, *var. Indicus.* The Indian Ox, *Haraká.*
 57. *Bubalus buffelus*, *Gray.* Tame and Wild Buffalo.

Varieties of Sheep and Goats are also domesticated.

B.—MOSCHINA.

58. *Memmina indica*, *Gray*. The *Memmina*, or Indian Mouse Deer, *Wal Muvá*.

C.—CERVINA.

59. *Muntjacus vaginalis*, *Gray*. The *Muntjac*, or Ceylon Red Deer, *Veli Muvá*.
 60. *Axis maculata*, *Gray*. The Spotted Deer, *Tik Muvá*.
 61. *Cervus* (species not identified). The Paddy Field Deer.
 62. *Cervus hippelaphus*, *Cuv*. The Rasse, or Sambur Deer, *Góná*.

The Horse and Ass are also introduced in the Island. Mules are rarely seen.

Family ELEPHANTIDÆ.

A.—ELEPHANTINA.

63. *Elephas indicus*, *Cuv*. The Indian Elephant, *Aliyá*.

B.—SUINA.

64. *Sus indicus*, *Gray*. The Indian Wild Boar, *Wal Urá*.

The domesticated Hog (*S. scrofa*, var. *Sinensis*) is plentiful in the Island.

Family DASYPIDÆ.

65. *Manis pentadactyla*, *Linn*. The Pangolin, or Scaly Ant-eater, commonly but erroneously known in the Island as the Armadillo, *Kebellvá*.

The words in italics after the English are the Sinhalese names.

DESCRIPTION OF NEW SPECIES AND VARIETIES OF MAMMALS FOUND IN CEYLON.

BY E. F. KELAART, M.D.

PRESBYTES CEPHALOPTERUS, *var. b.* MONTICOLA, *nobis.*

THE variety of the Nestor, found in great abundance in the higher parts of the Kandyan Provinces, differs from the low country animal chiefly in the absence of the white on the croup and inside of the thighs. It also attains a larger size, is stouter limbed, and is generally of a darker colour, with a rufous tinge on the neck, and the hair longer and more wavy.

Mr. Blyth, to whom I sent a specimen from Nuwara Eliya, is inclined to consider this a distinct species; at all events, he thinks that it bears the same affinity to the *P. cephalopterus* of the jungles of the low country as *Sciurus Tennantii* of Layard does to *S. macrurus*. This is the large monkey noticed in Colonel Forbes' work on Ceylon as inhabiting Nuwara Eliya. A female specimen killed at Nuwara Eliya measured as follows:—

		ft.	in.
Length from vertex of head to root of tail	...	1	5½
„ of tail	...	2	2
„ from ear to chin	...	0	3½
„ of forearm	...	0	7
„ of palm	...	0	2¼
„ from knee to heel	...	0	7¼
„ of foot	...	0	6
„ of sole	...	0	4

This is but a medium-sized specimen. The one sent to Mr. Blyth was larger. They are usually seen in large

numbers jumping on the trees, and when disturbed make a peculiar short howling noise. One was known to have attacked a cooly on a coffee estate carrying a rice bag. The Malabars eat the flesh of this monkey, and consider it very delicious food ; and some Europeans who have tasted it are of the same opinion.

✕ *HIPPOSIDEROS TEMLETONII*, *nobis*.

Rhinolphus Voulha,* Temp.

Above dusky brown, this colour being confined to the tips of the hairs, the rest being grayish. Beneath, lighter coloured. In males, above and behind the complicated nasal appendage there is the cup-like depression containing a waxy matter, apparently secreted by a glandular body placed under the skin, so often seen in other species of *Hipposideros*. Tail exerted for about one-eighth inch.

Length of head and body ...	...	3 inches.
Tail ...	...	1 „
Expanse ...	...	11 „

Dr. Templeton has fully described this species and the next, which he was inclined to believe was only a variety, in his unfinished Catalogue of Ceylon Mammals.

HIPPOSIDEROS ATRATUS, *nobis*.

Rhinolphus ater, Temp.

Smaller than the last ; tips of hair sooty blackish brown, the rest silvery grey ; membrane, also darker coloured, beneath fuscus.

Both these species are common in old buildings in Colombo. I have also seen them in Kandy.

RHINOLPHUS RUBIDUS, *n. sp.*, *nobis*.

Head and body of a deep orange red colour ; membrane pale brown ; interfemoral membrane, enclosing the whole

* *Varulá* is a very vague term for a species of bat, for *Varulá*, the Sinhalese word, applied to all bats.

tail, and the free edge running almost in a straight line and rounded off near the tail.

Length of head and body	...	1½ inch.
Length of tail	...	0¾ „
Expanse	...	8 „

I am unable to give a description of the complicated nasal processes, as all the specimens received were dried and imperfectly preserved. This beautiful bat is seen at Kaḍugannāwa (2,000 feet) only for a few days in the month of August.

RHINOLPHUS, n. sp.?

Rufescent brown; face slightly fulvous; round the ear and on the sides of the posterior half of the body bright fulvous; tail enclosed in the interfemoral membrane.

Head and body	...	2½ inches.
Tail	...	1 „
Expanse	...	11 „

Only one dried specimen procured by my brother from Kaḍugannāwa. None seen since.

HERPESTES FLAVIDENS, n. sp., nobis.

Yellowish brown; hair annulated with brown and yellow rings; tips yellow; tip of tail of a reddish colour; muzzle blackish; chin flesh-coloured; face brown and slightly ferruginous; ears fulvous, thickly clothed with hair; feet blackish; soles, $\frac{3}{4}$ bald. A full-grown specimen obtained at Kandy measured as follows:—

	ft.	in.
Length of head and body	...	1 4½
Tail	...	1 0¼
Planta	...	0 3
Palma	...	0 1¾
Small intestines	...	4 5
Large intestines	...	0 7½
Cæcum (pointed)	...	0 2
Stomach and pylorus	...	0 4½

This species was supposed hitherto to be only a variety of *H. griseus*, but there are strong characteristic differences between the two—the golden yellow rings and tips of hair are very marked. Generally found in the higher parts of the Island. I obtained one of a very deep brown and yellow colour from Nuwara Eliya.

HERPESTES RUBIGINOSUS, *n. sp., nobis.* *Dito*, Sin.

Reddish and ferruginous brown—more of the red on head and outer sides of legs. Hair annulated black and white, and terminating in long reddish points; muzzle flesh-coloured; sides of nose and circle round the eyes of a light rusty colour; feet black; tip of tail black.

Nearly as large as the *H. vitticollis*. I am indebted to my friend Mr. Casie Chitty, District Judge of Chilaw, for a live specimen of this animal, among several others which he very kindly placed at my disposal.

PARADOXURUS ZEYLANICUS, *var. FUSCUS.*

Beetle brown throughout; no streaks on the back perceptible; fur very glossy; a bright golden yellow subterminal ring to the tail.

Size of the other variety. At first I supposed this to be another species. It was killed at Nuwara Eliya. In every respect, except the colour, it corresponded with the ordinary coloured *P. zeylanicus*.

SOREX MONTANUS, *n. sp., nobis.*

Fur, above soft sooty black, beneath lighter coloured; whiskers, silvery gray, and long; lower part of legs and feet grayish, clothed with dressed hair; toes, five; six tubercles on soles, in pairs; claws short, whitish; ears large, round, naked, outer margin lying on a level with the fur of the head and neck, the ears being thus concealed when seen from behind; tail tetragonal, tapering, shorter than the head and body, covered with short dark brown hair.

and among these are scattered longer silky hairs, of which a few are also seen in the posterior and inferior parts of the body.

A specimen found at Pidurutalágala (8,000 feet) measured as follows :—

Length of head and body	...	3 $\frac{3}{4}$ inches.
Length of tail	...	2 $\frac{1}{4}$ „
Length of hind feet	...	8.12 „

I am indebted to Mr. Montenach, H. M. 15th Regiment, for this and many other interesting animals of Nuwara Eliya. This black shrew is also found in other parts of the Kandyan Provinces.

SOREX FEROCULUS, *n. sp., nobis.* 211

Fur soft, above bluish black, beneath lighter coloured ; tail black, rounded, tapering ; tip naked, flesh-coloured ; claws white, those of the fore feet elongated, compressed, acute. It is somewhat larger and fuller in the face, but in many other respects this animal resembles the last described. It is a spirited lively animal even in confinement.

SOREX FERRUGINEUS, *n. sp., nobis.* 212

Fur soft, ferruginous brown, washed with blue, smaller than the *S. montanus* ; feet and legs naked. Large secretory glands on the pubis ; odour very disagreeable. No cetæ or glands could be traced on the two other species, nor had they any of the smell.

I am indebted to Mr. Alexander Gordon, of Dimbula, for a specimen of this small shrew, which he found on a coffee estate.

There are two other larger black shrews than any of those now described, one in the possession of Mr. Thwaites, of Pérádeniya, and the other—with a very powerful musky odour, stronger even than in the *S. murinus*—occasionally seen in the godowns at Kandy, of which further notice hereafter.

12 * MUS KANDIYANUS, *n. sp.*, *nobis*; *Mus Albiventer*, MS.

Fur very soft and silky; above yellow brown, beneath and inside of limbs milky white; hair of back and upper parts lead colour, with yellow and black tips, the latter fewer; whiskers black, very long, a few shorter grayer ones; ears large, ovate, slightly villous; feet grayish-flesh-coloured; claws, white those of the fore feet short; rudimentary thumb clawless; claws of the three middle subequal; hind toes acute and longer, overlapped with gray hairs; soles bald, flesh-coloured; five tubercles to fore and six to hind soles; internal and hinder tubercle of the latter elongated; tail, longer than the head and body, scaly, and covered with short dressed black hair, which are longer towards the extremity; cutting teeth smooth, yellow.

Length of head and body	...	6½	inches.
Length of tail	...	7½	„
Palma	... ..	5 5-12	„
Planta	... ..	1 12-12	„

12 This is one of the common house rats of the Kandyan Provinces. The specimens from Nuwara Eliya are larger, and the fur softer and of a deeper lead colour than those from Kandy, Badulla, or Kurunégala. As there is more than one white-bellied species of rat in the Island, the term *Kandiyanus* has been substituted for *albiventer*.

13 MUS CEYLONUS, *n. sp.*, *nobis*.

Fur soft, lead colour, that of upper parts tipped with fawn colour; ears large, naked; whiskers black, moderately long; tail brown, scaly, and covered with short adpressed brown hair; feet brown; soles purplish.

Head and body	...	4¾	inches.
Tail	... ..	5	„

This small rat is found in outhouses in the Cinnamon Gardens, Colombo.

MUS NUWARA, *n. sp., nobis.*

Fur very soft, above of a deep yellow olive brown colour, beneath yellowish gray; hair of the upper part of the head and body of lead colour, with some longer silky black ones, both tipped golden yellow; hair of lower part of a lighter lead colour; tail shorter than the body, tapering, scaly, and covered with adpressed hairs; superior surface brown, and inferior light yellow; feet yellow brown; soles nearly bald, blackish; claws purplish; rudimentary thumb clawless; four tubercles to the soles of the fore feet and four tubercles to the hind soles; incisors yellow, upper ones grooved in the middle.

Length of head and body	...	$3\frac{1}{4}$	inches.
Length of tail	...	$2\frac{1}{4}$	„

This small rat is found in pairs in the black soil of Nuwara Eliya, especially in the potato fields.

MUS COFFÆUS, *n. sp., nobis.*

Fur thick, stiff above yellow, mixed with brown; beneath, yellow gray or tawny; face rough; whiskers short, thin, black, a few gray; hairs of upper parts flattened, ashy gray, and tipped yellow; some thinner and longer ones also tipped yellow, with subterminal black band; under fur soft, and of a light lead colour; ears moderate, subovate, villious, yellow ferruginous; tail round and tapering; upper surface dark brown, lower yellow-gray; cutting teeth yellow; upper incisors grooved, as in the last.

Length of head and body	...	$4\frac{1}{2}$	inches.
Tail	...	4	„

The above description is from dried specimens. This is the rat which is so troublesome to coffee estates in some seasons of the year, when probably from scarcity of their ordinary food they cut and eat the coffee berries and buds. Both this and the *Mus nuwara*, I am inclined to think, are

allied species to *Mus hirsutus* of India, but I have neither specimen nor description of that rat, except the small notice of it in Mr. Walter Elliot's Catalogue, which he has kindly sent me. However, as Mr. Elliot has now a specimen of the coffee rat from me, he will be able to determine the relation.

SCIUROPTERUS LAYARDII, *n. sp., nobis*; *S. Fuscocapillus?* Jerdon.

Fur soft, moderately long; upper surface of rufous chestnut colour, beneath gray; hairs of upper surface of body blackish to near the tips, which are of a rufous dark brown colour; under parts of neck and cheek slightly ferruginous; face and head blackish, mixed with gray; whiskers long and black; legs deep brown; feet grayish; membrane brown above and gray beneath, and upper part of the former of a velvety black, with a soft delicate white fringe on the border. Tail flat and broad, lighter chestnut than the body, washed with black.

		ft.	in.
Length of head and body ...	...	1	2
Tail ...	...	0	11½

I am indebted to Messrs. Palliser, of Dimbula, for this and many other interesting specimens. This is the first time that a second species of flying squirrel has been noticed in Ceylon. Mr. Blyth, who has examined this specimen, is inclined to think that this is a full-grown specimen of the *S. fuscocapillus* of Jerdon (Jas. B., 1847, page 867), but he could not well decide, as he had no specimen of the latter to compare it with. The description certainly does not in all respects correspond with the characters of the Ceylon animal.

DESCRIPTION OF ADDITIONAL MAMMALS.

By E. F. KELAART, M.D.

PTEROPUS SEMINUDUS, *nobis*.

New species of Frugivorous Bat.

Body slightly covered with light brown fur ; membranous expansion of a darker brown colour ; interfemoral membrane deeply emarginated ; head and body $5\frac{3}{4}$ inches ; head alone $1\frac{7}{8}$ inch ; tail $\frac{3}{4}$ inch ; expanse 1 foot 8 inches.

I am indebted to the Rev. Dr. Macvicar for a specimen of this hitherto undescribed bat, found at Mount Lavinia.

HIPPOSIDEROS LANKADIVA, *nobis*, *n. sp.*

Ceylon Gigantic Horse-shoe Bat.

Ears large, acuminate, and emarginated externally near apex ; transverse striæ on inner surface naked, with the exception of the inner edge ; muzzle short, but face rather prolonged ; body long, covered with soft, dusky, rufous brown fur, which is grayish at the basal termination ; head, neck, and beneath of a lighter brown colour ; pubis hairy ; interfemoral membrane acuminate to tip of tail, which is not exerted ; no frontal sac, but two tubercular points from which grow stiffish hairs.

A full-grown male measured as follows :—

Length of head and body	...	$4\frac{1}{4}$ inches.
„ of tail	...	2 „
„ of forearm	...	2 „
„ of tibia	...	$1\frac{1}{2}$ „
„ of carpus	...	$1\frac{3}{4}$ „
„ of tarsus	...	$0\frac{1}{3}$ „

Ears, $\frac{5}{8}$ in. broad, and nearly as long. Space between ears, $\frac{3}{4}$ inch. Weight, 2. oz. $3\frac{1}{2}$ drs.

This bat is found in great abundance in and about Kandy. I have several fine specimens from the Kurunégala tunnel, which swarms with them. This is the largest of all horse-shoe bats hitherto seen in Ceylon. I have ventured to consider it new, as it is not to be found in Mr. Blythe's Monograph of Indian Bats.

MUS TETRAGONURUS, *nobis*, *n. sp.*

Four-sided Tail Rat.

Fur above fulvous brown, mixed with longer black-tipped lead-coloured hairs, beneath grayish ; whiskers long, black ; ears moderate, naked ; feet brown, hairy ; tail longer than the head and body, four-sided, scaly, covered with very short thin adpressed hairs.

Head and body	...	6 $\frac{3}{4}$ inches.
---------------	-----	-------------------------

Tail	...	7 $\frac{1}{2}$ "
------	-----	-------------------

I have only seen one specimen of this rat from Hendala, near Colombo, procured by Mr. Gill, to whom I am indebted for some rare animals.

MUS DUBIUS, new species, or a marked variety of

MUS KOK of *Elliot*.

Fur soft, mixed with black and rufous brown ; under fur lead colour, beneath grayish, washed with rufous on the sides ; whiskers few, moderately long, black, some with gray tips ; tail shorter than the head and body, scaly, and covered with short, soft, black hair ; feet grayish brown, and middle toes subequal, and rudimentary thumb with a short, broad claw ; ears moderate, villose ; head and body, 7 $\frac{1}{2}$ inches ; head 1 $\frac{3}{4}$ inch ; tail 5 $\frac{1}{2}$ inches ; length of small intestines 3 ft. 4 in. ; large 11 in. ; cœcum 2 in. ; stomach 3 in.

This is the common outhouse rat of Kandy. It appears to replace the well-known brown rat (*M. decumanus*). The common house rat is the white-bellied variety, *Mus kandiaus miki*.

APPENDIX.

PROCEEDINGS OF MEETINGS.

GENERAL MEETING.

June 9, 1849.

Major Lushington in the chair.

Read and confirmed Minutes of last Meeting.

The following gentlemen were then proposed, ballotted for, and admitted Members of the Society :—

J. C. Chitty, Esq., proposed by J. Capper, Esq., seconded by Dr. Willisford.

L. de Soyza Mohandiram, proposed by E. C. Caldwell, Esq. (proxy), seconded by J. Capper, Esq.

D. Smith, Esq., proposed by R. E. Lewis, Esq., seconded by J. Steuart, Esq.

Museum.

The following donations were then presented to the Society's Museum :—

A case containing 96 specimens of the timbers of Ceylon, with a catalogue of their names, specific gravity, uses, and durability, &c., by A. Mendis, W. S. Mohandiram of Moratuwa.

Master Carpenter, Royal Engineers' Department, ten specimens. Additions to the same by J. Capper, Esq.

Seeds of the tea plant grown at Pusselláwa, by Messrs. Worms. Barley grown at Nuwara Eliya : specimens in the ear.

Balls of *Scarabeus Socu* (Sacred Beetle of Egypt), E. L. Layard, Esq.

Specimen of black coral, A. Mendis Mohandiram (this splendid specimen is a smooth slender shaft upwards of six feet long, affixed to a stone ; unfortunately the extreme end has been broken off).

Five specimens of the genus *Heliodorus* (Swain), J. E. Middleton, Esq.

Specimen of iron found at Galle in digging a well, by G. Gunewardena, Esq.

A Dutch silver coin, De Perera Mudaliyár.

Read a letter from Mr. Justice Stark expressive of his regret at not being able to attend the Meeting, and forwarding for the inspection of the Members the following coins and a Buddha :—

Two Dutch coins, gold, 1763, silver, 1765 ; one Batavian copper coin, 1644 ; 1 Portuguese silver coin, 1640 ; one Hindu copper

coin; 3 specimens of the *Ridimassa*; one Scotch doit of King Charles' time.

Mr. Layard also exhibited an alabaster Buddha from Siam.

Fifteen copper coins dug up at a temple at Kotté, presented by L. de Soyza, Mohandiram.

Library.

Twelve volumes of the Transactions of the Batavian Society of Arts and Sciences, in Dutch, presented by the Society, with a translated Index of Contents by Rev. J. D. Palm.

Calcutta Review for March, 1849.

Journal of the Bengal Asiatic Society.

The Society's Journal of the Eastern Archipelago.

Journal of the Statistical Society of London.

Journal of the Geological Society of London.

Travels of the Chinese Traveller Fa Hi Han, by the Editor and Translator, Mr. Laidly.

Moved by Edgar L. Layard, Esq., seconded by J. Capper, Esq., "That with a view to facilitate the selection of Papers for publication, a Council should be appointed, and that the matter be referred to the General Committee for their report."—Agreed to.

The following Papers were read :—

On the Monetary System of Ceylon, by James Steuart, Esq.

Analysis of the Coffee Plant, with the Manures best adapted to the same, by Dr. Rudolph Gyax.

Sketch of the Natural History of Ceylon : Part I., Mammalia, by Edgar L. Layard, Esq.

Mr. Caldwell (by proxy) begged to withdraw his Paper.—Allowed.

GENERAL MEETING.

December 1, 1849.

Rev. D. J. Gogerly in the chair.

The Minutes of the preceding Meeting were read and confirmed.

Three recommendations from the Committee were then read, and in pursuance of those recommendations it was resolved :—

1. That the Proceedings of each General Meeting be published as soon as possible after such Meeting, and circulated among the Members.

2. That the Journal be published whenever and as often as sufficient matter be collected.

A letter was then read from E. L. Layard, Esq., laying before the Society some propositions from the Jaffna Members. The

Secretary was requested to communicate with Mr. Layard on the subject, asking for further particulars as to the objects they had in view.

A letter from Mr. Mooyaart was read, offering to co-operate with the Society in the introduction of the cochineal insect into the Island, on condition of the Society's bearing the expenses thereby incurred. It was resolved, that the objects proposed by Mr. Mooyaart did not come within the scope of the Society.

The correspondence with the Bombay Geographical Society was then read.

In reference to one of the Papers subsequently read, on the Tamil System of Natural History, the Secretary was requested to inquire whether the classification of animals given in the Paper is that of the Niganda.

The following gentlemen were ballotted for and elected Members of the Society :—

E. H. Burrows, Esq., proposed by Sir J. E. Tennent (proxy), seconded by J. O'Halloran, Esq.

Robert Davidson, Esq., proposed by E. L. Layard, Esq. (proxy), seconded by J. Capper, Esq.

Dr. Kelaart, proposed by Major Lushington (proxy), seconded by E. C. Caldwell, Esq.

Museum.

The following donations to the Museum were laid on the table and the thanks of the Society voted to the donors :—

A collection of corals, from J. N. Mooyaart, Esq., Trincomalee.

A collection of corals, from J. E. Middleton, Esq.

A case of shells, from J. Swan, Esq.

A case of birds, from A. O. Brodie, Esq., Puttalam.

Copy of ancient rock inscription, from A. O. Brodie, Esq. Puttalam.

A petrified seed vessel, from W. S. Taylor, Esq., Batticaloa.

Specimen of the wood of the *Ritigaha*, and a bag made of the bark, as used by the Veddás, from E. R. Power, Esq.

Fifty-two specimens of Kandy woods, from E. de Saram, Esq.

Some iron pyrites, from C. Whitehouse, Esq., Jaffna.

An antique stile, from G. Goonewardana, Esq.

Papers.

The following Papers were read :—

1. On the Tamil System of Natural History, by Simon Casie Chetty, Esq.

2. Catalogue of Books in the Tamil Language, with notes of their contents, by Simon Casie Chitty, Esq.

3. Prison Discipline in Ceylon, by A. G. Green, Esq.

4. On some supposed Footprints in a Rock near Kurunégala, by A. O. Brodie, Esq.

Library.

The following additions to the Library were laid on the table, and the thanks of the Society voted to the donors of such as were gifts :—

A Meteorological Diary from Batticotta, July to September, 1849.

A Meteorological Diary from Trincomalee.

Four numbers of the Journal of the Asiatic Society of Bengal, from the Society.

Six volumes of the Transactions of the Geographical Society of Bombay, from the Secretary.

Three numbers of the Journal of the Asiatic Society of Bombay, from the Society

The Calcutta Review for September.

Four numbers of the Journal of the Eastern Archipelago (June to September), from the Editor.

A number of the Journal of the Statistical Society of London.

A number of the Journal of the Geographical Society of London.

Contributions to Knowledge, vol. I., from the Smithsonian Institution of America.

Pilgrimage of Fa Hian.

Orientalists' Guide, from Dr. Willisford.

Pamphlet on Artesian Wells, by Dr. Kelaart.

GENERAL MEETING.

February 23, 1850.

Rev. D. J. Gogerly in the chair.

The Minutes of the preceding Meeting were read and confirmed.

Three recommendations of the Committee were discussed, in accordance with which it was resolved :—

1. That the Committee be authorised to expend in the purchase of two cases the funds necessary for that purpose.

2. That the Society, fully concurring in the expediency of taking steps towards securing to themselves the use of the entire room which they occupy, do leave the Committee to choose a fitting opportunity for moving in the matter.

3. That the Society, deeply interested in all that relates to the industry of the Island, undertakes to procure and forward to England such objects as may appear suitable for the exhibition of the works of industry of all nations, to be held in 1851, and that the Committee of Management do at once proceed to take steps for this purpose.

The following gentlemen were then ballotted for, and elected Members of the Society:—

The Hon. J. Cauldfield, Esq., proposed by A. O. Brodie, Esq., seconded by J. Capper, Esq.

F. Straube, Esq., proposed by J. Capper, Esq., seconded by E. C. Caldwell, Esq.

—Flanderka, Esq., proposed by J. N. Mooyaart, Esq. (proxy), seconded by E. L. Layard, Esq. (proxy).

Rev. J. Katts, proposed by Rev. E. Muttukistna, seconded by J. Capper, Esq.

G. H. K. Thwaites, Esq., proposed by R. E. Lewis, Esq., seconded by J. E. Middleton, Esq.

H. P. Muttukistna, Esq., proposed by Rev. E. Muttukistna, seconded by Rev. J. Ondaatjie.

J. Dalziel, Esq. (re-admission), proposed by Dr. Misso, seconded by J. Capper, Esq.

Museum.

The following donations to the Society's Museum were then laid on the table, and the thanks of the Society voted to the donors:—

A wild cat, stuffed large horned owl, 33 specimens of wood, presented by Mr. C. D. Alwis, a student of the Academy.

Specimens of Batticaloa cloth, four specimens of Bourbon and native cotton grown at Batticaloa.

Four specimens of cocoanut sugar, specimens of cleaning nuts, J. G. and W. S. Taylor, Esq.

Four specimens of coral, eight specimens of fossils, forty birds, sixty land shells, specimens of dye stuff, two monkeys, bones of the dorsal fin of a chetadon, E. L. Layard, Esq.

Skull of a boar, skull of a Sciurus Bordieu, J. Davidson, Esq.

Fifty-seven specimens of wood, S. C. Chitty, Esq.

Six coins, W. S. Gunaratna, Esq.

Several specimens of natural history and geology, Dr. Kelaart.

Specimens of sponges, J. N. Mooyaart, Esq.

Specimens of sponges, J. E. Middleton, Esq.

Seven flying lizards, J. de Alwis, Esq.

A box of shells, T. Morgan, Esq., Galle.

Case of butterflies, J. P. Green, Esq.

Library.

The following additions to the Library were also laid on the table :—

Bennet's Ceylon, presented by D. Smith, Esq.

A number of the Journal of the Statistical Society of London.

A number of the Journal of the Geological Society of London.

A number of the Calcutta Review.

Meteorological Diary for Batticotta.

Meteorological Diary for Trincomalee.

Papers.

The following Papers were read :—

Notice of the Geological Formation of Nuwara Eliya, by Dr. Kelaart.

Notice of the Manufacture of Sugar from the Sap of the Coconut, by Messrs. J. G. and W. S. Taylor.

On the Eḷu Language, its Poets and its Poetry, by J. de Alwis, Esq.

SPECIAL GENERAL MEETING.

March 23, 1850.

Rev. D. J. Gogerly in the chair.

The objects of the Meeting were explained by the Chairman, viz., to receive a Paper by Lieut. Henderson on some supposed footprints discerned in a rock near Kurunégala, and other general business.

Lieut. Henderson's Paper was then read by the Secretary, and proposed for publication in the ensuing number of the Journal, with another from A. O. Brodie, Esq., of Puttalam, on the same subject, but written in contravention of the former gentleman's view. With regard to the Paper now before the Society, it was objected that having been already submitted to the Geological Society of London, it could not now be received into this Journal. On the other hand, it appeared to all manifestly unfair towards Lieut. Henderson to publish Mr. Brodie's Paper without his, and it was further suggested that it would be more advisable to wait for a reply, which Mr. Henderson had promised to Mr. Brodie's strictures on his views. A long discussion ensued, during which, in addition to the geological question at issue between the writers, much of a very interesting nature was elicited from the native gentlemen present, on the existence of similar rocks in other parts of the Island, and the native legends regarding the nature and origin of the marks on them. It was finally determined that the Society should not be hasty in giving their sanction to views which were at least entirely new in the annals of geology, and that the publication of both Papers be deferred for the present.

It appeared at the same time that other bodies at a distance had a right to expect from them as a local Society to institute a full and searching investigation into all the circumstances connected with a question of so great scientific importance, and the Committee were accordingly requested to take the matter into their special consideration, to invite communications from the native gentlemen and others on the subject, and, if possible, to make a local examination of the rock at Kurunégala, to procure specimens from it for the Museum, and to report on their proceedings to the Society.

The Treasurer having reported a want of some instruments required to complete the Meteorological Registers furnished to them from outstations, it was resolved that a sum not exceeding £5 be placed at the disposal of the Committee for the purchase of them.

C. P. Layard, Esq., was proposed by J. O'Halloran, Esq., seconded by Dr. Willisford, and unanimously elected a Member of the Society.

The Special General Meeting then resolved itself into the

ANNIVERSARY MEETING,

The Rev. D. J. Gogerly retaining the chair.

The Report of the Committee of Management for the past year was then read by the Secretary.

Report.

In taking a retrospect of the labours of the Society during the past year, your Committee regard with satisfaction the progress which it has made within that period; and they look with the strongest confidence to the future, when they reflect that the same steady advances have attended it throughout the whole of its career, unabated even during the season of unexampled depression and distress which not long since pervaded the whole of the civilised world.

Since the last Anniversary Meeting 20 new Members have been admitted, and one Member re-admitted on his return from England, while the zeal and activity evinced by the Members at outstations, who have poured in contributions so largely to the Society's Museum that your Committee have been called on three times to extend the accommodation at its disposal for their reception.

Large contributions have also been made by persons wholly unconnected with the Society; nor can your Committee fail to recognise in this circumstance an earnest of the interest which a portion at least of the public take in its proceedings. A list of the contributions will be found appended.

But your Committee desire not to take leave of this subject without recording their sense of the inconvenience and disadvantage under which the Society labours, especially in regard to its Museum, by having to share with the Loan Board the room originally devoted to its use by the Government.

They have further to report the non-arrival of the Taxidermist whom they expected from Calcutta; nor can they assign any reason for his withdrawing from the engagement which the Society was willing to make with him. Your Committee have long since given up all expectation of him, and would probably find no difficulty in getting his place supplied; but as many of the circumstances are now changed which would have rendered his services desirable, your Committee reserve for future consideration whether they shall recommend this course to be adopted.

As a token of the prosperity of the Society and of the position which it begins to assume among its contemporaries, your Committee refer to the number and character of the learned bodies with which it at present corresponds. Besides those with which it was in communication at the beginning of the year, its co-operation has been sought by the Smithsonian Institution of America, under the immediate direction of the United States Government; the Geological Society of Bombay; the Antiquarian Society; and the Syro-Phœnician Society of London; while from itself has emanated a correspondence with the Asiatic Society of Paris. It would not be fair to pass by the circumstance that an assembly of the Members at and about Jaffna has recently been brought about by the energetic perseverance of your late Secretary, Mr. Edgar Layard, for the purpose of promoting the interests and furthering the views of the Society.

The Treasurer's accounts, too, show a larger balance than at the close of any previous year; and thus, notwithstanding that the whole expense of publication has for some time past devolved on the Society, and that considerable expenses have been incurred in the purchase of cases and almirahs to furnish the Society's Museum, your Treasurer reports a balance in hand:—

	£	s.	d.
On account of the General Funds of the Society of...	20	14	0½
On account of the Museum Fund of ...	...	28	0 10
Total ...	48	14	10½

To that, whether regard be had to the external relations of the Society, its internal economy, or the number and activity of its Members, your Committee deem that it has now reached a position and a stability to which it never yet approached at any previous period of its existence.

Your Committee do not, however, recommend any relaxation of the strict economy which has hitherto regulated their expenditure. The time, in their opinion, has not yet come when the Society can dispense with the smallest share of caution or prudence in the disposal of its funds.

With regard to the business which has come before the Society during the year, your Committee have to report the arrival of the meteorological instruments which were ordered before the last Anniversary Meeting. These have now been set up some time in convenient places, and your Librarian lays before the Society the result of observations made by himself in Colombo since August last, with two meteorological registers for the year from Batticotta and Trincomalee.

Your Committee desire further to direct attention to their measures lately introduced for the better regulation of the Society's Publications. It was found that much delay was the inevitable result of the old plan, and that many Members, especially those at outstations, had no means of arriving at a knowledge of the subjects laid before the Society until all interest in them had ceased. It has been, in consequence, determined :—

1. That the Proceedings of each General Meeting be published as soon as possible after such Meeting, and a copy of these Proceedings be sent to each of the outstation Members.

2. That the selection of Papers for the Journal be entrusted to a Council appointed by the Society for that purpose.

3. That instead of being confined to a yearly issue, a number of the Journal be published whenever and as soon as sufficient matter is collected.

Considerable advantages seem already to have accrued from the first two regulations, which came into effect immediately, and your Committee think they can trace to your operation a portion of the increased energy on the part of the outstation Members alluded to in a former part of the Report. Your Committee count on similar results from the third, but as it will not begin to take effect till after the publication of the ensuing number, they cannot speak from experience.

The Papers which have come before the Society have been of a very interesting nature. Mr. Layard's Papers on Natural History derive considerable value from the fact that specimens of many of the animals described have been forwarded to Calcutta, and there carefully compared with those in the extensive Museum of the East India Company, by the learned Curator of that Institution.

Lieutenant Henderson's and Mr. Brodie's Papers on the marks in a rock at Kurunégala are of great geological interest, and similar marks are said to be found in other parts of the Island. Some notes

on the Geology of Nuwara Eliya, by Dr. Kelaart, will perhaps prove of higher interest, as they treat of a formation which now engages the attention of Indian geologists.

Connected with ancient Oriental literature and history, a very able sketch has been laid before the Society by Mr. Alwis, on the Elu or ancient Sinhalese poetry. A valuable catalogue of books in the Tamil language, and a sketch of the Tamil systems of the Natural History, have been presented by Mr. Casie Chitty, and some interesting notes by Dr. Macvicar on the Gaṇsabhāwa or village councils of the Sinhalese. With regard to this last Paper, your Committee regret that insuperable obstacles are raised against its publication by the author; and your Committee deem they would scarce do justice to it did they attempt to give an outline of its contents. Your Committee have also to acknowledge while on this subject the receipt of another rock inscription taken by Mr. Brodie from the celebrated Vihárá at Mihintale.

The other Papers presented to the Society concern the industrial economy and the resources of the Island at the present day. Under this head your Committee have to enumerate a Catalogue of Woods, the growth of the Island, by John Capper, Esq.; on the Coffee Plant and its appropriate Manure, by Dr. Gygax; on the Manufacture of Sugar from the Sap of the Cocconut Tree, by the Messrs. Taylor of Batticaloa.

But the most important topic, and the last, which has engaged the attention of the Society, is a project for forming and sending to England a collection of objects calculated to represent the industry of Ceylon in the great exposition of the works of industry of all nations, to be held in 1851.

In this your Committee can report but little progress, as the project has engaged the attention of the Society for only a short time. But their views have already been laid before the Government, and they have to acknowledge the promptness and liberality with which they have been met.

The circular now laid on the table details the objects your Committee have in view. It is already printed at the expense of Government in the Sinhalese, Tamil, and English languages, and circulated under their auspices to the Government Agents and headmen of the Island. Your Committee have further to acknowledge a promise of the most ample pecuniary and other assistance from His Excellency the Governor in carrying out the scheme. They would, in conclusion, commend it to the best consideration of the Society and its individual Members. They trust that no efforts will be wanting on their part towards carrying out to the fullest what is already so auspiciously begun, and hope that the present opportunity may not be lost for extending the influence of the Society, and making widely known the interest which they take in all that concerns the public good.

Resolved, that the Report as now read be adopted.

The Treasurer then laid on the table his accounts for the past year, and it was resolved that they be received and passed.

A list of the books added to the Library was then laid on the table.

The following Members were then proposed, and duly elected as office-bearers of the Society for 1850 :—

Patron.

His Excellency the Right Honourable the Governor.

Vice-Patrons.

The Right Rev. the Bishop of Colombo ; Sir A. Oliphant ;
and Mr. Justice Stark.

President.

The Honourable C. J. MacCarthy, Esq.

Vice-President.

The Honourable J. Cauldfield, Esq.

Librarian.

R. E. Lewis, Esq.

Treasurer.

J. O'Halloran, Esq.

Secretary.

J. Capper, Esq.

Committee.

The Rev. J. G. Macvicar, D.D.; the Rev. D. J. Gogerly ;
the Rev. G. A. Muttukistna ; Major Lushington, C.B. ; F. W.
Willisford, Esq., M.D. ; J. B. Misso, Esq. ; James de Alwis, Esq. ;
James Swan, Esq. ; E. H. Burrows, Esq.

Sub-Committee for Works of Industry.

F. W. Willisford, Esq., M.D. ; J. Capper, Esq. ; J. O'Halloran,
Esq. ; A. de Alwis, Esq.

A vote of thanks was then passed to the Secretary of the past year for the Report which he had drawn up, and to the Chairman for his able and efficient discharge of the duties of Vice-President of the Society, and for his conduct in the chair on the present occasion. The Meeting then broke up.

GENERAL MEETING.

June 22, 1850.

Rev. Dr. Macvicar in the chair.

The Minutes of the last Meeting were read and confirmed.

The Secretary read a communication from Mr. J. Mooyaart of Trincomalee, suggesting certain alterations in the Rules of the

Society, with a view of affording encouragement and co-operation to native associations at outstations. After some discussion, in which it was shown that new Rules could not be proposed except at the Anniversary Meeting, it was resolved that the matter be left for the consideration of the Committee.

The following letter was then read from Mr. Thwaites of Pérádeniya, describing the nature of a vegetable substance received by the Society from Mr. Edgar Layard of Point Pedro :—

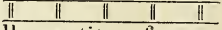
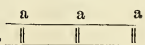
Royal Botanical Gardens, Pérádeniya,

June 13, 1850.

MY DEAR SIR,—Directly I took into my hands the cotton-like substance contained in your letter, and before I put it under the microscope, I suspected it to be a species of *Conferva* (or freshwater Alga), and such it proves unquestionably to be. It is a species of *Tiresias* of Bory (*Vesiculifera*, Hassall).

In England it is no uncommon thing to find, after the subsidence of floods, large quantities of what is called “vegetable flannel” left upon fields which have been covered by the water; and the “vegetable flannel” I have always found to consist of one or more species of *Conferva* matted together. The origin of this substance has been a puzzle to many a naturalist, but is nevertheless easily explained, and thus :—

Previously to the fall of rain, every stagnant pool and ditch has contained an abundance of these minute plants, which grow floating without any attachment to the bottom or sides; when these pools, therefore, become overfilled, the *Conferva* are floated out, carried away by the descending streams to the lower grounds, and there left as the waters subside.

The structure of these plants, as shown by the microscope, is very simple: the whole plant consisting frequently of a single row of similar cylindrical cells placed end to end:  When in a growing state each cell has a small quantity of green colouring matter, or “endochrome,” within it, differently arranged in the different genera, and which almost disappears when the plant is dead and dry; and I should have been unable to identify the genus to which the plant you have sent belongs but for certain ring-like markings (a) upon the end of some of the cells, and which are characteristic of the genus *Tiresias* in one of its states of growth. 

I am, &c.,

G. H. K. THWAITES.

JOHN CAPPER, Esq.,

Secretary, Royal Asiatic Society.

A letter was next read from Mr. S. C. Chitty, accompanying several inscriptions taken from stones near Puttalam, &c.

Chilaw, *May* 12, 1850.

SIR,—I have the pleasure of transmitting to the Society a copy of an inscription taken from a stone slab, which is placed upright in the ground, at the head of the grave of a Muhammadan saint at Piramanenkandel, a deserted village situated to the eastward of the Mí-oya, about ten miles from Puttalam in a north-east direction. You will observe that the characters of this inscription are not Arabic, but an ancient and obsolete form of Páli, and I am therefore inclined to believe that it records some event connected with the history of Buddhism in Ceylon, and has no reference to the Muhammadan saint.

The ruins of Tammana-nuwara, of which I have published an account in volume VI. of the Journal of the Royal Asiatic Society, are not very far from Piramanenkandel, and it is likely that the stone slab was removed by the Moors from those ruins and placed in its present situation.

I avail myself of this opportunity to send to the Society a copy of another inscription engraved on a flat stone (4 feet long, 1 foot and 5 inches broad, and 5 inches thick), which the inhabitants of Dummaladeniya have removed from a neighbouring jungle, and fixed on the side of the high road leading from Chilaw to Kaimal through their village, as a boundary stone. The inscription in question is in ancient Grantha character, and it covers all the four sides of the stone, but on one side alone it is legible.

I have the honour, &c.,

SIMON CASIE CHITTY.

To the Secretary of the Ceylon Branch,
Royal Asiatic Society, Colombo.

The Secretary then read a Report from the “Exhibition Committee,” dated the 20th instant:—

First Report of the Committee appointed at the Anniversary Meeting of the Asiatic Society of Ceylon, on March 23, 1850, to promote the objects of the Industrial Exhibition of 1851.

Your Committee, impressed with the great importance of the object for which it was appointed, and fully sensible of the necessity for obtaining the best information upon which to proceed, lost no time in seeking the assistance of the various Government Agents, which was done under the sanction of His Excellency the Governor. The returns requested from these sources have not as yet been received. Your Committee, aware of the obstacles invariably met with in collecting data in this country, are still in hopes of obtaining the information sought at an early period.

By means of circulars freely distributed, in Singhalese and Tamil as well as in English, the inhabitants of this Colony have, it is believed, been fully apprised of the nature and objects of the great Industrial Exhibition to assist in promoting which this Committee was appointed; and though in some few cases misapprehensions are said to have existed amongst the least informed Singhalese, who appear to have looked upon the collection of information regarding works of industry as a step towards new Fiscal regulations, the proper intention of the exhibition is believed to be entirely appreciated by the great bulk of intelligent natives.

With a view of affording encouragement to native talent, and at the same time to impart, as much as possible, a local character to such objects of art as may be sent from the Island, premiums have been offered for designs for carvings and ornamental works of Ceylon artists, and embodying Ceylon objects. Although a limited number only of these have been received, your Committee trusts that by the selections which have been made from them the intention will have been at least partially realised.

Communications have been received from Her Majesty's Commissioners of the Industrial Exhibition of 1851, through the local Government, to which your Committee have replied. The principal points contained in the printed circulars of the Commissioners have been embodied in a paper circulated through the Colony for general information, a copy of which accompanies this Report, together with a classified, though imperfect, list of objects to be forwarded from Ceylon to the Exhibition. Consequent upon the distribution of the catalogue, much new and valuable information has been received by your Committee, especially in reference to the vegetable productions of this Island. Amongst those who have voluntarily tendered their assistance may be named Mr. J. B. Misso, Mr. W. Ondaatjie of Puttalam, and Mr. T. A. Pieres of Kandy.

It would be premature at this moment to enter into details of such works as are in course of execution upon orders, or of those which have been presented by various contributors in their own names. Your Committee, however, indulge in the hope that within two months from this date there will be formed a considerable collection of interesting articles ready for shipment by sea, which it would be desirable to exhibit in Colombo previous to their being despatched to Europe.

Not the least interesting portion of the collection will be the medicinal substances, gums, resins, and oils, most of which are as yet little if at all known to Europeans. In fibrous materials experiments are being made, the results of which it is hoped may prove of practical utility and value. In manufactured articles Ceylon can scarcely hope to approach the many more highly favoured countries of the Indian continent; such, however,

as exist in this Island will be sent, in the hope that they may prove of interest, though not perhaps on account of their costly fabric or rarity of design.

Your Committee cannot conclude this brief report without noticing the ready liberality of His Excellency the Governor, who has undertaken to defray out of the Colonial Treasury the whole expense attending the collection of such objects as Ceylon can produce adapted to the Exhibition of 1851.

JOHN CAPPER,
Secretary of Committee.

Colombo, *June 20*, 1850.

The following gentlemen were then balloted for, and declared duly elected Members of the Society :—

S. Amblawanan, Esq., of Kayts, proposed by E. L. Layard, Esq., seconded by H. Pole, Esq.

The Rev. J. Robinson, of Batticaloa, proposed by E. L. Layard, Esq., seconded by W. Twynam, Esq.

T. A. Pieres, Esq., of Kandy, proposed by Dr. Kelaart, seconded by J. B. Misso, Esq.

C. P. Marcus, Esq., of Kurunégala, proposed by Dr. Kelaart, seconded by Dr. Stuart.

The following donations, &c., were laid on the table :—

Museum.

Specimen of vegetable flannel from E. L. Layard, Esq.

Two earthen coins (?) from N. S. Guneratna, Esq., of Mátalé.

A collection of specimens illustrative of the geology of Nuwara Eliya, from E. F. Kelaart, Esq., M.D.

Antiquities.

A plan of the ruins of Pollanuware from J. N. Mooyaart, Esq.

Two inscriptions from stone slabs in the neighbourhood of Puttalam, and a stone inscription from a slab in the Island of Jaffna, from S. C. Chitty, Esq.

Library.

Royles' Productive Resources of India.

The Calcutta Review for March.

Journal of Eastern Archipelago, December to February.

Journal of Bengal Royal Asiatic Society, August and September.

Journal of Statistical Society of London, March.

Journal of Geological Society of London, May.

Meteorological Register of Colombo, March to May.

Meteorological Register of Batticotta, March and April.

Meteorological Register of Trincomalee, March and April.

Papers.

The following Papers were then laid on the table and read :—

Sketches on the Natural History of Ceylon : Part III., by Edgar E. Layard, Esq.

A short account of the Veddás of Bintenne, by the Rev. J. Gillings.

The Geology and Fauna of Nuwara Eliya and Horton Plains, by E. F. Kelaart, Esq., M.D., F.L.S.

The Zoology of the Tamils : Part II., by S. C. Chitty, Esq.

Sermons by Buddha, by the Rev. D. J. Gogerly.

The Materia Medica of the Singhalese, by T. A. Pieres, Esq.

The Mammals of Ceylon, by E. F. Kelaart, Esq., M.D., F.L.S.

GENERAL MEETING.

August 13, 1850.

Rev. D. J. Gogerly in the chair.

The Minutes of the last Meeting were read and confirmed.

The Secretary notified the arrival by overland of the meteorological instruments ordered from England. Sets of these were agreed to be sent to Captain Higgs at Trincomalee and G. H. K. Thwaites, Esq., at Pérádeniya, which, with the observations at Batticotta and Colombo, would make the registry of observations complete.

The following gentlemen were unanimously elected Members of the Society :—

W. Herft, Esq., proposed by J. N. Mooyaart, Esq., seconded by J. Capper, Esq.

C. A. Lorensz, Esq., proposed by J. de Alwis, Esq., seconded by R. E. Lewis, Esq.

Mr. Capper having signified his intention to leave the Colony at an early date, begged to be relieved of the duties of Secretary. It was proposed by J. de Alwis, Esq., and agreed to, that R. E. Lewis, Esq., be requested to assume the duties of the office, temporarily.

The following books were laid on the table :—

Library.

Meteorological Register for Batticotta and Trincomalee for June and July.

Translation of the Sidatsangaráva, or Singhalese Grammar, by J. de Alwis, Esq., from the Author.

The Journal of the Statistical Society of London.

The Journal of the Geological Society of London.

British Moths and Butterflies, 2 vols.

Papers.

The following Papers were then read :—

On the Sinhalese Language, by J. de Alwis, Esq.

The Statistics of the Puttalam and Chilaw Districts, by A. O. Brodie, Esq.

The business of the Meeting having terminated, it was resolved that this Meeting, having a due sense of the indefatigable zeal of Mr. Capper as the Secretary of the Society, regret that his departure from the Colony obliges them to accept his resignation. The Meeting desire Mr. Capper to accept their best thanks for his efforts in furthering the objects of the Society.

The Meeting then adjourned.

ABSTRACT OF A METEOROLOGICAL REGISTER KEPT AT BATTICOTTA, NORTHERN PROVINCE, IN 1849.

1849.	THERMO-METER.		WET BULB THER-MOMETER.			BAROMETER CORRECTED.		AMOUNT OF RAIN.	COURSE OF WIND.	STRENGTH OF WIND.	CLOUDS, &c.
	Mini-mum.	Maxi-mum.	A. M. h. m. 9.30.	A. M. h. m. 12.	P. M. h. m. 3.40.	Maxi-mum.	Mini-mum.				
January ...	76.5	82.0	5.6	7.0	6.9	29.987	29.889	0.39	N. E. & N. N. E.	2.4	Clear, with flying clouds ¹
February ...	77.7	83.6	5.8	.0	8.4	29.981	29.913	0.00	N. E. & S. E.	2.4	Mostly clear sky ²
March ...	79.1	85.8	5.3	6.1	6.9	29.959	29.834	0.00	Variable	2.5	Generally flying clouds ³
April ...	82.2	88.6	5.1	6.3	6.5	29.850	29.757	0.76	S. E. & S. W. to N. W.	2.5	Flying clouds ⁴
May ...	82.7	88.8	5.2	6.5	5.8	29.773	29.682	0.57	S. W. to W. S. W.	3.5	Generally cloudy ⁵
June ...	81.9	87.3	6.1	7.3	6.7	29.799	29.708	0.56	S. W. & S. S. W.	2.6	Flying clouds ⁶
July ...	80.2	86.2	4.6	6.0	5.6	29.794	29.707	0.05	W. S. W. & S. W.	1.5	Generally cloudy ⁷
August ...	80.6	86.4	4.5	6.3	6.1	29.810	29.725	0.45	W. S. W. & S. W.	3.6	do. ⁸
September	80.8	86.3	5.3	7.7	6.5	29.816	29.706	0.68	S. W.	2.4	Usually clear sky with light clouds ⁹
October ...	80.3	85.4	4.0	5.0	5.4	29.895	29.788	3.57	S. W. & W. by S. W.	2.4	Cloudy and hazy ¹⁰
November	78.4	82.4	2.8	3.4	3.4	29.924	29.829	25.73	S., N. N. W., & N. E.	1.3	Heavy, cloudy sky ¹¹
December	76.1	80.2	2.4	3.2	3.3	29.927	29.837	10.17	N. E. & N. W.	2.5	Generally flying clouds ¹²

GENERAL REMARKS.—¹ Generally dew ; showers at night on 2nd, 4th, 10th, 24th, and 31st. ² Light dew ; very fair. ³ Hazy, with occasional dew ; some rain and thunder throughout the month. ⁴ Hazy at times, with occasional light rain and thunder. ⁵ Hazy throughout the month, with little thunder and one or two light showers. ⁶ Occasional haze ; fair usually. ⁷ Hazy at times, with thunder and little rain. ⁸ Hazy at times, with occasional thunder and light rain. ⁹ Fair, with one or two light showers and one squall of wind. ¹⁰ Eight rainy days, with frequent thunder. ¹¹ Twenty-one days of rain. Maximum rain in 24 hours, 4.16 in.; minimum ditto, 0.02 in. ¹² Fourteen days showery ; dew in morning.

DR. The Royal Asiatic Society of Ceylon, in account with the Treasurer.

CR.

1850.

To amount paid for books, London and Calcutta	20	7	7
Do. for printing Society's Journal, 150 copies ...	24	0	0
Do. for printing Notices, &c.	3	15	6
Do. for Advertisements	1	18	11
Do. for Stationery, &c.	0	9	5
Do. for Book-case and Table	7	8	0
Do. for Stand for Meteorological Instruments	0	14	0
Do. for Duty, &c., on ditto...	0	13	10
Do. for Postages, India and Europe	1	4	6
Do. for Carriage of Parcels	1	19	8½
Do. for Binding Books	1	5	0
	63	16	5½
Balance ...	20	14	0½
Total ...	84	10	6

1850.

By balance from last year	16	0	6
By Annual Subscriptions	52	10	0
By Entrance Fees	14	14	0
By sale of Society's Journals	1	6	0
Total	84	10	6

Arrears of Entrance Fees, 1848	1	1	0
Do. do. 1849...	1	11	6
Do. of Subscriptions for 1850...	18	18	0
	£21	10	6

Colombo, February 28, 1850.

E. & O. E.

JOHN CAPPER,
Treasurer.

MUSEUM FUND.

DR.	The Royal Asiatic Society of Ceylon in account with the Treasurer.	CR.
	£. s. d.	£. s. d.
1849.		
March	To amount paid for a Bird Case ...	28 7 0
"	Do. for fitting Almirah with Drawers ...	15 1 0
June	Do. for Mineral Case ...	7 0 0
"	Do. for fitting Insect drawers, printing labels, cases, &c.	—
1850.		
Feb.	To amount advanced for new cases	50 8 —
	Balance ...	22 7 2
		28 0 10
	Total ...	50 8 0
	1849.	
	By sundry Donations ...	—
	By sundry Subscriptions ...	—
	By Grant from General Fund	—
	Total ...	50 8 —
	Colombo, February 28, 1850.	
	E. & O. E.	
	JOHN CAPPER, Treasurer.	

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Smith, James Colombo
Soysa, L. de do.
Straube, F. do.
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Stark, The Hon. Justice do.
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Steuart, George do.
Steuart, James do.
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Swan, J. do.
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Willisford, F., M.D. do.
Worms, G. Pusselláwa
Worms, M. do.

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J. O'Halloran, Esq.

Secretary and Librarian :

R. E. Lewis, Esq.

LIST OF BOOKS, PAMPHLETS, &c.,

PRESENTED TO AND PURCHASED BY THE SOCIETY DURING
THE YEAR 1849.

Transactions of the Batavian Society.
Travels of Fa Hi Han.
Narrative of a Mission to Ceylon and India.
Essay on the Human Mind.
Natural History of Fishes.
Pamphlet on Russian Coins.
Blue Book of Ceylon.
Swainson's Birds and Taxidermy.
Smithsonian Contributions to Knowledge.
Orientalist's Guide.
Pamphlet on Artesian Wells.
Annals of India.
Bennett's Ceylon.
Royles' Productive Resources of India.
British Moths and Butterflies.
The Calcutta Review.
Journal of the Royal Asiatic Society.
Journal of the Eastern Archipelago.
Journal of the Statistical Society of London.
Journal of the Royal Asiatic Society of London.
Journal of the Geological Society of London.
Transactions of the Statistical Society.
Transactions of The Geographical Society of Bombay.
Journal of the Asiatic Society of Bombay.

18 JUN. 1903



JOURNAL

OF THE

CEYLON BRANCH

OF THE

ROYAL ASIATIC SOCIETY:

EDITED BY

THE SECRETARY



1853.

CONTENTS:

	Page.
Budhism:—Chariya Pitaka. By the Rev. D. J. Gogerly	1
The Laws of the Buddhist Priesthood. By the Rev. D. J. Gogerly (<i>to be continued.</i>)	12
Statistical Account of the Districts of Chilaw and Putlam, North-Western Province. By A. O. Brodie, Esq.	26
Rock Inscription at Gooroo Godde Wihare, in the Magool Korle, Seven Korles. By A. O. Brodie, Esq.	51
Catalogue of Ceylon Birds. By E. F. Kelaart, Esq., M. D., and Edgar L. Layard, Esq. (<i>to be continued.</i>)	54

* * It is requested that communications may be sent to the Secretary, under cover to the Hon'ble the Colonial Secretary.

†† Parties desirous of having the Journal transmitted to them by Tappal, bearing Postage, or otherwise, will have the goodness to intimate their wishes to the Secretary.

COLOMBO:

W. SKEEN, GOVERNMENT PRINTER, CEYLON.

MDCCCLIII.

JOURNAL
OF
THE CEYLON BRANCH
OF THE
ROYAL ASIATIC SOCIETY.

Budhism:—Chariya Pitaka. By the Rev. D. J. GÖGERLY.

[THE discourses of Budha are contained in five large divisions called in Pali Nikayo, and in Singhalese Sangi: the fifth of these, called Kudagot Sangi, comprises 15 books, one of which is the Chariya Pitaka, or a collection of preceding states of existence. The book is composed in Pali verse, and the legends it contains are brief accounts of events more largely developed in the book called Jataka, which latter book is also contained in the Kudagot Sangi. The tales in this small volume have all a reference to the desire supposed to have been felt by Gautama, in previous states of existence, to become a Budha, and some of the means he used to accomplish his object. These means are divided into ten sections called Pārimitta, and each of these, being subdivided into three other sections, makes the whole number thirty. Only a part of these means are contained in this work. The portion now presented to the Society contains the Pārimitta of Alms-giving; the remainder will be given on a future occasion, with such observations as may be necessary for its elucidation. The Book is also called Budhapadana, or sections of Budha's previous existences.]

The whole of my proceedings during four atsankya and one hundred thousand calpas, has been for the purpose of becoming a Budha.

Omitting my conduct in various births during past calpas, I will declare my proceedings during the present calpa: listen to me!

At one time I was a hermit named Akitte, and having entered a large forest, a wilderness without inhabitants, I dwelt there.

The king of the Gods (Sakra) being moved by the effulgence of my austerities, assuming the form of a mendicant Brahmin, approached me to obtain food.

Seeing him standing at the door of my residence, I put into his dish the greens I had brought from the forest, which were unmixed with oil or salt.

Giving him these I entered my Pansel, and without seeking for other food I placed my bowl in an inverted position.

A second and a third time he came, and I thrice gave him (what I had collected) with an unshaken and imperturbed mind.

My body was not emaciated in consequence of that (abstinence from food,) but I spent the time in mental enjoyment.

Had I met with one worthy of receiving alms throughout a whole month, or two months, I would have given these eminent alms with an unshaken and imperturbed mind.

I did not give these alms hoping to receive thereby honor or profit, but I performed the actions hoping to become thereby a Budha.

End of Akitte Tāpasa.

Afterwards I was a Brahmin named Sanka, and intending to pass over the ocean I went to the port.

I there saw one who had subjected his passions coming on the high road from the desert, walking on the hard and parched ground.

Seeing him coming on the road I thus thought, Here is a field for obtaining merit by any person desirous of virtue.

The husbandman at a suitable season perceives a field, but if he neglect to sow it with seed, he obtains no profit from it.

So I, being desirous of merit, perceive a field for its attainment, of pre-eminent excellence: if I do not perform an act of kindness I shall derive no merit therefrom.

As the Minister desirous of being steward of the royal household will lose his office if he neglect to supply the necessary provisions and wealth :

So I, desirous of being eminently meritorious, shall be deprived of merit, if, seeing this holy man, I do not present him with offerings.

Thus thinking I took off my sandals, and worshipping his feet, I presented him with my sandals and umbrella.

Thus I gave him alms, received thereby happiness a hundred fold, and continued to fill up the measure of my liberality.

End of the Brahmin Sankha.

Afterwards I was Dananjaya, king of the great city of Indapat, exercising the ten regal virtues.

Some Brahmins came to me from Kalinga, and requested me to give them my noble, valuable, state elephant.

They said, We have no rain in our country and there is a great famine; give us your noble elephant, which is as a dark mountain of antimony.

When supplicants approached me it was not becoming that I should reject their request, and break my rule of liberality, I therefore gave them my large elephant.

Taking the elephant by the trunk and from a golden vessel pouring water on the hands of the Brahmins, I gave the elephant.

When I thus gave the elephant, my councillors enquired, Why do you give your noble elephant to beggars?

If you give your valuable state elephant, able to ensure victory in war, what will you do with your kingdom?

(I replied) I would even give my kingdom: I would give my own body: my desire is to become Budha, and on that account I give the elephant.

End of Dananjaya.

At one time I was the powerful universal emperor, lord of the earth, named Sudassano, residing in the city named Kusawatti.

I caused proclamation to be made there thrice a day in various places, Who wishes for any thing? Who desires any thing? That property shall be given him.

Who is hungry? Who is thirsty? Who requires garlands, cosmetics, or various coloured garments to cover his nakedness?

Who requires bowls or umbrellas, or beautiful soft slippers? I will give them. Thus evening and morning I caused proclamation to be made in various places.

I had storehouses in many hundred places, and gave to applicants whether they came by day or by night.

Whatever they wished for they obtained, and went away with their hands full. Thus during the whole of my life I continued to give eminent alms.

I did not give things to which I had an aversion, or things which I had not stored up, but I gave as a sick man to obtain a cure. I did not for base purposes give alms to supplicants, but with a pure and sincere desire to become Budha.

End of Sudassano.

At another time I was the Brahmin Govinda, the spiritual guide of seven monarchs, honored by sovereigns.

Whatever I received from those seven monarchs I gave in alms, as from an inexhaustible ocean.

I did not give things to which I had an aversion, or things which I lightly prized; but I gave valuable gifts with a desire to become Budha.

End of Govinda.

Afterwards I was Nimi, the learned and virtuous king of the famed city Mitila.

There I caused storehouses to be erected at the four cardinal points, and continued to give alms to beasts, birds, men and women.

I continued without intermission to give valuable alms, as garments, couches, meat, drink, and condiments.

As the servant who attends on his master for gain, endeavours by thought, word, and deed, to gain the good will of his employer:

So in every birth I endeavoured to supply food and alms to persons, being desirous of becoming a Budha.

End of Nimi.

Afterwards I was prince Chanda, son of the king of Puppiwatti.

Being delivered from death, and with fear escaping from the sacrificial enclosure, I gave alms largely.

I ate not, I drank not, I took no refreshment, even if it were for five or six days, unless I had given alms to some holy man.

Like as a merchant who, having collected his goods, takes them to the place where he can obtain large profits:

Thus the giving to others of your meal is highly advantageous: to give to others therefore is proper: it will produce a hundred fold.

Knowing this, I gave alms from birth to birth. I continued without intermission to give alms, that I might become a Budha.

End of Chanda Kumāra.

I was Sivi, king of the city of Aritha; and sitting in my magnificent palace I thus thought:

There is no kind of alms among men which I have not given, if any one should even beg from me my eyes, I would give them without hesitation.

Sakra, the sovereign of the Gods, knew my thoughts, and sitting amidst his attendant gods, he thus spoke:

The King Sivi, possessing super-human power, sitting in his magnificent palace, and meditating on the various kinds of alms, does not perceive one that he has not given.

I will ascertain what his thoughts are ; wait here a moment until I know his mind.

Having assumed the form of a trembling, hoary-headed, wrinkled, decayed, and emaciated blind man, he approached the king.

He having assumed this form, elevating his left and his right arms, with clasped hands raised to his head, he spake these words :

Great and just sovereign, the author of your kingdom's prosperity, the fame of your almsgiving has ascended up to Gods and men ; I have a petition.

I am become blind of both eyes : give me one of your eyes, and retain the other for your own use.

When I had heard these words, with a mind excited by joyful emotions, I thus addressed the trembling supplicant : Thou who hast come soliciting the gift of an eye hast come knowing my thoughts while I was in the palace.

My desires are accomplished, my wish is fulfilled, I shall this day give a suppliant such alms as I never gave before.

Come here Siwaka : arise, be not unskilful, be not negligent : pluck out both my eyes and give to the beggar.

My obedient slave Siwaka being thus addressed, plucked out my eyes like the kernels of a palm tree, and gave them to the beggar.

In purposing to give, in giving, and after having given the alms, I had no other design than that of becoming a Budha.

Not that I had an aversion to my two eyes : my body was not disagreeable to me : but my desire was to become a Budha, and therefore I gave my eyes.

End of the story of King Sivi.

My mother Pusati, the daughter of a king, was in a previous birth the queen of Sakra.

He, the king of the Gods, seeing that the term of her life had ended, said, I will give you ten gifts. What ten gifts, my friend, do you desire?

The Goddess hearing these words, replied to Sakra, What fault have I been guilty of? Have I become displeasing to you? Why do you drive me from my lovely residence, as with an earth-shaking wind?

When she had thus spoken, Sakra replied, You have been guilty of no crime, neither are you displeasing to me.

It is only this, the term of your existence here draws to a close. Accept therefore the ten excellent gifts I offer you.

Pusati then accepted with joyfulness the ten gifts, including me, presented by Sakra.

Pusati, ceasing to exist there, was born of a regal family, and became united to king Sanjaya, of the city of Jetuttaram.

When I was conceived in the womb of my beloved mother, by my glory she became constantly attached to almsgiving.

Freely she gave to the poor, to the sick, to the old, to mendicants, to travellers, to men and women, to Samanas, to Brahmins, to those of subdued passions.

Pusati, having carried me in her womb ten months, passing through the city, brought me forth in the midst of the Wessa street.

I did not receive the name either of my father or my mother, but having been born in the Wessa street, I was called Wessantara.

When I was a child eight years of age, I sat in my palace and thought of giving alms.

I thought, should any one request from me my heart, my eyes, my flesh, my blood, or my body, I will give them to him.

When I had formed this firm resolution, the solid earth, mount Meru, and the trees of the forest were shaken.

In half a month, on the Uposatu of the full 15th day of the moon, I mounted my elephant Pandara, and went forth to give alms.

Brahmins from Kālinga came to me and requested me to give them Pandara, my valuable state elephant.

They said, From want of rain there is a great famine in our land: Give us your large elephant: your excellent elephant altogether white.

I thought, My mind delights in almsgiving, with an unshaken determination I will give what these Brahmins ask, I will hide nothing.

When these supplicants approached me, it not being proper that I should repulse them, or break my determination to bestow alms, I gave them my large elephant.

Taking the elephant by the trunk, I poured water from a golden chalice upon the hands of the Brahmins, and gave them the elephant.

When I had thus given the excellent and perfectly white elephant, the earth, mount Meru, and the trees of the forest shook.

The inhabitants of Siwi being displeased at my giving the elephant, assembled together and banished me from their land, saying, Go to the Wanka mountain.

Being thus driven away by them, I still remained firm and unshaken, and begged permission to be allowed once more to give alms.

The inhabitants of Siwi granted my one request, and I accordingly published my intention by beat of drum, and gave excellent alms.

Although the fear-inspiring sound ascended that I was banished on account of excessive almsgiving, still I gave alms.

Having bestowed the chief gifts, as elephants, horses, chariots, male and female slaves, oxen and wealth, I departed from the city.

Having departed from the city, when I turned round to look at it, the earth, mount Meru, and the trees of the forest shook.

Arriving at the junction of the four great roads, I gave away the carriage in which we four persons came, and taking Maddidewi aside, I privately said to her:

Maddi, do you take Kanha, she is the younger and light, I will carry Jali her brother, who is older and heavy.

Then Maddi took Kanhājina who was like the flower of the lotus, and I took the royal child Jali who was like a heap of gold.

Thus we four high born and delicate princes, travelling through difficult paths proceeded towards the mountain Wanka.

When we met any person, or any one overtook us, we enquired, Which is the road to the mountain Wanka?

They beholding us with compassion said, You have much suffering to endure: distant is the mountain Wanka.

When in the forest the children saw a tree laden with fruits, they cried to obtain some.

The lofty and wide spreading tree, perceiving the weeping children, of itself bowed down its branches for the children to approach.

The exquisitely beautiful Maddi, seeing this wonderful and miraculous event, thus joyfully expressed her admiration:

Assuredly this is the most wonderful event ever seen in the world: by the splendid virtue of Wessantara the tree of itself bows down.

The Yakha, out of compassion to the children, shortened the path, so that the day after our departure we arrived at the country called Chēta.

Here 60,000 princes resided, our maternal uncles, who with clasped hands on their foreheads met us weeping.

Here remaining we conversed with the inhabitants of Chēta and with their families, and departing thence we arrived at the mountain Wanka.

The king of the gods (Sakra) called the powerful Wissakamma (the architect of the gods) and said, Erect a well-built dwelling, a commodious and pleasant pansala.

The powerful Wissakamma, obeying the commands of Sakra, erected a well built dwelling, a commodious and pleasant pansala.

We four persons having arrived at the quiet and peaceful forest, dwelt there by the mountain.

I, Maddi Dewi, and the two children Jali and Kanhājina, consoling each other lived in that residence.

As the children did not go out, I was not alone in the dwelling; Maddi brought herbs from the forest and supported us.

While I resided in the forest a beggar came to me and requested me to give him my two children Jali and Kanhājina.

When I saw the beggar approach my heart rejoiced, and taking my two children I gave them to the Brahmin.

When I gave my own children to the Brahmin Jujuka, then the earth, mount Meru, and the trees of the forest, shook.

Again the god Sakra descended, and assuming the form of a Brahmin requested from me my chaste and virtuous wife Maddi Dewi.

Taking Maddi by the hand and filling the Brahmin's hand with water, with a cheerful mind I gave Maddi to him.

When I gave Maddi, the gods of the sky rejoiced, the earth also, mount Meru, and the trees of the forest, shook.

When I gave my children Jali and Kanhājina, and also my chaste wife Maddi, I thought of nothing else but of becoming a Budha.

Not that my two children, or Maddi Dewi were disagreeable to me, but desiring to become a Budha I gave that which was dear to me.

Afterwards, when my father and mother came to the great forest sorrowfully and with tears enquiring after my will.

With modesty and reverence I approached them: then also the earth, mount Meru, and the trees of the forest, shook.

Then departing with my relations from the great forest I entered the delightful city of Jetuttara, that chief of cities.

Then the seven kind of jewels were rained from heaven and the clouds poured down water: the earth also, Maha Meru, and the trees of the forest, shook.

The insensible earth, unconscious of joy or sorrow, was thus seven times shaken by the power of my almsgiving.

End of Wessantara.

At another time I was a hare, a walker in the forest, eating grass, leaves, branches and fruits, injurious to none.

A monkey, a jackal, a water hen and I were associates, meeting together morning and evening.

I instructed them in good works, saying, Depart from degrading vice, and perform that which is good.

On the Uposata day, seeing the full moon I said, To-day is the Uposata day.

Prepare alms and give to worthy persons: having given alms, spend the day in tranquillity.

They approving my advice, prepared alms according to their ability, and sought a person worthy of receiving them.

Sitting down I thought, It is proper to give alms to holy men, should I meet such an one what have I to give him?

I have no sesamum, grain, maize, rice, nor ghee. I live on grass, and grass I cannot give.

Should any holy man come to me seeking food, he shall not go away empty: I will give him my own body.

Sakra, knowing my thoughts, assumed the form of a Brahmin seeking alms, and came to the place where I was sitting.

When I saw him, I rejoiced and said, It is a happy circumstance that you have come to me for food.

I shall to day give that in alms to you which I never gave before, you are a holy man and therefore should not injure others.

Come, collect some sticks and kindle a fire, I will cook myself, and thou shalt eat that which is cooked.

He replied, It is good! and cheerfully collecting wood he raised a great heap, and reduced it to a bed of burning charcoal.

When the great heap was shining with heat, I leaped up and fell into the midst of the flame.

Thus as any one entering into cold water rejoices when the burning heat of his body is assuaged:

So I, entering into the blazing fire, felt my whole body at ease as though I had leaped into cold water.

I thus gave my whole body to the Brahmin; my skin, my flesh, my tendons, my bones, my heart to the Brahmin.

End of the tale of the Hare.

THE LAWS OF THE BUDHIST PRIESTHOOD.

By the Rev. D. J. GOGERLY.

[In the first paper concerning Budhism, which I had the honor of reading before this Society, in May 1845, it is stated that the sacred writings of the Budhists are divided into three great sections, called the Winiya, the Sutra, and the Abhidarma Pitakas. The two latter elucidating the doctrines of Goutama, and the first one containing the laws and regulations for the government of the Priests, together with occasional doctrinal discourses. The books on discipline, forming the Winiya Pitaka, are five; the first and second containing the criminal code, the third and fourth the ecclesiastical and civil code, and the fifth is a recapitulation of the whole in a kind of catechetical form.

My present object is to give a translation of the precepts contained in the ecclesiastical code, in the order in which they are recorded, together with so much of the text as may be necessary to explain the connection between the precepts.

The two books containing the ecclesiastical code, are named Maha Waggo, and Chula Waggo; the former one will occupy our attention first.

In the paper read in May 1845, the beginning of the Maha Waggo is translated, and the account is brought up to the time when Goutama converted the five associated ascetics who had been his companions during the six years he spent in austere penances, hoping thereby to attain to the dignity of a supreme Budha. We resume the subject at this period.]

The five ascetics having received Goutama as their teacher, and perceiving the correctness of his doctrine, requested to be admitted priests under his government, both as respected doctrine and discipline. He acceded to their request, saying "Approach, Bikhus! Clearly is the doctrine declared! Walk in the path of purity by which all sorrow may be terminated."

In his first discourse, Budha had taught his disciples, that existence and suffering are inseparably connected:—that the

perpetuation of existence results from, either a continued desire to live after death, or from a desire to terminate upon death the existence of a living entity or soul:—that the only means by which a termination both of sorrow and existence may be secured, is to be entirely free from all desire to existing objects, and to existence itself: and that this freedom from desire can only be attained by a life of unspotted purity.

But now that they have received him as their teacher, he further instructs them, that there is no existing thing with which they can identify themselves, or say “This is I,” this constitutes my soul. He speaks of the body, of the perceptions, sensations, and reasonings, and also of the consciousness; and of each severally he says, the wise and learned disciple will by his wisdom perceive, these are not mine; they do not constitute me; these are not to me a soul. This doctrine is fully developed in other discourses, in which he denies the existence of a living entity called a soul: life, with all its emotions, are merely sequences; they have thus continued by an uninterrupted series, the commencement of which cannot be traced up to the present moment; they are never for two consecutive moments the same, but form one perpetual system of mutation. He concludes his discourse by saying, that the wise and learned disciple, by perceiving these truths, ceases to have satisfaction either in things corporeal or mental: being no longer satisfied with them, he ceases to be attached to them; ceasing to be attached to them, he becomes free; being free, he obtains the knowledge that he is freed (from all attachments); his births become terminated; his path of purity is perfected; his necessary work is completed; and he knows, that for the accomplishment of that object (freedom from future existence), nothing more remains to be done. Upon hearing this discourse, the five priests were greatly edified, and their minds became so liberated from desire, that it never again was experienced by them.

This freedom from desire (and the perfect purity necessarily connected with it) constitutes the state of a Rahat. Supernatural wisdom and super-human power result from these: but he who receives the doctrine of Budha, and is thus free, is a Rahat. There were now, says the author, six Rahats in the world.

The next accession to the priesthood, was from the family of a wealthy nobleman of Benares. His son Yaso became disgusted with the sensualities with which he was surrounded, and filled with uneasy emotions, he left his house at night and repaired to Budha at Isipatana, a retreat near the city. Budha calmed his mind with his conversation, and the young nobleman was convinced of the truth of his doctrine. The mother of Yaso, missing her son, alarmed her husband, who sending out mounted servants to seek him in every direction, repaired himself to Isipatana, where he also became converted to the faith of Goutama, and consented to the desire of his son to become a priest. The whole family followed the example of the nobleman, and embraced the new religion.

There were four young men of noble birth, the friends of Yaso, living in Benares. They, hearing that Yaso had forsaken secular life, shaved his head and beard, put on the yellow robe, and become a priest of Budha, were induced to follow his example. Fifty young men also, who were the friends of Yaso in the provinces, were persuaded by him to become his companions; and as they all became Rahats, the Buddhist community consisted of 61 priests, all of whom had attained the perfection of virtue.

Budha then called his priests together and directed them to travel into the provinces, to disseminate his doctrines, that from a feeling of compassion, they might promote the profit and happiness of gods and men. He added, Go singly, priests, not two to one place, and preach this doctrine which is excellent in its commencement, excellent in its continuance, and excellent in its termination; which is replete with instruction and clearly expressed: thus make known the

perfect and pure path of the priesthood. He at the same time expressed his own intention of going to a village near Uruwella, to preach his doctrines.

The priests, in obedience to the directions they had received, travelled into the provinces, and made many converts.

Of these, several desired admission into the priesthood, and as Goutama had hitherto reserved to himself the right of admitting candidates, they brought the applicants to Budha that they might be admitted to the priesthood, and obtain Upasampadā.

The first of these, “Pabbhaja,” is the retiring from secular life for religious purposes, and applies to the whole body, whether novices or ordained priests. The latter, Upasampadā, is the state of full admission to the priesthood, being derived from the verb, Upasampajjati, *to attain*.

Budha, perceiving that this mode of proceeding was fatiguing both to the priests and to the candidates, determined to confer upon the priests the right of admitting candidates into the priesthood. For this purpose, he called them together, and delivered the first of his precepts respecting Ordination. These are in the form of permission, commencing with Anujānāmi, I permit.

Having assembled the priests, he said,

1. I now allow you, priests, to ordain to the priesthood and admit to Upasampadā, in any part of the provinces in which you may be. And in this manner, priests, shall ye make priests, and admit to Upasampadā. First, having caused the head and beard to be shaven and a yellow garment to be put on, make (the candidate) remove his upper garment from one shoulder, worship the feet of the priests, and [*Lit:* sit on his heels] kneel down. Let him then lift up his joined hands, and say, I take refuge (1) in Budha, I take refuge in Damma (his doctrine), I take refuge in the Sangha (the priesthood). A second time I take refuge in Budha, I take refuge in Damma, I take

(1) Or I go for aid: *සරණංගচ্ඡාමි*.

refuge in the Sangha. A third time I take refuge in Budha, I take refuge in Damma, I take refuge in the Sangha. I permit priests, admission to the priesthood and to Upasampadā, by this thrice taking refuge.

Budha, having exhorted the new priests to seek by meditation and effort the deliverance he had himself obtained, left Benares and went to Uruwela. During his journey, he converted 50 young men who were friends, and admitted them to the priesthood; and some time after his arrival in Uruwela, he succeeded, after performing many miracles, in converting 1000 Jatilas, or ascetics with clotted hair, who were worshippers of Agni, the god of fire. These being men of renown, their conversion produced a great impression.

He left Uruwela, accompanied by the 1000 Jatilas whom he had ordained priests, and going first to Gāyasisan, at length arrived at Rājagaha, the metropolis of Magadha, and resided in a Chētiya (or sacred grove) near the city.

The king of Magadha, Seniyo Bimbasāro, having heard of his eminence as a teacher, went to the place where Budha was; his (the king's) retinue consisting of 120,000 Brahmins and householders. Budha preached to this multitude, who were all, together with the Sovereign, converted to the new religion, and entered the first of the paths leading to Nirwāna.

After the discourse was ended, the king observed, that when he was a youth, he had desired five things, and they were then accomplished. The first, said he, was, that I might be an anointed king: this has been accomplished. The second was, May a Rahat, a supreme Budha, appear in my dominions: this also has been accomplished. The other wishes were, May I visit that Budha! May I hear him preach! May I understand his doctrine! The whole of these are now fulfilled. Will Bagawa with the priests take their meal to-morrow at my residence. Budha having by his silence intimated his acceptance of the invitation, the king departed and had the necessary preparations made: and on the

morning Budha went to the palace accompanied by the priests. The King, having with his own hand supplied him with food, continued standing until the meal was ended, when he sat down a short distance from Budha. While thus seated, he thought, Where can a residence be provided for Bagawa, out of the city, but at such a distance as will be convenient for those who desire to resort to him for instruction: a retired place, free from noise, and removed from the commotions and unpleasantness of the population at night? He then selected the royal garden at Weluwana, and determined to present it to Budha and his priests. He accordingly took a golden vessel, and pouring water on the hands of Budha, said, Lord, I present the garden of Weluwana to Budha and the priests; accept, Lord, the garden.

Upon returning from the city, Budha convened the priests and enacted the following:

2. I permit priests (the acceptance of) a garden.

The arāmo or garden, is an enclosure of indefinite size, with the buildings erected within it. This at Weluwana must have been a park of considerable extent, as it was to accommodate several thousand priests. But, although by this precept permission is given to the priesthood to possess residences and the ground or (compound) in which they are situated, yet it cannot justify the holding of fields and other grounds for cultivation.

Following the relation of these circumstances, the conversion of Sāriputto and Moggalāno, who were afterwards the chief priests of Budha, is recorded.

At that time, a Paribajiko, named Sanjayo, resided in Rajagaha attended by 250 eminent disciples, among whom were Sāriputto and Moggalāno. They were intimate friends, and had engaged that whatever excellence in doctrine the one should ascertain, he should communicate it to the other. The priest Assaji in the morning entered Rajagaha with his bowl to collect alms. Sāriputto saw him and was struck with the sanctity of his appearance, and concluded that he must be a man of eminent piety. Determining to ascertain

to what sect he belonged, who was his preceptor, and what doctrines he held, he followed him when he left the city, and entering into conversation, said, Friend, your appearance is pleasing, your aspect placid, and your complexion clear: Under whose direction are you a priest? Who is your preceptor? And what doctrines do you hold? The priest replied, The Maha Samana of the Sākya race has become a priest, and I am under his direction. Bagawa is my preceptor; and I hold the doctrines taught by him. Sāriputto further enquired, What doctrines does that preceptor teach? What does he declare? Assaji replied, Friend, I have only recently become a priest, and am not able fully to declare his doctrine: but I will give you a brief account of it. Friend, said Sāriputto, be it little or be it much, declare it. Speak that which is important, and I shall understand it; speak explicitly. Assaji then spoke the following stanza:

සෙධිමි නෙත්‍රප්පභවා තෙසංනෙත්‍රංභවානතො

ආහ තෙඤ්ඤ සො භිඤ්ඤා ධර්මං ආදි මහාසමමනො

Whatever things result from causation, those things and their causes are declared by the Tatagato; and whatever of them may become extinct, that also the Maha Samanamakes known.

Sāriputto at once saw that this was the doctrine he had been endeavouring to ascertain. His mind became illuminated, and perceiving that whatever is produced must also cease to be, he entered the first of the paths leading to Nirwana. Meeting Moggalāno, he related the circumstance, who proposed to join Budha at once. They however determined first to converse with their associates; and these agreed to accompany them. They advised their chief, Sanjaya, to take the same step; but he declined, and afterwards died of vexation. When Budha saw them and their associates approaching, he said, The two friends Kolita, (Moggalāno) and Upatissa (Sāriputto), are coming. These will be my two chief disciples. (Both of them were Brahmins of eminence, and were natives of Rājagaha.)

Sāriputto and Moggalāno then approached Bagawa, and bowing their heads down to his feet, they said, Receive us, Lord, as priests under the direction of Bagawa, and allow us to obtain Upasampadā. Budha replied, Approach, priests, clearly declared is the doctrine; walk in the pure path for the entire extinction of sorrow. By these words they received Upasampadā.

At that time spiritual superiors (උපජ්ඣා upajjha) and preceptors (ආචරියා āchariya) had not been appointed; in consequence of which, many of the priests being uninstructed, were slovenly in their dress, solicited alms in an improper manner, and were noisy and loud in their conversation. The populace were displeased at this, and loudly expressed their disapprobation. The modest and grave priests expressed their disapprobation of such conduct, and reported the circumstances to Budha, who convened an assembly of the priests, censured the offenders, and gave the following precept;

3. Priests, I permit (or direct) that there shall be spiritual superiors.

He then details the relative duties of the superior, (upajjhayo උපජ්ඣායො) and his co-resident priest (saddhiwihariko සද්ධිවිහාරිකො). The superior is to regard his co-resident as his son, and the co-resident shall regard his superior as a father, and they are mutually to respect and honor each other. No priest can intrude himself upon another as his spiritual father or superior, but must be solicited to undertake the office by the priest wishing to become his co-resident. The applicant must come to the priest, remove his robe from one shoulder, worship the feet of the priest (i. e. bow down to the ground before him), and then kneeling down, shall say, with joined and uplifted hands, Lord, become my spiritual father (or my upajjhayo). If the priest applied to in any way indicates his assent, the connection is formed. The co-resident is carefully to perform his duty to his superior, which comprises all the duties

of a personal attendant. He is to rise early in the morning, and respectfully to approach his superior, bringing water for him to wash, and supplying him with refreshment, if he require it: he is to arrange his couch, sweep out his apartment, assist him to dress, and if required accompany him when he goes out, walking respectfully behind him. The superior is to advise and instruct his co-resident, and perform to him all the duties of a parent, both in sickness and in health. The relative duties are laid down in detail by Budha.

Some of the co-resident priests refused to perform their duty to their upajjhāyo. This being reported to Budha, he decreed:—

4. It is not proper, priests, that a co-resident should not perform his duty to his upajjhāyo. He who does not perform his duty, is guilty of Dukkata (i. e. an offence requiring confession, and absolution.)

They still remained disobedient, which being related to Budha, he decreed:—

5. I permit, priests, that the disobedient shall be suspended (from his position as co-resident.)

And thus shall he be placed under discipline:—The superior may declare by words or intimate by signs, “I suspend you:” or he may say, “Return not to this place:” or “Take away your bowl and robes:” or, “I have no need of your services.” Should any of these forms be used, the co-resident is suspended, but not otherwise.

A co-resident priest thus suspended did not seek reconciliation. But Budha decreed:—

6. I direct, priests, that those who are suspended shall not be without seeking forgiveness. He who does not seek forgiveness is guilty of Dukkata.

Some upajjhāyo, upon forgiveness being solicited, refused to be reconciled. This was reported to Budha, who decreed:—

7. I direct, priests, that forgiveness be granted: (1)

(1) Or, “Priests, I command to forgive,” for the permission or direction is always regarded as a command, when spoken by Budha.

Notwithstanding this direction, some of the upajjhāyo would not forgive; and the co-resident priests being discouraged, left the priesthood, or joined themselves to other religious communities. Upon this, Budha decreed:—

8. It is not proper, priests, to refuse forgiveness when it is solicited. He who refuses to forgive is guilty of Dukkata.

Some superiors suspended the obedient, and permitted the disobedient to remain free. This being reported to Budha, he decreed:—

9. It is not proper, priests, to suspend those who perform their duty. He who does so is guilty of Dukkata.

10. It is improper, priests, not to suspend those who neglect their duty. He who does not place such under suspension is guilty of Dukkata.

On one occasion a Brahmin requested ordination, but the priests (to whom he applied) were not willing to grant his request; upon which he pined away with grief, lost his colour, and became very unhappy. Budha noticed the change in his appearance, and enquired respecting the cause. They informed him; upon which he asked, Does any priest remember any good deed performed by this Brahmin? Sāriputto said, that he remembered a good act; for that on one occasion, the Brahmin directed food to be put into his bowl. Budha praised Sāriputto for remembering a kind act, and directed him to make the Brahmin a priest. Sāriputto enquired what formula he should use in ordaining him. Upon this, Budha called a meeting of the priests, and said,—

11. Priests, I formerly permitted Upasampadā to be given upon the three-fold repetition of the Sarana: from this time I revoke this permission: I now direct Upasampadā to be given by, including the announcement (အေဉ်ခိ), a four-fold act. (1) And thus shall Upasampadā be given. A fluent and learned priest shall present the proposition to the Sangho (2)

(1) That is, an announcement of the intention, and the question being put thrice to the assembly.

(2) A chapter of the order.

and say, Hear me, my Lord the Sangho; such a person⁽¹⁾ seeks Upasampadā under such a venerable person.⁽²⁾ If it be a convenient time for the Sangho, the Sangho will give M Upasampadā under N as his superior, (or upajjhāyo). This is the proposition :—

Hear me, my Lord the Sangho, this M seeks Upasampadā under the venerable N. The Sangho gives Upasampadā to M, under N as his superior. If any venerable one consent to M receiving Upasampadā under N as his superior, let him remain silent: if he do not consent, let him speak. A second time I repeat the same thing :—

Hear me, my Lord the Sangho, this M seeks Upasampadā under the venerable N. The Sangho gives Upasampadā to M, under N as his superior. If any venerable one consents to M receiving Upasampadā under N as his superior, let him remain silent. If he do not consent, let him speak. A third time I repeat the same :—

Hear me, my Lord the Sangho, this M seeks Upasampadā under the venerable N. The Sangho gives Upasampadā to M, under N as his superior. If any venerable one consent to M receiving Upasampadā under N as his superior, let him remain silent; if he do not consent let him speak. Upasampadā is given to M under N as his superior. The Sangho consents, and therefore is silent: and thus I receive it.

A priest after having received ordination acted improperly. The priests remonstrated with him, saying, Friend, act not thus: such conduct is not lawful. He replied, I did not request you, venerable men, to give me Upasampadā. Why did you give it to me unsolicited? They reported the case to Budha, who decreed:

12. It is not proper, priests, to give Upasampadā to those who do not solicit it. He who thus gives Upasampadā, is guilty of Dukkata. I direct, priests, that Upasampadā be

(1) For this I shall substitute *M*.

(2) For this I shall substitute *N*.

given upon a request (of the candidate). It must, priests, be requested as follows ;—

The person seeking Upasampadā must come to the Sangho, and removing his robe from one shoulder, worship the feet of the priests ; he must then kneel down, and raising his clasped hands, say, My Lord the Sangho, I request Upasampadā. My Lord, the Sangho, compassionate me, and raise me up.(1)

A fluent and learned priest shall then lay the proposal before the Sangho, and say, Hear me, my Lord the Sangho, &c., using the formula prescribed in the foregoing precept.

At that time, many persons in Rajagaha supplied the priests with abundance of the most excellent food. A Brahmin noticing this, thought, These sons of Sakya act in a becoming and virtuous manner : they eat good food, and sleep in places defended from the wind. It will be advantageous, if I become one of that priesthood. He accordingly requested, and obtained ordination. At length, the supply of food brought to the monastery was diminished, and he was directed to take his bowl and collect alms : this he declined, saying, that if they gave him food, he would remain ; but if not, he would leave the priesthood. What, friend, said they ; did you become a priest for the sake of your belly ? Truly I did, he replied. The virtuous priests, being much dissatisfied, related the circumstance to Budha, who reproved the offender, and decreed ;—

13. I direct, priests, that those who give Upasampadā shall declare the four Nissāya (or things incumbent on a priest). 1st, The priesthood is for the purpose of living upon food collected as alms. This is that to which you are to attend as long as you live. 2nd, The priesthood is for the purpose of wearing garments made of cast away cloth. This is that to which you are to attend so long as you live. 3rd, The priesthood is for the purpose of residing at the foot of a tree. To this you are to attend so long as you live. 4th,

(1) The comment says, either from a state of vice, or from the lower order of a novice.

The priesthood is for the purpose of using as medicine the urine of horned cattle. To this you are to attend so long as you live.

This appears to have been the original rule for the priesthood, but it was soon modified; and now under each head, articles are arranged, called "Extras allowed" *අතිරේක ලාଭ*. The four Nissāya or necessities, are food, raiment, dwelling, and medicine. Under the first, in addition to food collected in the alms-bowl, the extras allowed are, food brought to the temples for the priests generally; daily food furnished by individual benefactors; food of which they are invited to partake at the houses of their disciples and others; food given on certain days; on the Poya days (the days of the changes of the moon); and on occasional days. These extras in a great measure nullify the original rule.

Under the second, or raiment, in addition to garments made of cast away cloth or refuse, they are permitted to wear robes made of linen, cotton, silk, woollen cloth, hempen cloth, or apparently any thing which will take a yellow colour.

Under the head of a dwelling, in addition to living at the foot of a tree, they are allowed to dwell in temples, halls, square houses, terraced buildings, and caves.

Under the head of medicine, they are allowed, in addition to cows' urine, ghee, butter, oil, honey and sugar. By these, *Atireka lābho*, the ascetic principle, is destroyed. From the next precept, it would appear that these extras were only occasional at the commencement of the system.

A young man solicited admission to the priesthood, and they immediately informed him of the four Nissāya. He replied, If as a priest I am to be subject to these rules, I am unwilling to enter the priesthood, and went away disgusted. They informed Budha, who ordained—

14. Priests, the Nissāya shall not be previously declared to the (applicant for ordination). He who declares them is guilty of *Dukkata*. I direct, priests, that they be declared at the time of giving *Upasampadā*.

At one time, Upasampadā was given in assemblies where only two or three priests were present. This being reported to Budha, he decreed:—

15. Priests, it is not proper that Upasampadā should be given in an assembly of less than ten priests. Whoever gives Upasampadā in a smaller assembly, is guilty of Dukkata. I direct, priests, that Upasampadā be given in an assembly of ten priests, or of more than ten.

At that time, some priests who had only received Upasampadā one or two years, assumed the office of superior (upajjhaya), and received co-resident priests. This being perceived by Budha, he decreed:—

16. It is not proper, priests, that any one of less than ten years' standing shall give Upasampadā. He who does so, is guilty of Dukkata. I direct, priests, Upasampadā to be given by those who are of ten years' standing, or of more than ten years.

There were priests of more than ten years' standing, who were neither eloquent nor learned; and when they became superiors, it sometimes happened that the subordinate was more learned than his spiritual father; and from this many evils arose. This being represented to Budha, he decreed:—

17. Priests, it is not proper that one who is incompetent and unlearned, should give Upasampadā: he who does so, is guilty of Dukkata; I direct that Upasampadā shall be given by priests competent and learned, who are of ten or more years' standing.

Afterwards, as many of the superiors had removed to other places, or had left the priesthood, or had died, great disorders prevailed among the priests, some of whom became slovenly and irregular in their habits: to remedy this, Budha decreed:—

18. I direct, priests, that there be preceptors.

The āchariyo or teacher stood in the same relationship to the antēwāsiko or pupil, that the superior stood in to his co-resident priest: the rules belonging to preceptor and pupil

are precisely the same as those respecting superior and co-resident; and it is not necessary here to repeat them: the receiving a pupil is called "to give (Nissāya or) proximity," as the pupil was to reside with his teacher, unless his presence was required by his upajjhāyo or superior.

(*To be continued.*)

Statistical Account of the District of Chilaw and Putlam, North-Western Province. By A. O. BRODIE, ESQ.

THE District of Chilaw and Putlam forms the Maritime portion of the North-Western Province, and is bounded by the Northern Province, Seven Korles, Western Province, and the Sea. Its length from North to South is about eighty miles, and its breadth is irregular, but averages probably sixteen or somewhat less.

The general appearance is flat, especially along the coasts: towards the interior, low undulating ridges and a few isolated granite groups are observed. The whole surface, except where salt water marshes occur, or cultivation has been established, is covered with dense jungles containing valuable timber trees.

The District is not physically divided in any way, with this exception, that from Kalpentyne to Mahdampe (about fifty miles) there runs a narrow low sandy peninsula, the northern portion of which is termed Akkerei-pattoo, and which is separated from the main-land by the Gulf of Kalpentyne, Quiparawa Canal, and Kaddoopittee Oya, successively. From its northern extremity, a narrow chain of Islands runs towards Manaar, and has doubtless, in a previous age, formed a continuation of the peninsula. For financial purposes, however, the District is divided into the following sections.

Putlam District.

Northern and Southern Divisions of Chilaw District.

The first of these is subdivided into six Pattoos (Putlam, Kalpentyn, Akkerei, Pomparippoo, Koomarewanny, and Rajawanny Pattoos).

The second into twelve (Ahnewoolenden and Moonisseram Pattoos of Demelé Pattoo, Chilaw, Demelé, Moonisseram and Ahnawoolenden Pattoos of Chilaw Pattoo; Koomarawanny, Pándithe, Periwille, Karembe, Rajáwanny, and Kirimittiya Pattoos).

The last into four; namely, Yágam, Meddhe Pelláte, Othere Pelláte, and Kaimel Pattoo.

The entire population, as obtained from the official returns of last year, is thirty-eight thousand three hundred and seventy.

It would appear from statements now before me, that the number of males exceeds that of females by about eight per cent.; that this difference really exists is improbable; the mistake is caused in part by those feelings which have hitherto made it all but impossible to obtain correct statistical returns in Ceylon, (namely, a dread that every census is the prelude to increased taxation, and a superstitious dislike to any numbering of the people); and in part, because females are regarded in so degraded a light, that if care be not taken, they are on such occasions altogether omitted. The excellent Ordinance concerning statute labour, which is soon to come into force, will, among other advantages, also have this,—that it will much facilitate the drawing up of correct population returns.

Rivers.

There are no navigable rivers in the District. The most important are the Kálá Oya, Dedroo Oya, and Kaddoopittee Oya. Of these, the two latter are the only ones which are not entirely dry during several months of each year; but even this pre-eminence is, I think, due to their channels being so horizontal and so low for some miles above their embouchures, that the water of the sea penetrates far inland. During the dry season there is consequently little or no current.

The Kadoopittee Oya, from Mahdampe to about two miles north of Chilaw, at all times contains sea-water, and forms a portion of the Colombo-Putlam Canal. Immediately at Mahdampe an embankment is thrown across the stream for the purpose of filling a large tank belonging to the village.

All the above rivers, taking their rise among the Korne-galle hills far to the east, are liable to sudden floods, even at times when the country through which a great portion of their course runs, is parched by lengthened droughts. On such occasions, the channels fill up with almost inconceivable rapidity, and the stream which might be crossed almost dry, becomes, in the course of an hour or two, a wide, deep, swift torrent. It is from this circumstance, that the Dedroo Oya is termed by the Tamuls, the Mayawan Aar, "Sudden river."

Lakes.

There is no natural fresh-water lake; but owing to the extensive cultivation of Paddy, numberless tanks or reservoirs, some of them several miles in circumference, are scattered over the country.

The only salt-water lakes are those at which are situated the salt pans of Putlam, Natchically, Kahrative, Tilliaddy, Oodappankarie, &c.; and those which form part of the Canal from Chilaw to Putlam. The Gulf of Kalpentyn, which is about eighteen miles long, and from two to six broad, may from its land-locked position, and its shallowness, be regarded as a lake. In fact, such is its usual designation among the European descendants.

Harbours.

There is only one Harbour in the District, namely, Kalpentyn. It is situated near the opening of the Gulf to which it gives its name. The channel to sea-ward is unfortunately tortuous and shallow; small native craft can therefore alone avail themselves of it. About four or five miles to the north of the town, there is, however, a spacious bay, which can be entered by vessels of considerable burden, and in which I under-

stand, they can always ride with tolerable safety. It is locally known under the name of Dutch Bay. Were a good road formed from it to Kalpentyn, it would, I have no doubt, give a considerable impulse to trade, by relieving merchants from the risk and expense of removing their cargoes to the mainland in small boats or canoes.

The whole of the remaining portion of the sea-coast, either in consequence of shoals, or from the violence of the constant surf, is inaccessible; and owing to the existence of bars which run across the mouths of the Dedroo Oya and Chilaw rivers, coasting vessels are prevented from making an entrance there.

Water Communication.

There is only one Canal in the District, that which connects Kalpentyn with Colombo. It was originally projected and partially opened by the Dutch, but was only brought into an efficient state about twenty years ago. By means of it, a great portion of the trade of the District is carried on; boats from the Southern Province coming up either empty or with small cargoes of furniture, betel leaves, jack fruits, &c., and taking away salt, copperah, paddy, &c., to Negombo and Colombo. It is very much to be regretted, that of late this Canal has again fallen into bad order, and during several months of each year is laid quite dry at various points.

That such should, at any future period, be the case, is, however, not at all probable; and it may therefore be confidently expected that the trade of the District will rapidly and steadily increase.

Land Communication.

There are only three high roads in the District, all of which centre at Putlam; they lead respectively to Colombo, Kurnegalle, and Anooradhapoor.

The first is at present in a state of tolerable repair, and is every where passable for vehicles, the requisite bridges having been constructed. It is not a road of much importance, as all heavy and bulky goods to be conveyed in its direction are of course taken by water.

The second has of late years received considerable attention; bridges have been made, embankments thrown up, &c. There is a great and rapidly increasing traffic along it; many thousand pounds worth of salt being annually taken up it to the interior.

The third has as yet been only partially opened, and is not available for carts. Large quantities of cotton, paddy, &c., are however, brought down by it to the coasts, and the natives living on the borders of this and the Northern Province inform me, that they derive much advantage from it, even in its present imperfect state.

Climate.

The climate of the District in its general features resembles that of other parts of the Island similarly situated. For further details, I am unable to refer to any paper except that which I had lately the honor to submit to the Society, and deem it unnecessary to state more than merely, that from observations continued for one year, (from 1st August 1847 to 31st July 1848) and registered at 9 A. M., at noon, and at 3 P. M., it appears that

The highest temperature remarked was	...	91.25 Fahr.
The lowest	... ..	72.00
The highest mean of any month was in March		85.796
The lowest do.	do. December	78.229
Average temperature at 9 A. M.	...	80.142
Do.	do. noon	82.735
Do.	do. 3 P. M.	82.675
General mean temperature at Putlam	...	79.718
Extreme range between 9 A. M. and 3 P. M.		19.25
That the south-west wind occurred on	...	205 Days.
Do.	north-east ...	73
That the number of calm days was	...	34
Do.	do. rain days...	112
Do.	do. thunder days	98
Thunder storms at Putlam	... ..	21

All that part of the District which is freely exposed to the influence of the sea-breeze, is on the whole healthy, but

towards the interior, where lofty forests check all circulation of air, and where extensive swamps and neglected tanks give rise to noxious miasma, the people are much subject to fever, lingering ulcers, and various cutaneous diseases. During the prevalence of the N. E. Monsoon, the wind traverses the pestilential marshes just mentioned, before reaching the maritime parts, and gives rise to sickness there.

Cholera occasionally visits the District, but seems to occur only in September and October; that is, immediately preceding the commencement of the rain. It is at least possible, that the drinking of water from the small pools loaded with decaying vegetable and animal matter, may, in some way, be connected with the occurrence of this disease. It is a common and apparently correct remark, that any decided change of weather causes a cessation of the disease.

In stating that the Maritime Pattoos are healthy, I ought to have excepted the village of Kalpentyn, in which the number of deaths, especially among the females, is truly lamentable. This state of things has, so far as I can learn, only existed since the town has been surrounded with numerous cocoanut topes, which, in combination with narrow winding lanes, effectually prevent ventilation, and would very probably be in a great measure removed, if one or more straight roads were cut running East and West from the Sea to the Gulf.

Regarding the quantity of rain, moisture in the atmosphere, &c., no observations have, so far as I am aware, been made.

The natives unanimously concur in stating, that at one time the Jungle Pattoos were much more healthy than at present, and account for the change by the existence of numerous tanks then used for irrigation, but now neglected.

Geology.

The Geology of the District presents little that is attractive, except indeed to those who turn their attention to the minuter varications in the older rocks.

All along the sea-coast there are a series of horizontal beds of sandstone, belonging in all probability to the present formation, and never elevated more than a very few feet above the present water level. The rock itself varies in structure, and contains numerous enclosed shells and corallines, apparently identical with species existing in the neighbouring Ocean. The shells in many cases retain the enamel, and are in all respects as perfect as if they had just been washed into the beach.

At Kahrative, fourteen miles to the North of Putlam, there are various strata of calcareous rock, some friable as marl, some highly indurated. These also undoubtedly belong to the present formation.

The soil of the maritime parts is in general sandy, but interspersed with rich alluvial earth, potters' clay and fresh water marl of recent origin. Towards the interior, where the isolated granite rocks previously mentioned appear, large deposits of cabook gravel are met with.

That changes in the relative positions of sea and land have occurred here within the historic period, seems to be proved by the existence of a tradition to the effect, that in the time of the famed Queen Alliar Sahni, the Gulf of Kalpentyu had no opening to the Northward, but communicated with the sea by a channel running in the line of the present Chilaw Canal, and that the Queen above named used to proceed from Koodirei mallie to the Akkereipatto by land; that a great flood came, buried her palace under the waves, and bursting through a neck of land, converted the lake into a gulf, which form it still retains.

Mineralogy.

No gems have been found in this District; and the only ore which I have heard of is the bog iron ore, procured in considerable quantities a few miles to the south of Chilaw, and smelted by the natives, who have, it appears, observed its reproduction.

Nitre used at one time to be procured from various caves. One of these I visited, and have reason to believe that the salt was not formed naturally, but was obtained artificially from the dung of countless bats which have their abode in the grotto.

Salt is procured in large quantities by evaporation of seawater, and indeed forms the chief source of public revenue. The greater portion of it is obtained by means of artificial pans; a few hundred bushels are, however, occasionally spontaneously formed near Kalpentyn, during the dry season.

At Oopookoolum, fifteen miles N. W. of Putlam, the natives affirm that a very bitter kind of salt (Epsom?) is to be procured. I have not, however, had any opportunity of verifying the statement.

Springs.

No medical or thermal springs are known.

Soil, Agriculture, &c.

As previously mentioned, a great portion of the soil in the Maritime Districts is a silicious sand, more or less mixed with comminuted shells. Where granite rocks exist, a reddish loam takes the place of the sand; and on the margin of rivers and lakes a rich black mould, well adapted for the cultivation of paddy, is to be met with. In some places a retentive clay exists and is used in the manufacture of bricks, &c.

The two staple vegetable products of the District are Cocoanuts and Paddy.

All the country lying along the sea-coast is occupied by topes of cocoanut trees, which flourish in a soil consisting apparently of pure sand. The finest plantations which I have seen are at Mahdampe, on the site of the former Pepper gardens; but the whole eastern side of the Akkerei Pattoo yields good crops, which the natives attribute in part to the existence of thin sandstone beds a few feet under the surface of the ground. Below these strata there is water, and it appears that this, by capillary attraction, rises through the stone,

thus keeping the roots damp, and at the same time preventing them from being constantly immersed in stagnant water.

The tree seems to flourish best in the immediate vicinity of the sea, and I have frequently seen it growing well with its roots partially immersed in salt water. Owing apparently to the porousness of the soil, an elevation of a few feet is found to act nearly as prejudicially as a removal to a distance of several miles from the coast. The benefits which the cocoanut tree bestows on the natives are so well known that it is unnecessary to particularize them. The oil which is in such general use is usually obtained by expression, one end of a bent lever being inserted into a large mortar-shaped vessel so as to rub against the inner surface, while the other is attached to the draught cattle. The cake which is left is called poonack; it contains a large quantity of oil, and is used for fattening poultry, cattle, &c.

There are about 950,000 cocoanut trees in the District; and as about eighty are generally placed on an acre, it would appear that about 12,000 acres are devoted to this plant, each acre being worth a rent of from twenty to sixty shillings. Each tree yields from twenty-five to seventy nuts, though some occasionally are found to give a crop six or eight times greater than this; but in those cases the nuts are generally small.

From one thousand to one thousand five hundred nuts yield on an average a bar of copperah (the dried kernel), and this yields about one hundred and forty seers or 320 lbs. of oil. The average price of copperah is from 22*s.* to 30*s.* and above, per bar; that of oil 2½*d.* to 3¾*d.* per bottle; and that of poonack about three-fifths of a penny per lb., and from 8*s.* 9*d.* to 11*s.* 8*d.* per bar. One bar of copperah yields about 210 lbs. of poonack.

There are, besides those already enumerated, certain other products of the cocoanut tree, which add to the profits of the planter. Thus, the leaves split lengthways and then woven together by means of the leaflets, form what are called cadjans,

of which a hundred sell for 1*s.* 6*d.* or 2*s.*, or if the cadjans be woven into a sort of continuous sheet or mat, called a carrisango (twelve cadjans making from four to six carrisangoes), a hundred of these are worth 4*s.* or 4*s.* 6*d.* Again, 250 to 300 nuts give 1000 fathoms of coir rope, worth about 2*s.* 6*d.* In fact, the uses of this tree are endless.

As might be expected, the prices of the various products obtained from the cocoanut tree, vary extremely in different parts of the District. To prevent misunderstanding, I give separately the usual prices at Kalpentyn in the north, and Mahdampe in the south. At both places the tree flourishes and is cultivated to a great extent.

At Kalpentyn the cocoanuts are worth about £1 10*s.* per 1,000. Poonack from 8*s.* 9*d.* to 11*s.* 8*d.* per bar, (one quarter of a ton). Copperah £1. 1*s.* to £2. 3*s.* per bar. Oil 5*d.* to 5½*d.* per seer.

About 300,000 cocoanuts are annually exported from Kalpentyn, almost the whole quantity going to the Continent of India; a few thousands besides are sent over in the husk for planting. From the same Port 1000 bars of copperah go to Colombo, 100 to the Northern Province, and 2000 to the Coast. The last mentioned paying an export duty of 2½ per cent. A small quantity of oil is sent to Jaffna, and occasionally a little to the Coast. Return Dhonies take about 50,000 cadjans to India annually; these pay a duty of 2½ per cent., and are worth at Kalpentyn from 1*s.* 6*d.* to 2*s.* per 100; but at the places where they are made not more than from 7½*d.* to 9*d.* per 100.

At Mahdampe, on the other hand, copperah is worth from £1. 2*s.* 6*d.* to £2. 5*s.* per bar; poonack ¾*d.* per lb., and oil from 2¼*d.* to 3¾*d.* per bottle. About 10,000 or 12,000 bars of copperah are annually taken to Colombo for sale.

I ought perhaps to add, that the tree is generally at first grown in nurseries, and that it will bear transplanting at a considerable age.

It is greatly to be regretted that the upset Government

price for land is as high here as in districts of which the capabilities have already been ascertained. Capitalists are unwilling to give the price demanded, knowing, as they do, that natives are in the habit of selling equally good land at rates a half or a third lower; and on the other hand, they are deterred from buying the ground from natives, partly on account of the difficulty which they would experience in purchasing large continuous tracts, and partly from a dread lest their title to the land might at a future period be disputed by Government, which would most probably occur in numerous cases.

The native mill, being a very imperfect apparatus, large quantities of copperah are annually sent out of the District, chiefly to Colombo. It is much to be desired that the oil itself should alone be transported; and this cannot be expected until some better kind of mill has been introduced. Many years ago an Englishman began to construct such an apparatus at Kalpentyn; it was made on the plan adopted in Europe, where a heavy vertical wheel is forced to move in a circular path over the substance to be crushed.

The cultivation of the cocoanut is extending very rapidly; and as the District affords every facility for water traffic, it may be presumed that the number of topes will be increased year after year.

The farming system adopted with regard to this plant is that customary in many parts of the East. The land-owner places on the grounds one or more peasant families who take charge of the plants until they are in full bearing (that is, for from four to eight years), at the end of which time the tenant receives one half of the trees as his hire (this gives him, however, no claim to the land itself). Occasionally, instead of making this division, the proprietor dismisses the cultivator after paying him at the rate of a shilling or a dollar for each tree. It is almost unnecessary to add, that during the first three or four years the plants must be watered daily in dry weather.

I know of no more legitimate source of public revenue, than a small tax on fruit-bearing cocoanut trees. Whenever this

has been proposed, the natives have made a great outcry; but it is quite notorious, and is indeed freely acknowledged by themselves, that no sooner is a man in possession of a small cocoanut tope, than he is independent for the rest of his life; he has absolutely nothing to do but to pluck the fruit, eat one portion, and sell the remainder. The paddy cultivator has to labour during several months to obtain one crop, and even this he may lose from unfavourable weather;—he is taxed: on the contrary, the cocoanut cultivator has merely to water his trees for two or three years, and then he may safely reckon on a continuous crop for forty or fifty years; and this without any further labour on his part;—he is not taxed.

In the interior, where the cocoanut does not thrive so well as along the coasts, the natives turn their attention to the cultivation of various grains, in an especial manner to that of Paddy. Of this plant, a great many varieties are known, which, however, so far as this District is concerned, may be divided into two great classes, according as to whether they ripen in four or in three months. The former being sown from July to December yields the Maha harvest in January, February and March. The latter placed in the ground between April and July, ripens in August or September, giving the Yala harvest. Those kinds of Paddy known as Mahawee, Elankaly, Honoraweele, are only sown for the Maha harvest. Most, if not all of the rest, may be used for either crop.

The natives here as elsewhere, make their tanks too shallow, the embankments unequal in height throughout, and the partition mounds too numerous. To shew the evil effects of these mistakes and the best means by which they are to be obviated, would require more room than can be allowed in this sketch.

The farm system is that which has been the curse of India from time immemorial; and it prevails, I believe, in every part of the Island. It is liable to slight modifications, but its general features may be thus described.

No landed proprietor farms his own ground. Twice annually he comes to an agreement with a number of peasants, each of

whom takes charge of the field allotted to him for that one crop, (of course it frequently does happen that a peasant cultivates the same field during several successive years.) When the grain has been threshed and the Government share deducted, the remainder is divided into four equal shares;—thus:

Proprietor; Cattle; Seed-corn; Cultivator.

In general, the landlord provides the cattle and seed-corn; the peasant feeding the former as long as they are employed on the ground.

In most cases no particular arrangement is made regarding the straw. Any one who pleases may take it. In fact, owing to the bad system pursued in reaping, one half or more of it is left in the field as stubble.

Unless either the large proprietors can be induced to farm their own lands, or the natives can be induced to combine to some extent in all objects for the mutual benefit of the inhabitants of each village; and until leases for lengthened periods are adopted, the peasant has no encouragement in endeavouring to improve his farm, and it is utterly hopeless to expect any great improvement in this branch of agriculture.

Such then are some of those circumstances which tend to act injuriously on agriculture. There still remains to be noticed the train of evils arising from the manner in which the grain tax is levied; a system which, however defective it may be, cannot be easily dispensed with. This subject is, however, one of too great importance to be treated of in this abstract.

Much land being so situated that it cannot be irrigated, is reserved for the cultivation of what are called fine grains, such as Kooraken, Minaaree, Sesame, &c.

The system pursued is most destructive. The same piece of ground being sown only once in five, ten, or fifteen years, and the land allowed to become covered with wood in the intervals. The ashes of this brushwood form the only manure employed. The natural effects of a plan by which

each peasant must possess a number of separate patches of land, each large enough to give him a sufficient crop for one year, are abundantly evident. I have often travelled for days together through nothing but chena land (so the clearings are termed), without seeing more than a very few trees of any value as timber.

Nothing but the introduction of the use of manures can check the inherent evils of the system.

These plants then, the cocoanut, paddy, and fine grains, employ the greater portion of the agricultural population; others are, however, cultivated; and of the more important I shall give short notices.

Tobacco is to be met with all over the District; but more attention is paid to it at and to the south of Chilaw than elsewhere.

The system of cultivation is as follows. The ground during from six to twelve months, is manured by railing off successively small portions of the field and using those as cattle folds. There are two seasons for sowing tobacco; that for the Maha harvest is sown in December and January, and cut in March and April; that for the Yala harvest is sown in June and July, and cut in September. Throughout the greater portion of the District, the maha harvest alone is looked to. In the extreme south the yala is that to which sole attention is directed. Two months after sowing, the young plants, which have then four or five leaves each, are removed from the nursery and planted in rows three feet apart. At intervals during three or four months, the leaves are successively stripped off, dried partly in the sun and partly in sheds, and ultimately piled up in a small close room where they heat considerably. About ten leaves are obtained from each plant; these are worth from $2\frac{1}{8}d.$ to $4d.$; the cost of cultivation being about one and a half pence. The large profit thus shewn is, however, rather nominal than real, as lengthened droughts frequently ruin the crops; heavy rain occurring before the leaves are ripe proves equally injurious.

The price of the leaves varies extremely; the worst are not worth more than a few shillings per thousand, the very best not less than £6., and sometimes even £7 10s. for the same quantity. Those which bring this latter price, are large, thick, viscous, and both taste and smell very strong. The method adopted in drying the produce and in manufacturing it, is extremely defective.

If the land be rented out, the crop is divided thus;—Land owner; Peasant; Cattle; equal shares.

The Palmyra palm is found in all the Maritime portions of the District, but is not much prized. It is chiefly used for the purpose of obtaining from it Toddy and Jagghery. The wood of old trees answers admirably for rafters; the kernals are cool and pleasant; and from the expressed juice of the husk surrounding the nut, a kind of paste called Penattoo is made. In the Northern parts of the Island this substance forms an important article of food.

The Kittool grows freely towards the interior, but is not much cultivated; the jagghery obtained from it is considered superior to all others.

The Talipot is all but unknown.

The Areeka palm is very extensively cultivated in the southern part of the District. It begins to bear about six years after being planted, and produces, on an average, one thousand nuts annually; these are worth on the spot from $2\frac{1}{4}d.$ to $4\frac{1}{2}d.$ per hundred. The tree is short-lived; generally shewing signs of decay after twenty years or so. During the supremacy of the Portuguese and Dutch, the natives at Putlam were in the habit of paying their taxes in betel nuts; these must, however, have been procured from other Districts, as it is found that the tree does not thrive anywhere near the village. The plants shoot up rapidly during the first few years but then die away suddenly. The present produce is unequal to the demand; large quantities are consequently brought from the southern parts of the Island, where the soil is better adapted to the plant.

Plantains grow abundantly every where, but little attention is paid to the selection of good varieties.

The Betel creeper is found in every village, but only towards the south are large gardens given up to this plant.

Pepper was at one time cultivated to a great extent near Mahdampe, but is now totally neglected, the natives believing that if ground be devoted to it alone, the expenses of the cultivation would not be covered, and that if allowed to clamber round cocoanut trees, these would be destroyed.

Coffee grows freely and the fruit is collected by the natives, but it is of course of little or no value.

Cinnamon is found abundantly about eight miles to the south of Putlam, and also in other parts of the District; the bark used to be collected during the existence of the Government monopoly, and the villagers still gather small quantities of it.

The Bread fruit and Jack are much cultivated towards the south; the former grows well at Kalpentyn.

The Sappan wood grows in the District, but I am not aware that it is collected for sale.

In some parts of the District, Hemp (*hanne*) is raised in considerable quantities; but the absence of pure running streams is a great obstacle in the way of the cultivator; it is chiefly employed by fishermen.

Formerly, when the collection of cheya (*Hedyotis* (*Oldenlandia*) *umbellata*) was a Government monopoly, large quantities used to be obtained from the sandy downs which gird the coast; that growing in the neighbourhood of Kalpentyn was considered to be of the best quality. A peculiar caste of people employ themselves to a considerable extent in digging up and drying the root, which yields a very brilliant, and I believe, permanent red dye. About ten or fifteen tons of this article are exported annually to the Continent of India.

It may be proper to mention that at Kalpentyn considerable quantities of a kind of seaweed are dried and sent to different parts of the Island, where it is usually termed Jaffna moss.

The process of preparation consists simply in washing it in fresh water and drying it several times in succession; when boiled and allowed to cool it forms a transparent, nearly tasteless, but, I am told, nourishing jelly. The preparation of the plant was first commenced in 1806, at which time the usual price was 9*d.* per lb., it has now, however, fallen to 1½*d.*, but the process is less carefully conducted than formerly.

The fruits and vegetables are the same as in other parts of the low country; but no attention whatever being paid to their cultivation, the produce of the majority is poor and insipid. English vegetables have at various times been planted; but lettuces, radishes, and some kinds of bean, are the only ones which appear capable of accommodating themselves to the climate.

Cotton grows wild over the whole District, and the product used to be collected in large quantities. Cloth from English looms has, however, to a great extent, driven the native manufacturer out of the market.

Timber.

The whole face of the District, with the exception of a narrow strip along the sea-coast, being covered with wood, a considerable variety of timber trees is to be met with.

The commonest of these are the following.

Ebony. *Diospyrus Ebenses.*

Sattin wood. *Chloroxylon Swietenia.*

Meele.

Halmillil.

Paloo, commonly called Iron wood.

Godaparre. *Dillenia dentata.*

Hora gaha. *Dipterocarpus turbinatus.*

Jack. *Artocarpus integrifolia.*

Teak. *Tectonia grandis.*

Of these, Jack is never found growing spontaneously, and of the Teak there are unfortunately but few specimens left; all the plantations of this tree formed in the southern part of the

District having been cut down, without any provision being made for a future supply. Some young plants were, however, brought up to Putlam about a year ago, and have hitherto grown well.

From some of the indigenous trees various gums and resins, valuable in the arts and in medicine, are obtained.

Fisheries.

As might be presumed, a large number of persons are engaged in catching and in curing fish. For the former purpose various plans are adopted. The passing cooly or lazy villager obtains a savoury addition to his evening meal by cutting off and gradually emptying small portions of half dried up tanks; while others attain the same end by pursuing shoals of fish along shallow channels and suddenly dropping over them conical shaped baskets. The quantity of fish caught in this way would appear extraordinary to those who have not had opportunities of observing that every collection of water, however small, swarms with life. Those whose means are greater, make use of drag nets managed by two persons, which are used either in still water or else in the surf which beats against, and at short intervals surmounts, the shelves of rocks which line the coast.

To catch large fish, hooks and lines, deep sea nets, and stake nets are employed. The latter are ingeniously constructed of saplings tied side by side, leaving interstices of half an inch or more. A fence of these is run out from the shore, and terminates in a series of arrow-headed chambers. It is in these kraals that the majority of the turtle obtained here are caught. Another plan, in constant use among the natives, is to run a fence of saplings or nets from each side of a river, leaving only a small channel in the centre; in this channel they place either a long bag net, or else a series of baskets formed on the principle of a mouse trap; the fish entering with ease but being unable to effect their escape. Shrimp fishers make use of a fine net worked in such a manner as to form a lengthened funnel-shaped figure, to the large circle

forming the aperture of which small lead weights are attached. The net is carried folded over the left arm; a rotatory motion is given to the weighted end which is ultimately propelled to a considerable distance, and in such a manner as to fall on the water expanded and with the opening downwards; the lead weights immediately sink to the bottom and enclose within the circle the fish which happen to be on the spot.

Large quantities of fish are dried, salted, and despatched to the interior; the process is, however, carried out in the most imperfect manner, and the product, consequently, in many cases utterly unfit for consumption, is without doubt a frequent cause of illness among those who partake of it.

Since the tax upon fish was removed, the trade in this article has very much diminished, and the boatmen are most anxious that the duty should again be levied. This may appear paradoxical, but I speak positively. All the chief fishers here having on one occasion expressed their opinions in my presence; and this under circumstances which makes me feel confident that such is the real state of feeling among them.

The anomaly is easy of explanation. When the fish tax was farmed out, it was of course the interest of the renters that as much activity as possible should be displayed. They accordingly made advances to the poorer boatmen; caused their canoes and nets to be repaired, and in return constantly urged them to assiduity. The renter thus secured himself from loss, and the fisher, besides receiving an advance when in distress, found that he had by his industry secured for himself a larger sum than hitherto. In fact, the wish for the tax is merely a modified acknowledgement of the advantages of capital. The people are too wanting in enterprise and too divided among themselves to unite for any useful purpose, and although aware of the advantages of industry, have not energy enough to act upon this conviction without the constant admonitions of headmen. Like all Asiatics, they become utterly helpless if unprovided with chiefs.

Domestic Animals.

Of the domestic animals, no breed is, so far as I am aware, peculiar to the District. Large quantities of cattle are annually brought over from the coast, and are bought up to be employed for the ploughing of paddy fields, as draught or as pack cattle. There appear to be several breeds, but no trouble is taken in preserving or improving any. The largest and handsomest are not considered so profitable as those of moderate size, but on this subject the natives appear to be gradually altering their opinion. Buffaloes in large numbers stray over the plains and through the jungles of the District; they are sluggish animals, are possessed of more physical strength than the common cattle, but are slow-paced and soon sicken and die if they have not frequent opportunities of immersing themselves in water. They are used in farming, and are also commonly employed in carts, a practice which, I believe, is not general throughout the Island. Sheep and goats of several breeds are found in considerable numbers all along the coast. Towards the interior the natives entertain some prejudice against the rearing of them; and indeed owing to the habits of these animals, it would be troublesome keeping them in a district covered with forest and abounding in leopards.

Of the larger cattle, it may, I think, with safety be said, that like guns, one half at least are purchased, not from an expectation that they will yield any direct profit to the owner, but simply as a means of investing money; thus they frequently form portions of the marriage gifts among the natives; and till the present high rate of interest ceases, and the people understand to some extent the principles of banking, and feel confidence in these establishments, the system will doubtless continue. It is only on very rare occasions that cattle are killed for food; the hides are invariably thrown away; and in short, in a district abounding in pasture land, dairies are unknown, milk and butter are rarities, and scarcely any benefit is derived from the existence of cows, buffaloes, or sheep. A large proportion of the natives along the

coast being Mahommedans, pigs are only to be met with in two or three of the larger villages; an English breed has lately been introduced, thrives well, and is being gradually disseminated.

During the last few years the amount of stock has been very greatly diminished by murrain; in many places three-fourths of the animals have died. It is highly desirable that the natives should receive some simple instructions as to the method of treatment in such cases; hitherto charms alone have been applied, and the consequent loss to the country has been very great indeed.

Wild Animals.

It is only within a recent period that attention has, so far as I am aware, been paid to the zoology of the District. I am therefore not prepared to enter into any details at present. So far as the better known and larger animals are concerned, this may be mentioned.

Elephants are abundant everywhere, and cause considerable injury to the cultivated lands. Accidents to human beings are however extremely rare. The jungle Bear and the two species of Leopard (commonly but falsely termed by Europeans, cheta or tiger) are common, the black variety is occasionally met with. Wild hogs are abundant and frequently commit great ravages in young cocoanut and plantain gardens, as do the Porcupines. Herds of Deer are to be seen grazing in the plains or trooping through the forest glades; there are four species, if the Musk deer be included. Jackals abound everywhere; the natives say that there are two distinct species, one large and red, the other smaller and dark; but I have not been able to verify this. Two varieties of the Mongoose are to be seen in every piece of open jungle; they prove destructive to poultry, as do Wild-cats and Civets. The Manis, or scaly ant-eater, I have met with on several occasions. It is used as food. The rivers and tanks abound with Crocodiles, of which there appear to be two species, one attaining a length of

eighteen or twenty feet, and formidable to men and cattle, the other seldom exceeding eight or ten feet, and perfectly harmless when uninjured. Both are naturally timid and fear the face of man. Numerous species of smaller Lizards are found: that commonly known under the name of Iguana is used as food, and its skin is converted into shoes. It is hunted with dogs trained for that purpose.

The forests contain numerous and beautiful Birds and Insects, many yet undescribed; but of these for reasons already given, it would be premature to say any thing at present.

It may be mentioned here that at Kalputty (or Calpentyn as it is often written) a considerable quantity of *biche da mare* is annually prepared and sent to Jaffna for exportation to the Malay Peninsula and China.

It consists simply of the dried bodies of a species of *Holothuria* (sea cucumber), which is found in large quantities along the oozy shores of the Gulf. They are picked up at ebb tide; when taken into the hand the muscular contraction of the thick leathery integument is so strong, that a great portion of the viscera is frequently forcibly protruded; if this does not occur, the animals are opened, and after embowelling boiled for a couple of hours till quite soft, and then dried on the beach if the weather is favourable; under other circumstances in close huts by means of fires. The price on the spot is about 3s. 9d. per 1000, and this quantity can easily be collected by two men during one ebb tide.

Pearl and Chank Fisheries.

Pearl banks exist along the coast from Chilaw to Kahradive Island, but many years have elapsed since they were fished.

Chanks are still in considerable demand; they are exported to the Continent, where they are sawn up and converted into beads, bracelets, and other ornaments. As a branch of revenue this has, however, almost entirely ceased to exist.

History and Inhabitants.

An attempt to write a connected history of any small portion of a country is almost absurd ; its own peculiar politics are trivial, and matters of greater interest at once merge into the general history of the land.

The only historical circumstance attaching much interest to the District, is the erection within it of the first Capital of Ceylon.

From the Maha Wanse (Turnour's translation, p. 47, *et seq.*) and Upham's Sacred and Historical Books of Ceylon (p. 27, *et seq.*), we learn, that on the very day that the last Budha expired, Prince Wijeya, grandson of the Lion, having by his dissolute conduct been driven from his home on the Continent, landed at some part of the coast near Putlam ; that after proceeding a few miles towards the interior and overcoming a female Demon, named Kuweni, who had enchanted and thrown into a dark cavern his seven hundred followers, he built a palace to ratify a covenant which he had made with the sorceress. Around this palace the first Capital of Ceylon was built, and received the name of Tambapanni or Tamana Adaweea or Tamena Noowera, from the red earth found there having stained the hands of Wijeya's followers, who overcome by sea-sickness and faintness, had thrown themselves on the ground to recruit their strength. The place is well known here under the name of Tammena Adaweea ; it lies about six or eight miles to the east of Putlam, and was described by Mr. Casie Chitty in the Transactions of the Royal Asiatic Society. A few rough pillars and slabs scattered at random in a thick jungle are the only remains now visible.

Wijeya's companions and successors soon established themselves in different parts of the country, and in the fifth reign, that of Pandukabhaya, the seat of Government was finally removed about forty miles north-west to Anooradhapoor. A king of Mahdampe (Tanne Wella Bahu,) and the queen Alliar Sahni, who has been referred to in a previous section, are the only other Royal personages having their residence

within the District, of whom, as far as I am aware, history contains any record.

In Upham's Collections (Vol. III. p. 324 *et seq.*) there is an account of the removal of the branch of the Bogaha tree from Tambúdwipa to Bodimandela at Anooradhapoorá, &c. In this tract particular mention is made of a Malabar nation having been called to assist in a local war which occurred in the time of Tissa who followed Dootoogamini. The foreigners landed at Karative, fourteen miles north of Putlam, and appear to have proceeded towards the interior nearly by the line of the present Kurnegalle road. What we are to understand by the nine hundred cannons which the Malabars brought with them, it is difficult to surmise; probably the confusion arises from mis-translation.

The inhabitants, as in other maritime districts, are composed of people of many nations. The Mahomedans or Moormen are said by Sir A. Johnston to have first settled in the Island in the early part of the Eighth century; they formed portion of those Arabs of the house of *Hashum* who were driven from Arabia by the tyranny of the Caliph Abdul Melek Ben Merwen, and who, proceeding southwards, made various settlements in the south of India and Malacca. In Ceylon they carried on a very extensive trade in rice, indigo, chanks, cheya, &c.; and by making advances to the natives for the purpose of repairing the tanks, were the means of keeping the northern part of the Island in a very prosperous condition. These are the most industrious and mercantile class; they are the traders, boutique keepers, master fishers, &c., they also deal largely in cattle and are frequent purchasers of Government taxes. They are for the most part confined to the immediate vicinity of the sea; there are, however, Moor villages scattered about the interior, the inhabitants of which are much disliked and feared by the natives. The Moors have mixed up with their own faith many superstitions borrowed from Hindooism.

Of Malays but few reside in the District, and these are

soldiers, pensioners, or descendants of such, and in general hold small Government employments, such as peons, &c.

The Dutch descendants generally find employment as Clerks, Post-holders, &c. It is greatly to be regretted that this class relies so much on the support of Government; they possess qualities which one would expect to adapt them for the life of tradesmen; and if so employed they would be better off and much more independent; some foolish prejudice is the only obstacle to this desirable change. The majority, I believe, adhere to the Dutch and Protestant Church.

The Portuguese descendants now form on the whole a very degraded class, and seem to be looked down upon by all; they profess Roman Catholicism.

The low country Singhalese employ themselves in keeping boutiques or taverns, trading in salt, cultivating cocoanut gardens, &c. They have to a great extent forgotten Boodhism, and for the most part seem to have no fixed opinion on religious matters, changing their faith with astonishing non-chalance at the call of interest or whim.

The Singhalese who live in the jungle pattoos treat those of the coast with much scorn; they adhere with tolerable firmness to Boodhism, but have not failed to conjoin with this comparatively pure faith, countless superstitions borrowed from other nations. Latterly, owing to the sloth and ignorance of the priests, many of the people are becoming indifferent to Boodhism, and while one constantly finds Vihares going to ruin, few if any are rising to supply their places.

A large number of Tamul coolies annually pass through the District on their way to and from the Coffee estates in the interior; of these not a few take up their residence about Putlam or other villages, being employed as carters, placed in charge of young cocoanut plantations, &c.

There is still one race to be mentioned, many of the customs prevalent among which are singular and worthy of attention; I refer to the Mookwas. These people are Christian Tamuls, and are found, I believe, solely along the coast and to the north

of Chilaw. They intermarry with each other and with Tamul Christians, but keep a good deal apart from the other inhabitants. In general appearance they somewhat resemble Moormen. At one time they formed a very influential body and possessed large tracts of land; but being almost without exception addicted to drinking, they have now sunk very much in the social scale. The Mookwa headmen are termed Rajawannia, and Koomahrewannia respectively, and by an ancient custom these titles ought to be descend, not from father to son, but from uncle to nephew. To describe the origin of this strange practice would occupy more time than can at present be afforded, I therefore omit it.

I have thus endeavoured to give a description of this District. There is nothing of particular interest, but the recording of such statistics is often useful at a future period, which must plead my apology for laying so dry a paper before the Society.

Rock Inscription at Gooroo Godde Wihare in the Magool Korle, Seven Korles. By A. O. BRODIE, ESQ.

ON a late official tour through my District and through a part of Seven Korles, in company with the Government Agent of this Province, we visited the Vihare of Gooroo Godde at Giri Bawe in Magool Korle, about twenty-five miles south of Anooradhapoor. This is one of the so-called rock temples, which are abundantly scattered over the country. The dwelling for the priests is as usual considerably elevated, being built on a projecting knoll, and is in the form of a square enclosing a small open and sunken court, in which on each successive morning the village women stand, while one of the priests, concealed behind a curtain, reads aloud portions of the sacred books. The temple itself is on a higher platform, and is formed by running up a wall at the front part of a wide shallow cave formed by a huge over-

hanging ledge of rock. The internal walls are ornamented in the customary manner with crude vividly coloured paintings, which pourtray the tortures to be endured in a future state of existence by the wicked. A few mutilated but very neatly carved Budhoos lying near the door way, and a half ruined Dahgoba, completely the resemblance between this and the hundred structures of a similar character to be met with here.

A flight of stairs rudely cut out of the solid rock leads to the summit of the peak, from whence one obtains an extensive view over a country flat and fertile in its general character, but diversified by numerous isolated granitic groups. On a precipitous face of rock opposite the banna maddooa, I found that a space about four feet square had been brought to a smooth surface and then covered with a long inscription, partly in Singhalese and partly in Pali. Not having time to copy the whole of this, the head priest obligingly caused it to be transcribed on an ola which he presented to me on the spot. This ola I placed at different times in the hands of two well informed natives, and having compared the translations made by them, beg to lay the perfected English version before the Society.

It will be observed that the inscription is simply a grant to the priests of this Vihare of certain villages and lands (so far as their produce is concerned) for the purpose of defraying the ordinary expenses of the establishment.

It is dated in the year Saka, 1701, which I believe corresponds to 1779 A.D., and is stated to have been issued in accordance with the wishes of the King, Kirti Sri Rajah Singha, who, according to the Maha Wanse, reigned from 1747 to 1781, a statement in so far according with the inscription. It is only necessary to add, that the arrangement of words and clauses has been only so far altered as to make the translation tolerably intelligible.

Translation of a Grant, engraven on a rock at Gooroogodde Wihare, in Magool Korle, Seven Korles.

“On this Thursday the 13th day after the full moon of the month Wehsak in the year of the glorious king Saka 1701.

“For the purpose of performing the rites and offerings in the Wihare Galle Wihare of Giribawe beyond Mee Oya in the Maha Meddhe Pattoo of Magool Korle.

“This being suggested by the Wanny Modliar of Giribawe and by Pilimatalawe Wejeyasoondere Rajakaroona Sehnahdipatti Raja Mantsee who performs the offices of Maha Dissawe of Putlam Mooneesseram Ahnewoolenden including the Seven Korles, and Maha Adigar, and by the Minister's son who performs the duties of Halloowewaddene Nileme (1) the son of the said Sehnahdipatti.

“This being suggested, the Supreme Lord of Lanka, Kirti Sri Raja Singha, who is endowed with every regal power and adorned with gems of virtue, celebrated for might in his own and foreign dominions, presiding like the God Sakra and conducting like Budha himself, having ascended the throne of the wealthy city Sukandanum hereby sacrifices to the Weiragalle Dagobah (Dagobawahanse) the pyramid at Weiragalle, on the east of this side of Gooroogodde Bawe, on the south from this side of Yantan Pallewallewatia Weigaragalle and Pempoorogalle, on the west from this side of the village Belliagame Weiregalle Lookahattigamme Bahwome, on the north from this side of the tank of Wadooresse and the stone post of the water reservoir of Giribawe, all the houses, trees, gardens high lands and low lands (2) situated within these four limits, to be possessed, as to all the produce thereof, by Dharma Raheeti Oonanse of Giribawe, his disciples and their successors from genera-

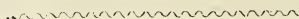
(1) The officer having charge of the King's wardrobe.

(2) “High lands and low lands,” i. e., paddy fields and chena land.

tion to generation on condition of performing the Buddhist sacrifices.

“May the kings, ministers, and other persons who come into this world hereafter, without disturbing or encroaching endeavour to obtain glory and nirwane by increasing the offerings more and more.

“Should any one dispossess (the priests) of grass, timber. flowers or fruit, he will be born a great Preta.” (3)



Catalogue of Ceylon Birds.—By E. F. KELAART, M.D. Edin.,
F.L.S., F.G.S., &c.; and EDGAR L. LAYARD, ESQ.,
C.M.E.S., &c.

ORDER. ACCIPITRES.

SUB-ORDER. ACCIPITRES DIURNI.

FAM: FALCONIDÆ.

a. AQUILINÆ.

<i>Aquila Bonelli</i> , <i>Temm.</i>	The Genoese Eagle.
<i>Aquila pennata</i> , <i>Gmel.</i>	The Pennated Eagle.
<i>Spizaetus Nipalensis</i> , <i>Blyth.</i>	The Beautiful Crested Eagle.
<i>Spizaetus limnaetus</i> , <i>Horsf.</i>	The Crested Eagle.
<i>Ictinaetus Malaiensis</i> , <i>Temm.</i>	The Black Eagle.
<i>Hæmatornis Cheela</i> , <i>Latham.</i>	The Cheela Eagle.
<i>Hæmatornis spilogaster</i> , <i>Blyth.</i>	The Ceylon Eagle.
<i>Pontoaetus leucogaster</i> , <i>Gmel.</i>	White-bellied Sea Eagle.
<i>Pontoaetus Icthyaetus.</i>	
<i>Haliastur Indus</i> , <i>Bodd.</i>	Shiva's Kite.

b. FALCONINÆ.

<i>Falco Peregrinus</i> , <i>Linn.</i>	The Peregrine Falcon.
<i>Tinnunculus alaudarius</i> , <i>Briss.</i>	The Kestrel Falcon.
<i>Hypotriorchis chicquera</i> , <i>Shaw.</i>	The rufous-headed Falcon.

c. MILVINÆ.

<i>Baza lophotes</i> , <i>Temm.</i>	The Cohy Falcon.
<i>Milvus Govinda</i> , <i>Sykes.</i>	The Cheela or Govinda Kite.
<i>Elanus melanopterus</i> , <i>Daud.</i>	The Black Winged Falcon.

(3) A wandering mischievous demon.

d. ACCIPITRINÆ.

<i>Astur trivirgatus</i> , <i>Temm.</i>	The three-streaked Kestrel.
<i>Accipiter badius</i> , <i>Gmel.</i>	Brown's Sparrow Hawk.
<i>Accipiter nisus</i> , <i>Linn.</i>	The Sparrow Hawk.

e. CIRCINÆ.

<i>Circus Swainsonii</i> , <i>A. Smith.</i>	The pale Harrier.
<i>Circus cinerascens</i> , <i>Montague.</i>	The ashy Falcon.
<i>Circus melanoleucos</i> , <i>Penn.</i>	The black and white Falcon.

SUB-ORDER. ACCIPITRES NOCTURNI.

FAM: STRIGIDÆ.

a. SURNINÆ.

<i>Athene castanotus</i> , <i>Blyth.</i>	The Ceylon chesnut-winged Owl.
<i>Athene scutellata</i> , <i>Gray.</i>	The hairy Owl.

b. BUBONINÆ.

<i>Ephialtes Scops</i> , <i>Linn.</i>	The scops-eared Owl.
<i>Ephialtes sunia</i> , <i>Hodgson.</i>	The reddish Owl.
<i>Ephialtes lempigii</i> , <i>Horsf.</i>	The lempigi Owl.
<i>Ketupa Ceylonensis</i> , <i>Gmel.</i>	The Ceylon eared Owl.

c. SYRNINÆ.

<i>Syrnium Indrani</i> , <i>Gray.</i>	The Oulama Owl.
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d. STRIGINÆ.

<i>Strix Javanica</i> , <i>Gmel.</i>	The Indian Barn Owl.
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ORDER PASSERES.

SUB-ORDER I. FISSIROSTRES.

A. F. NOCTURNI.

FAM: CAPRIMULGIDÆ.

a. STEATORNINÆ.

<i>Batrachostomus moniliger</i> , <i>Layard.</i>	Ceylon Oil Bird.
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b. CAPRIMULGINÆ.

<i>Caprimulgus Maharattensis</i> , <i>Sykes.</i>	The Maharatta Goatsucker.
<i>Caprimulgus Kelaarti</i> , <i>Blyth.</i>	The Newera-Ellia Goatsucker.
<i>Caprimulgus Asiaticus</i> , <i>Latham.</i>	The Indian Goatsucker.

B. F. DIURNI.

FAM: HIRUNDINIDÆ.

a. CYPSELINÆ.

<i>Cypselus Balasiensis</i> , <i>Gray</i> .	The common Palm Swift.
<i>Cypselus melba</i> , <i>Linn</i> .	The common large Swift.
<i>Cypselus affinis</i> , <i>Gray</i> .	The blackish Swift.
<i>Macropteryx coronatus</i> , <i>Tickell</i> .	The crested Swift.
<i>Collocalia brevirostris</i> , <i>McClelland</i> .	The edible-nest Swallow.
<i>Acanthylis caudacuta</i> , <i>Lath</i> .	The spiny-tailed Swallow.

b. HIRUNDININÆ.

<i>Hirundo gutturalis</i> , <i>Scop</i> .	The common Indian Swallow.
<i>Hirundo hyperythra</i> , <i>Layard</i> .	The red-bellied Swallow.
<i>Hirundo domicola</i> , <i>Jerdon</i> .	The Bungalow Swallow.
<i>Hirundo daurica</i> , <i>Linn</i> .	

FAM: CORACIADÆ.

a. CORACIANÆ.

<i>Coracias Indica</i> , <i>Linn</i> .	The Indian Roller.
<i>Eurystomus orientalis</i> , <i>Linn</i> .	

FAM: TROGONIDÆ.

<i>Harpactes fasciatus</i> , <i>Lath</i> .?	The fasciated Trogon.
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FAM: ALCEDONIDÆ.

a. HALCYONINÆ.

<i>Halcyon Capensis</i> , <i>Linn</i> .	The Cape King-fisher.
<i>Halcyon Smyrnensis</i> , <i>Linn</i> .	The Smyrna King-fisher.
<i>Halcyon atricapillus</i> , <i>Lath</i> .	
<i>Ceyx tridactyla</i> , <i>Linn</i> .	The pretty dwarf King-fisher.

b. ALCEDONINÆ.

<i>Alcedo Bengalensis</i> , <i>Gmel</i> .	The Indian King-fisher.
<i>Ceryle rudis</i> , <i>Linn</i> .	The black and white King-fisher.

FAM: MEROPIDÆ.

a. MEROPINÆ.

<i>Merops Philippinus</i> , <i>Linn</i> .	The Philippine Bee Eater.
<i>Merops viridis</i> , <i>Linn</i> .	The Indian Bee Eater.
<i>Merops quinticolor</i> , <i>Keill</i> .	The five-coloured Bee Eater.

New Publications.

SIDATH SANGARAWA, a Grammar of the Singhalese Language, translated into English, with Introduction, Notes, and Appendices. By **JAMES DE ALWIS**, Member of the Ceylon Branch of the Royal Asiatic Society. Colombo, 1852. Price 12s.

PRODROMUS FAUNÆ ZEYLANICÆ, being contributions to the Zoology of Ceylon. By **E. F. KEELAART**, M. D., Edin., F. L. S., F. G. S., Staff Surgeon to the Forces. Ceylon, 1852. 8vo., cloth; price 10s. 6d.

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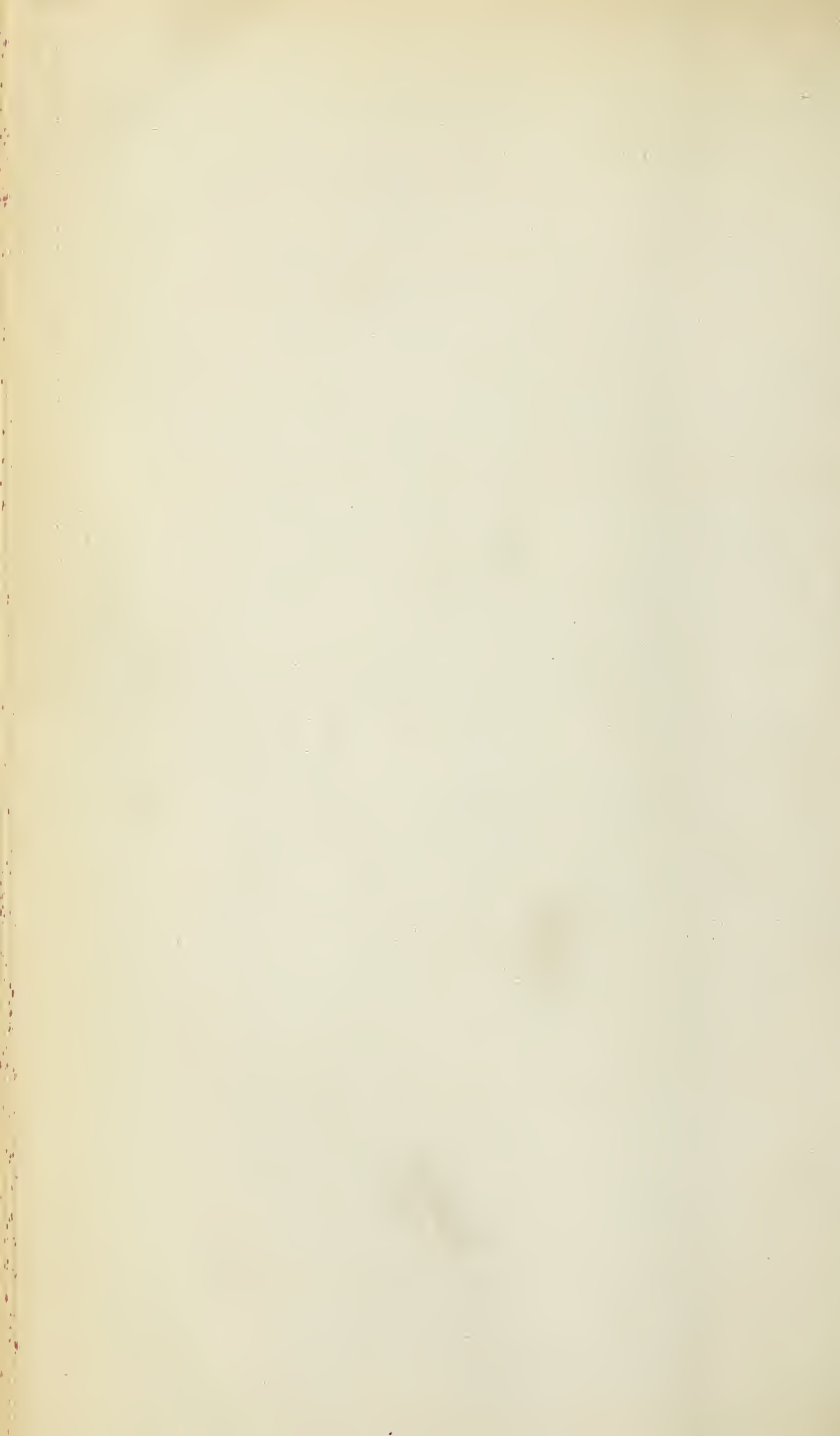
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CONTENTS.

	PAGE.
Buddhism : Chariyá Piṭaka.—By the Rev. D. J. GÖGERLY...	5
The Laws of the Buddhist Priesthood.—By the Rev. D. J. GÖGERLY 	17
Statistical Account of the District of Chilaw and Puttaḷam, North-Western Province.—By A. O. BRODIE, Esq. ...	32
Rock Inscription at Gurugoḍa Vihāre, in the Magul-kóralé, Seven Kóralés.—By A. O. BRODIE, Esq. 	59
Catalogue of Ceylon Birds.—By E. F. KELAART, M.D., Edin., F.L.S., F.G.S., &c., and EDGAR L. LAYARD, Esq., C.M.E.S., &c. 	65

ROYAL ASIATIC SOCIETY.

CEYLON BRANCH.

BUDDHISM:— *CHARIYÁ PITAKA.*

BY THE REV D. J. GOGERLY.

[THE discourses of Buddha are contained in five large divisions called in Páli "Nikáyo," and in Sinhalese "Sangi:" the fifth of these, called "Kudugot Sangi," comprises 15 books, one of which is the Chariyá Pitaka, or a collection of preceding states of existence. The book is composed in Páli verse, and the legends it contains are brief accounts of events more largely developed in the book called Játaka, which latter book is also contained in the Kudugot Sangi. The tales in this small volume have all a reference to the desire supposed to have been felt by Gautama, in previous states of existence, to become a Buddha, and some of the means he used to accomplish his object. These means are divided into ten sections called Páramitá, and each of these, being subdivided into three other sections, makes the whole number thirty. Only a part of these means are contained in this work. The portion now presented to the Society contains the Páramitá of Almsgiving; the remainder will be given on a future occasion, with such observations as may be necessary for its elucidation. The book is also called Buddhapadána, or sections of Buddha's previous existences.]

THE whole of my proceedings during four asankhya and one hundred thousand kalpas has been for the purpose of becoming a Buddha.

Omitting my conduct in various births during past kalpas, I will declare my proceedings during the present kalpa: listen to me!

At one time I was a hermit named Akitti, and having entered a large forest, a wilderness without inhabitants, I dwelt there.

The king of the gods (Sakra) being moved by the effulgence of my austerities, assuming the form of a mendicant Brahmin, approached me to obtain food.

Seeing him standing at the door of my residence, I put into his dish the greens I had brought from the forest, which were unmixed with oil or salt.

Giving him these, I entered my pansala, and without seeking for other food I placed my bowl in an inverted position.

A second and a third time he came, and I thrice gave him (what I had collected) with an unshaken and imperturbed mind.

My body was not emaciated in consequence of that (abstinence from food), but I spent the time in mental enjoyment.

Had I met with one worthy of receiving alms throughout a whole month, or two months, I would have given these eminent alms with an unshaken and imperturbed mind.

I did not give these alms hoping to receive thereby honor or profit, but I performed the actions hoping to become thereby a Buddha.

End of Akitti Tápasa.

Afterwards I was a Brahmin named Sankha, and, intending to pass over the ocean, I went to the port.

I there saw one who had subjected his passions coming on the high road from the desert, walking on the hard and parched ground.

Seeing him coming on the road I thus thought :

‘ Here is a field for obtaining merit by any person desirous of virtue.

‘ The husbandman at a suitable season perceives a field, but if he neglect to sow it with seed, he obtains no profit from it.

‘ So I, being desirous of merit, perceive a field for its attainment, of pre-eminent excellence : if I do not perform an act of kindness I shall derive no merit therefrom.

‘As the Minister, desirous of being steward of the royal household, will lose his office if he neglect to supply the necessary provisions and wealth :

‘So I, desirous of being eminently meritorious, shall be deprived of merit, if, seeing this holy man, I do not present him with offerings.’

Thus thinking, I took off my sandals, and worshipping his feet, I presented him with my sandals and umbrella.

Thus I gave him alms, received thereby happiness a hundred-fold, and continued to fill up the measure of my liberality.

End of the Brahmin Sankha.

Afterwards I was Dananjaya, king of the great city of Indapatta, exercising the ten regal virtues.

Some Brahmins came to me from Kálinga, and requested me to give them my noble, valuable, state elephant.

They said, “We have no rain in our country and there is a great famine ; give us your noble elephant, which is as a dark mountain of antimony.”

When supplicants approached me it was not becoming that I should reject their request, and break my rule of liberality. I therefore gave them my large elephant.

Taking the elephant by the trunk, and from a golden vessel pouring water on the hands of the Brahmins, I gave the elephant.

When I thus gave the elephant my councillors enquired, “Why do you give your noble elephant to beggars ?

“If you give your valuable state elephant, able to ensure victory in war, what will you do with your kingdom ? ”

(I replied) “I would even give my kingdom : I would give my own body: my desire is to become Buddha, and on that account I give the elephant alms.”

End of Dananjaya.

At one time I was the powerful universal emperor, lord of the earth, named Sudassano, residing in the city named Kusawatti.

I caused proclamation to be made there thrice a day in various places : ‘ Who wishes for any thing? Who desires any thing? That property shall be given him.’

‘ Who is hungry? Who is thirsty? Who requires garlands, cosmetics, or various coloured garments to cover his nakedness?’

‘ Who requires bowls or umbrellas, or beautiful soft slippers? I will give them.’ Thus, evening and morning, I caused proclamation to be made in various places.

I had storehouses in many hundred places, and gave to applicants whether they came by day or by night.

Whatever they wished for they obtained, and went away with their hands full. Thus, during the whole of my life, I continued to give eminent alms.

I did not give things to which I had an aversion, or things which I had not stored up, but I gave as a sick man to obtain a cure. I did not for base purposes give alms to supplicants, but with a pure and sincere desire to become Buddha.

End of Sudassano.

At another time I was the Brahmin Góvinda, the spiritual guide of seven monarchs, honored by sovereigns.

Whatever I received from those seven monarchs I gave in alms, as from an inexhaustible ocean.

I did not give things to which I had an aversion, or things which I lightly prized; but I gave valuable gifts with a desire to become Buddha.

End of Góvinda.

Afterwards I was Nimi, the learned and virtuous king of the famed city Mithilá.

There I caused storehouses to be erected at the four cardinal

points, and continued to give alms to beasts, birds, men and women.

I continued without intermission to give valuable alms, as garments, couches, meat, drink, and condiments.

As the servant who attends on his master for gain endeavours by thought, word, and deed, to gain the good will of his employer :

So in every birth I endeavoured to supply food and alms to persons, being desirous of becoming a Buddha.

End of Nimi.

Afterwards I was prince Chanda, son of the king of Puppiwatti.

Being delivered from death, and with fear escaping from the sacrificial enclosure, I gave alms largely.

I ate not, I drank not, I took no refreshment, even if it were for five or six days, unless I had given alms to some holy man.

Like as a merchant who, having collected his goods, takes them to the place where he can obtain large profits :

Thus the giving to others of your meal is highly advantageous. To give to others therefore is proper : it will produce a hundred fold.

Knowing this, I gave alms from birth to birth. I continued without intermission to give alms, that I might become a Buddha.

End of Chanda Kumára.

I was Sivi, king of the city of Ariṭṭha ; and sitting in my magnificent palace I thus thought :

There is no kind of alms among men which I have not given ; if any one should even beg from me my eyes, I would give them without hesitation.

Sakra, the sovereign of the gods, knew my thoughts, and sitting amidst his attendant gods, he thus spoke :

“The King Sivi, possessing super-human power, sitting in his magnificent palace, and meditating on the various kinds of alms, does not perceive one that he has not given.

“I will ascertain what his thoughts are ; wait here a moment until I know his mind.”

Having assumed the form of a trembling, hoary-headed, wrinkled, decayed, and emaciated blind man, he approached the king.

He having assumed this form, elevating his left and his right arms, with clasped hands raised to his head, he spake these words :

“Great and just sovereign, the author of your kingdom’s prosperity, the fame of your almsgiving has ascended up to gods and men ; I have a petition.

“I am become blind of both eyes : give me one of your eyes, and retain the other for your own use.”

When I had heard these words, with a mind excited by joyful emotions, I thus addressed the trembling supplicant :

“Thou who hast come soliciting the gift of an eye hast come knowing my thoughts while I was in the palace.

“My desires are accomplished, my wish is fulfilled, I shall this day give a supplicant such alms as I never gave before.

“Come here, Sívaka: arise, be not unskilful, be not negligent: pluck out both my eyes and give to the beggar.”

My obedient slave Sívaka being thus addressed, plucked out my eyes like the kernels of a palm tree, and gave them to the beggar.

In purposing to give, in giving, and after having given the alms, I had no other design than that of becoming a Buddha.

Not that I had an aversion to my two eyes : my body was not disagreeable to me: but my desire was to become a Buddha, and therefore I gave my eyes.

End of the story of King Sivi.

My mother Pusati, the daughter of a king, was in a previous birth the queen of Sakra.

He, the king of the gods, seeing that the term of her life had ended, said : “ I will give you ten gifts. What ten gifts, my friend, do you desire ? ”

The goddess hearing these words, replied to Sakra : “ What fault have I been guilty of ? Have I become displeasing to you ? Why do you drive me from my lovely residence, as with an earth-shaking wind ? ”

When she had thus spoken, Sakra replied : “ You have been guilty of no crime, neither are you displeasing to me.

“ It is only this, the term of your existence here draws to a close. Accept therefore the ten excellent gifts I offer you.”

Pusati then accepted with joyfulness the ten gifts, including me, presented by Sakra.

Pusati, ceasing to exist there, was born of a regal family, and became united to king Sanjaya, of the city of Jétuttaram.

When I was conceived in the womb of my beloved mother, by my glory she became constantly attached to almsgiving.

Freely she gave to the poor, to the sick, to the old, to mendicants, to travellers, to men and women, to Samanas, to Brahmins, to those of subdued passions.

Pusati, having carried me in her womb ten months, passing through the city, brought me forth in the midst of the Wessa street.

I did not receive the name either of my father or my mother, but having been born in the Wessa street, I was called Wessantara.

When I was a child eight years of age, I sat in my palace and thought of giving alms.

I thought, ‘ Should any one request from me my heart, my eyes, my flesh, my blood, or my body, I will give them to him.’

When I had formed this firm resolution, the solid earth, mount Méru, and the trees of the forest were shaken.

In half a month, on the Upósatha of the full 15th day of the moon, I mounted my elephant Paṇḍara, and went forth to give alms.

Brahmins from Kálinga came to me and requested me to give them Paṇḍara, my valuable state elephant.

They said: "From want of rain there is a great famine in our land; give us your large elephant, your excellent elephant altogether white."

I thought, 'My mind delights in almsgiving; with an unshaken determination I will give what these Brahmins ask, I will hide nothing.'

When these supplicants approached me, it not being proper that I should repulse them, or break my determination to bestow alms, I gave them my large elephant.

Taking the elephant by the trunk, I poured water from a golden chalice upon the hands of the Brahmins, and gave them the elephant.

When I had thus given the excellent and perfectly white elephant, the earth, mount Méru, and the trees of the forest shook.

The inhabitants of Siwi being displeased at my giving the elephant, assembled together and banished me from their land, saying, "Go to the Wanka mountain."

Being thus driven away by them, I still remained firm and unshaken, and begged permission to be allowed once more to give alms.

The inhabitants of Siwi granted my one request, and I accordingly published my intention by beat of drum, and gave excellent alms.

Although the fear-inspiring sound ascended that I was banished on account of excessive almsgiving, still I gave alms.

Having bestowed the chief gifts, as elephants, horses, chariots, male and female slaves, oxen and wealth, I departed from the city.

Having departed from the city, when I turned round to look at it, the earth, mount Méru, and the trees of the forest shook.

Arriving at the junction of the four great roads, I gave away the carriage in which we four persons came, and taking Maddidéwi aside, I privately said to her :

“Maddi, do you take Kaṇhajānā, she is the younger and light ; I will carry Jāli, her brother, who is older and heavy.”

Then Maddi took Kaṇhajānā, who was like the flower of the lotus, and I took the royal child Jāli, who was like a heap of gold.

Thus we four high-born and delicate princes, travelling through difficult paths, proceeded towards the mountain Waṇka.

When we met any person, or any one overtook us, we enquired, “Which is the road to the mountain Waṇka ?”

They, beholding us with compassion, said “You have much suffering to endure : distant is the mountain Waṇka.”

When in the forest the children saw a tree laden with fruits, they cried to obtain some.

The lofty and wide-spreading tree, perceiving the weeping children, of itself bowed down its branches for the children to approach.

The exquisitely beautiful Maddi, seeing this wonderful and miraculous event, thus joyfully expressed her admiration :

“Assuredly this is the most wonderful event ever seen in the world : by the splendid virtue of Wessantara the tree of itself bows down.”

The Yakkha, out of compassion to the children, shortened the path, so that the day after our departure we arrived at the country called Chétiya.

Here 60,000 princes resided, our maternal uncles, who with clasped hands on their foreheads met us weeping.

Here remaining, we conversed with the inhabitants of Chétiya and with their families, and departing thence we arrived at the mountain Waṇka.

The king of the gods (Sakra) called the powerful Wissakamma (the architect of the gods) and said, "Erect a well-built dwelling, a commodious and pleasant pansala."

The powerful Wissakamma, obeying the commands of Sakra, erected a well-built dwelling, a commodious and pleasant pansala.

We four persons having arrived at the quiet and peaceful forest, dwelt there by the mountain.

I, Maddi Déwi, and the two children Jáli and Kaṇhajiná, consoling each other, lived in that residence.

As the children did not go out, I was not alone in the dwelling. Maddi brought herbs from the forest and supported us.

While I resided in the forest a beggar came to me and requested me to give him my two children Jáli and Kaṇhajiná.

When I saw the beggar approach my heart rejoiced, and taking my two children I gave them to the Brahmin.

When I gave my own children to the Brahmin Jútaka, then the earth, mount Méru, and the trees of the forest shook.

Again, the god Sakra descended and, assuming the form of a Brahmin, requested from me my chaste and virtuous wife, Maddi Dewi.

Taking Maddi by the hand and filling the Brahman's hand with water, with a cheerful mind I gave Maddi to him.

When I gave Maddi, the gods of the sky rejoiced, the earth also, mount Méru, and the trees of the forest shook.

When I gave my children Jáli and Kaṇhajiná, and also my chaste wife Maddi, I thought of nothing else but of becoming a Buddha.

Not that my two children or Maddi Déwi were disagreeable to me, but, desiring to become Buddha, I gave that which was dear to me.

Afterwards, when my father and mother came to the great forest sorrowfully and with tears enquiring after my will, with

modesty and reverence I approached them : then also the earth, mount Méru, and the trees of the forest shook.

Then departing with my relations from the great forest, I entered the delightful city of Jetuttara, that chief of cities.

Then the seven kinds of jewels were rained from heaven and the clouds poured down water : the earth also, Maha Méru, and the trees of the forest shook.

The insensible earth, unconscious of joy or sorrow, was thus seven times shaken by the power of my almsgiving.

End of Wessantara.

At another time I was a hare, a walker in the forest, eating grass, leaves, branches and fruits, injurious to none.

A monkey, a jackal, a water hen, and I were associates, meeting together morning and evening.

I instructed them in good works, saying “ Depart from degrading vice, and perform that which is good.”

On the Upósatha day, seeing the full moon, I said :

“ To-day is the Upósatha day. Prepare alms and give to worthy persons : having given alms, spend the day in tranquillity. ”

They, approving my advice, prepared alms according to their ability, and sought a person worthy of receiving them.

Sitting down I thought :

‘ It is proper to give alms to holy men. Should I meet such an one, what have I to give him ? ’

‘ I have no sesamum, grain, maize, rice, nor ghee. I live on grass, and grass I cannot give. ’

‘ Should any holy man come to me seeking food, he shall not go away empty : I will give him my own body. ’

Sakra, knowing my thoughts, assumed the form of a Brahmin seeking alms, and came to the place where I was sitting. When I saw him, I rejoiced and said :

“It is a happy circumstance that you have come to me for food.”

“I shall to-day give that in alms to you which I never gave before.

“You are a holy man and therefore should not injure others. Come, collect some sticks and kindle a fire; I will cook myself, and thou shalt eat that which is cooked.”

He replied, “It is good!” and cheerfully collecting wood, he raised a great heap, and reduced it to a bed of burning charcoal.

When the great heap was shining with heat, I leaped up and fell into the midst of the flame.

Thus, as any one entering into cold water rejoices when the burning heat of his body is assuaged:

So I, entering into the blazing fire, felt my whole body at ease, as though I had leaped into cold water.

I thus gave my whole body to the Brahmin; my skin, my flesh, my tendons, my bones, my heart, to the Brahmin.

End of the tale of the Hare.

THE LAWS OF THE BUDDHIST PRIESTHOOD.

BY THE REV D. J. GOGERLY.

[IN the first paper concerning Buddhism, which I had the honor of reading before this Society, in May, 1845, it is stated that the sacred writings of the Buddhists are divided into three great sections, called the Winaya, the Sūtra, and the Abhidharma Pitakas; the two latter elucidating the doctrines of Gautama, and the first one containing the laws and regulations for the government of the Priests, together with occasional doctrinal discourses. The books on discipline, forming the Winaya Piṭaka, are five: the first and second containing the criminal code, the third and fourth the ecclesiastical and civil code, and the fifth is a recapitulation of the whole in a kind of catechetical form.

My present object is to give a translation of the precepts contained in the ecclesiastical code, in the order in which they are recorded, together with so much of the text as may be necessary to explain the connection between the precepts.

The two books containing the ecclesiastical code are named Mahā Waggo and Chūla Waggo; the former one will occupy our attention first.

In the paper read in May, 1845, the beginning of the Mahā Waggo is translated, and the account is brought up to the time when Gautama converted the five associated ascetics who had been his companions during the six years he spent in austere penances, hoping thereby to attain to the dignity of a supreme Buddha. We resume the subject at this period.]

The five ascetics having received Gautama as their teacher, and perceiving the correctness of his doctrine, requested to be admitted priests under his government, both as respected doctrine and discipline. He acceded to their request, saying:

“Approach, Bhikkhus! Clearly is the doctrine declared! Walk in the path of purity, by which all sorrow may be terminated.”

In his first discourse, Buddha had taught his disciples that existence and suffering are inseparably connected:—that the

perpetuation of existence results from either a continued desire to live after death, or from a desire to terminate upon death the existence of a living entity or soul:—that the only means by which a termination both of sorrow and existence may be secured is to be entirely free from all desire to existing objects, and to existence itself: and that this freedom from desire can only be attained by a life of unspotted purity.

But now that they have received him as their teacher, he further instructs them that there is no existing thing with which they can identify themselves, or say “This is I: this constitutes my soul.” He speaks of the body, of the perceptions, sensations, and reasonings, and also of the consciousness; and of each severally he says: “The wise and learned disciple will by his wisdom perceive these are not mine; they do not constitute me; these are not to me a soul.” This doctrine is fully developed in other discourses, in which he denies the existence of a living entity called a soul: life, with all its emotions, are merely sequences; they have thus continued by an uninterrupted series, the commencement of which cannot be traced up to the present moment; they are never for two consecutive moments the same, but form one perpetual system of mutation. He concludes his discourse by saying, that the wise and learned disciple, by perceiving these truths, ceases to have satisfaction either in things corporeal or mental: being no longer satisfied with them, he ceases to be attached to them; ceasing to be attached to them, he becomes free; being free, he obtains the knowledge that he is freed (from all attachments); his births become terminated; his path of purity is perfected; his necessary work is completed; and he knows, that for the accomplishment of that object (freedom from future existence) nothing more remains to be done. Upon hearing this discourse, the five priests were greatly edified, and their minds became so liberated from desire, that it never again was experienced by them.

This freedom from desire (and the perfect purity necessarily

connected with it) constitutes the state of a Rahat. Supernatural wisdom and super-human power result from these : but he who receives the doctrine of Buddha, and is thus free, is a Rahat. "There were now," says the author, "six Rahats in the world."

The next accession to the priesthood was from the family of a wealthy nobleman of Benares. His son Yaso became disgusted with the sensualities with which he was surrounded, and, filled with uneasy emotions, he left his house at night and repaired to Buddha at Isipatana, a retreat near the city. Buddha calmed his mind with his conversation, and the young nobleman was convinced of the truth of his doctrine. The mother of Yaso, missing her son, alarmed her husband, who, sending out mounted servants to seek him in every direction, repaired himself to Isipatana, where he also became converted to the faith of Gautama, and consented to the desire of his son to become a priest. The whole family followed the example of the nobleman, and embraced the new religion.

There were four young men of noble birth, the friends of Yaso, living in Benares. They, hearing that Yaso had forsaken secular life, shaved his head and beard, put on the yellow robe, and become a priest of Buddha, were induced to follow his example. Fifty young men also, who were the friends of Yaso in the provinces, were persuaded by him to become his companions; and as they all became Rahats, the Buddhist community consisted of 61 priests, all of whom had attained the perfection of virtue.

Buddha then called his priests together and directed them to travel into the provinces, to disseminate his doctrines, that from a feeling of compassion they might promote the profit and happiness of gods and men. He added "Go singly, priests, not two to one place, and preach this doctrine which is excellent in its commencement, excellent in its continuance, and excellent in its termination, which is replete with instruction and clearly expressed : thus make known the perfect and pure path of the

priesthood." He at the same time expressed his own intention of going to a village near Uruwélá, to preach his doctrines.

The priests, in obedience to the directions they had received, travelled into the provinces, and made many converts.

Of these, several desired admission into the priesthood, and as Gautama had hitherto reserved to himself the right of admitting candidates, they brought the applicants to Buddha that they might be admitted to the priesthood, and obtain Upasampadá.

The first of these, "Pabbajjá," is the retiring from secular life for religious purposes, and applies to the whole body, whether novices or ordained priests. The latter, "Upasampadá," is the state of full admission to the priesthood, being derived from the verb "upasampajjati," *to attain*.

Buddha, perceiving that this mode of proceeding was fatiguing both to the priests and to the candidates, determined to confer upon the priests the right of admitting candidates into the priesthood. For this purpose he called them together, and delivered the first of his precepts respecting Ordination. These are in the form of permission, commencing with "Anujānāmi" — "I permit."

Having assembled the priests, he said : —

"1. I now allow you, priests, to ordain to the priesthood and admit to Upasampadá, in any part of the provinces in which you may be. And in this manner, priests, shall ye make priests, and admit to Upasampadá. First, having caused the head and beard to be shaven and a yellow garment to be put on, make (the candidate) remove his upper garment from one shoulder, worship the feet of priests, and [*lit.*, sit on his heels] kneel down. Let him then lift up his joined hands, and say. I take refuge* in Buddha, I take refuge in Dhamma (his doctrine), I take refuge in the Sangha (the priesthood). A second time I

* Or, "I go for aid : " සරණංගමනං.

take refuge in Buddha, I take refuge in Dhamma, I take refuge in the Sangha. A third time I take refuge in Buddha, I take refuge in Dhamma, I take refuge in the Sangha. I permit, priests, admission to the priesthood and to Upasampadá by this thrice taking refuge."

Buddha, having exhorted the new priests to seek by meditation and effort the deliverance he had himself obtained, left Benáres and went to Uruwélá. During his journey he converted 50 young men who were friends, and admitted them to the priesthood; and some time after his arrival in Uruwélá, he succeeded, after performing many miracles, in converting 1000 Jaṭilas, or ascetics with clotted hair, who were worshippers of Agni, the god of fire. These being men of renown, their conversion produced a great impression.

He left Uruwélá accompanied by the 1000 Jaṭilas whom he had ordained priests, and, going first to Gáyasisan, at length arrived at Rájagaha, the metropolis of Magadha, and resided in a Chétiya (or sacred grove) near the city.

The king of Magadha, Sényo Bimbisáro, having heard of his eminence as a teacher, went to the place where Buddha was; his (the king's) retinue consisting of 120,000 Brahmins and householders. Buddha preached to this multitude, who were all, together with the Sovereign, converted to the new religion, and entered the first of the paths leading to Nirwána.

After the discourse was ended the king observed, that when he was a youth he had desired five things, and they were then accomplished. "The first," said he, "was that I might be an anointed king: this has been accomplished. The second was, May a Rahat, a supreme Buddha, appear in my dominions: this also has been accomplished. The other wishes were, May I visit that Buddha! May I hear him preach! May I understand his doctrine! The whole of these are now fulfilled. Will Bhagawá, with the priests, take their meal to-morrow at my residence." Buddha having by his silence intimated

his acceptance of the invitation, the king departed and had the necessary preparations made; and on the morrow Buddha went to the palace accompanied by the priests. The king, having with his own hand supplied him with food, continued standing until the meal was ended, when he sat down a short distance from Buddha. While thus seated, he thought: 'Where can a residence be provided for Bhagawá out of the city, but at such a distance as will be convenient for those who desire to resort to him for instruction: a retired place, free from noise and removed from the commotions and unpleasantness of the population at night?' He then selected the royal garden at Wéluwana, and determined to present it to Buddha and his priests. He accordingly took a golden vessel, and pouring water on the hands of Buddha said: "Lord, I present the garden of Wéluwana to Buddha and the priests; accept, Lord, the garden."

Upon returning from the city, Buddha convened the priests and enacted the following:

2. "I permit, priests, (the acceptance of) a garden."

The árámo or garden is an enclosure of indefinite size, with the buildings erected within it. This at Wéluwana must have been a park of considerable extent, as it was to accommodate several thousand priests. But, although by this precept permission is given to the priesthood to possess residences and the ground or (compound) in which they are situated, yet it cannot justify the holding of fields and other grounds for cultivation.

Following the relation of these circumstances, the conversion of Sáriputto and Moggalláno, who were afterwards the chief priests of Buddha, is recorded.

At that time, a Paribbájako, named Sañjayo, resided in Rájagaha attended by 250 eminent disciples, among whom were Sáriputto and Moggalláno. They were intimate friends, and had engaged that whatever excellence in doctrine the one should

ascertain, he should communicate it to the other. The priest Assaji in the morning entered Rájagaha with his bowl to collect alms. Sáriputto saw him and was struck with the sanctity of his appearance, and concluded that he must be a man of eminent piety. Determining to ascertain to what sect he belonged, who was his preceptor, and what doctrines he held, he followed him when he left the city, and entering into conversation said: "Friend, your appearance is pleasing, your aspect placid, and your complexion clear. Under whose direction are you a priest? Who is your preceptor? And what doctrines do you hold? The priest replied: "The Mahá Samana of the Sákya race has become a priest, and I am under his direction. Bhagawá is my preceptor; and I hold the doctrines taught by him." Sáriputto further enquired: "What doctrines does that preceptor teach? What does he declare?" Assaji replied: "Friend, I have only recently become a priest, and am not able fully to declare his doctrine, but I will give you a brief account of it." "Friend," said Sáriputto, "be it little or be it much, declare it. Speak that which is important, and I shall understand it; speak explicitly." Assaji then spake the following stanza:—

යෙධම්මො හෙතුසහවා තෙසං හෙතුං තවාගතො
ආත තෙසම් යො නිරුථො වංසාදි මහාසමණො.

'Whatever things result from causation, those things and their causes are declared by the Tatagato; and whatever of them may become extinct, that also the Mahá Samana makes known.'

Sáriputto at once saw that this was the doctrine he had been endeavouring to ascertain. His mind became illuminated, and perceiving that whatever is produced must also cease to be, he entered the first of the paths leading to Nirwána. Meeting Moggalláno, he related the circumstance, who proposed to join Buddha at once. They however determined first to converse with their associates; and these agreed to accompany them.

They advised their chief, Sañjaya, to take the same step; but he declined, and afterwards died of vexation. When Buddha saw them and their associates approaching, he said: "The two friends Kolita (Moggallāno) and Upatissa (Sáriputto) are coming. These will be my two chief disciples." (Both of them were Brahmins of eminence and were natives of Rájagaha.)

Sáriputto and Moggallāno then approached Bhagawá, and bowing their heads down to his feet, they said: "Receive us, Lord, as priests under the direction of Bhagawá, and allow us to obtain Upasampadá." Buddha replied: "Approach, priests: clearly declared is the doctrine; walk in the pure path for the entire extinction of sorrow." By these words they received Upasampadá.

At that time spiritual superiors (උපාසකෝ upajjhá) and preceptors (ආචාර්යෝ áchariyá) had not been appointed; in consequence of which many of the priests, being uninstructed, were slovenly in their dress, solicited alms in an improper manner, and were noisy and loud in their conversation. The populace were displeased at this, and loudly expressed their disapprobation. The modest and grave priests expressed their disapprobation of such conduct, and reported the circumstances to Buddha, who convened an assembly of the priests, censured the offenders, and gave the following precept:—

3. "Priests, I permit (or direct) that there shall be spiritual superiors."

He then details the relative duties of the superior (upajjháyo උපාසකෝ) and his co-resident priest (saddhiwiháriko සඤ්චිකාරිකෝ). The superior is to regard his co-resident as his son, and the co-resident shall regard his superior as a father, and they are mutually to respect and honor each other. No priest can intrude himself upon another as his spiritual father or superior, but must be solicited to undertake the office by the priest wishing to become his co-resident. The applicant must

come to the priest, remove his robe from one shoulder, worship the feet of the priest (*i. e.*, bow down to the ground before him), and then, kneeling down, shall say, with joined and uplifted hands, "Lord, become my spiritual father" (or "my upajjhāyo.") If the priest applied to in any way indicates his assent, the connection is formed. The co-resident is carefully to perform his duty to his superior, which comprises all the duties of a personal attendant. He is to rise early in the morning, and respectfully to approach his superior, bringing water for him to wash, and supplying him with refreshment, if he require it; he is to arrange his couch, sweep out his apartment, assist him to dress, and, if required, accompany him when he goes out, walking respectfully behind him. The superior is to advise and instruct his co-resident, and perform to him all the duties of a parent, both in sickness and in health. The relative duties are laid down in detail by Buddha.

Some of the co-resident priests refused to perform their duty to their upajjhāyo. This being reported to Buddha, he decreed:—

4. "It is not proper, priests, that a co-resident should not perform his duty to his upajjhāyo. He who does not perform his duty is guilty of *Dukkaṭa*" (*i. e.*, an offence requiring confession and absolution.)

They still remained disobedient, which being related to Buddha, he decreed:—

5. "I permit, priests, that the disobedient shall be suspended (from his position as co-resident). And thus shall he be placed under discipline:—The superior may declare by words or intimate by signs, 'I suspend you:' or he may say, 'Return not to this place:' or 'Take away your bowl and robes:' or, 'I have no need of your services.' Should any of these forms be used, the co-resident is suspended, but not otherwise."

A co-resident priest thus suspended did not seek recon-

ciliation. But Buddha decreed :—

6. “ I direct, priests, that those who are suspended shall not be without seeking forgiveness. He who does not seek forgiveness is guilty of Dukkata.”

Some upajjhāyo, upon forgiveness being solicited, refused to be reconciled. This was reported to Buddha, who decreed :—

7. “ I direct, priests, that forgiveness be granted.*

Notwithstanding this direction, some of the upajjhāyo would not forgive; and the co-resident priests being discouraged, left the priesthood, or joined themselves to other religious communities. Upon this Buddha decreed :—

8. “ It is not proper, priests, to refuse forgiveness when it is solicited. He who refuses to forgive is guilty of Dukkata.”

Some superiors suspended the obedient, and permitted the disobedient to remain free. This being reported to Buddha, he decreed :—

9. “ It is not proper, priests, to suspend those who perform their duty. He who does so is guilty of Dukkata.”

10. “ It is improper, priests, not to suspend those who neglect their duty. He who does not place such under suspension, is guilty of Dukkata.”

On one occasion a Brahmin requested ordination, but the priests (to whom he applied) were not willing to grant his request ; upon which he pined away with grief, lost his colour and became very unhappy. Buddha noticed the change in his appearance, and enquired respecting the cause. They informed him ; upon which he asked, “ Does any priest remember any good deed performed by this Brahmin ? ” Sāriputto said that he remembered a good act ; for that on one occasion the

* Or : “ Priests, I command to forgive,” for the permission or direction is always regarded as a command when spoken by Buddha.

Brahmin directed food to be put into his bowl. Buddha praised Sáriputto for remembering a kind act, and directed him to make the Brahmin a priest. Sáriputto enquired what formula he should use in ordaining him. Upon this Buddha called a meeting of the priests, and said :—

11. “Priests, I formerly permitted Upasampadá to be given upon the three-fold repetition of the Saraṇa. From this time I revoke this permission. I now direct Upasampadá to be given by, including the announcement (अङ्गी), a four-fold act.* And thus shall Upasampadá be given. A fluent and learned priest shall present the proposition to the Saṅgho,† and say:

““Hear me, my Lord the Saṅgho; such a person‡ seeks Upasampadá under such a venerable person.§ If it be a convenient time for the Saṅgho, the Saṅgho will give M. Upasampadá under N. as his superior (or upajjháyo). This is the proposition :—

““Hear me, my Lord the Saṅgho. This M. seeks Upasampadá under the venerable N. The Saṅgho gives Upasampadá to M. under N. as his superior. If any venerable one consent to M. receiving Upasampadá under N. as his superior, let him remain silent. If he do not consent, let him speak. A second time I repeat the same thing :—

““Hear me, my Lord the Saṅgho. This M. seeks Upasampadá under the venerable N. The Saṅgho gives Upasampadá to M. under N. as his superior. If any venerable one consents to M. receiving Upasampadá under N. as his superior, let him remain silent. If he do not consent, let him speak. A third time I repeat the same :—

* That is, an announcement of the intention, and the question being put thrice to the assembly.

† A chapter of the order.

‡ For this I shall substitute “M.”

§ For this I shall substitute “N.”

“ ‘Here me, my Lord the Sangho. This M. seeks Upasampadá under the venerable N. The Sangho gives Upasampadá to M. under N. as his superior. If any venerable one consent to M. receiving Upasampadá under N. as his superior, let him remain silent. If he do not consent, let him speak.

“ ‘Upasampadá is given to M. under N. as his superior. The Sangho consents, and therefore is silent : and thus I receive it.’ ”

A priest after having received ordination acted improperly. The priest remonstrated with him, saying “Friend, act not thus ; such conduct is not lawful. He replied : “I did not request you, venerable men, to give me Upasampadá. Why did you give it to me unsolicited ?” They reported the case to Buddha, who decreed :

12. “It is not proper, priests, to give Upasampadá to those who do not solicit it. He who thus gives Upasampadá is guilty of Dukkata. I direct, priests, that Upasampadá be given upon a request (of the candidate). It must, priests, be requested as follows :—

“The person seeking Upasampadá must come to the Sangho, and, removing his robe from one shoulder, worship the feet of the priests ; he must then kneel down, and raising his clasped hands, say: ‘My Lord the Sangho, I request Upasampadá. My Lord the Sangho, compassionate me, and raise me up.’* ”

“A fluent and learned priest shall then lay the proposal before the Sangho, and say: ‘Hear me, my Lord the Sangho,’ &c., using the formula prescribed in the foregoing precept.”

At that time many persons in Rájagaha supplied the priests with abundance of the most excellent food. A Brahmin noticing this, thought: ‘These sons of Sákya act in a becoming and virtuous manner : they eat good food, and sleep in places defended from

* The comment says, either from a state of vice, or from the lower order of a novice.

the wind. It will be advantageous, if I become one of that priesthood. He accordingly requested, and obtained ordination. At length, the supply of food brought to the monastery was diminished, and he was directed to take his bowl and collect alms: this he declined, saying, that if they gave him food, he would remain; but if not, he would leave the priesthood. "What! friend," said they; "did you become a priest for the sake of your belly?" "Truly I did," he replied. The virtuous priests, being much dissatisfied, related the circumstance to Buddha, who reproved the offender, and decreed:—

13. "I direct, priests, that those who give Upasampadā shall declare the four Nissaya (or things incumbent on a priest). 1st, The priesthood is for the purpose of living upon food collected as alms. This is that to which you are to attend as long as you live. 2nd, The priesthood is for the purpose of wearing garments made of cast-away cloth. This is that to which you are to attend so long as you live. 3rd, The priesthood is for the purpose of residing at the foot of a tree. To this you are to attend so long as you live. 4th, The priesthood is for the purpose of using as medicine the urine of horned cattle. To this you are to attend so long as you live."

This appears to have been the original rule for the priesthood, but it was soon modified; and now under each head articles are arranged, called "Extras allowed" (Atirēkalābhó*). The four Nissaya, or necessities, are food, raiment, dwelling, and medicine. Under the first, in addition to food collected in the alms-bowl, the extras allowed are, food brought to the temples for the priests generally; daily food furnished by individual benefactors; food of which they are invited to partake at the houses of their disciples and others; food given on certain days, on the Póya days (the days of the changes of the moon);

* අතිරෙකලාභො.

and on occasional days. These extras in a great measure nullify the original rule.

Under the second, or raiment, in addition to garments made of cast-away cloth, or refuse, they are permitted to wear robes made of linen, cotton, silk, woollen cloth, hempen cloth, or apparently anything which will take a yellow colour.

Under the head of a dwelling, in addition to living at the foot of a tree, they are allowed to dwell in temples, halls square houses, terraced buildings, and caves.

Under the head of medicine, they are allowed, in addition to cows' urine, ghee, butter, oil, honey, and sugar. By these "atiréka lábho" the ascetic principle is destroyed.

From the next precept it would appear that these extras were only occasional at the commencement of the system.

A young man solicited admission to the priesthood, and they immediately informed him of the four Nissaya. He replied, "If as a priest I am to be subject to these rules, I am unwilling to enter the priesthood," and went away disgusted. They informed Buddha, who ordained—

14. "Priests, the Nissaya shall not be previously declared to the (applicant for ordination). He who declares them is guilty of Dukkāṭa. I direct, priests, that they be declared at the time of giving Upasampadā."

At one time Upasampadā was given in assemblies where only two or three priests were present. This being reported to Buddha, he decreed :—

15. "Priests, it is not proper that Upasampadā should be given in an assembly of less than ten priests. Whoever gives Upasampadā in a smaller assembly is guilty of Dukkāṭa. I direct, priests, that Upasampadā be given in an assembly of ten priests, or of more than ten."

At that time, some priests who had only received Upasampadā one or two years assumed the office of superior (upajjhāya), and

received co-resident priests. This being perceived by Buddha, he decreed :—

16. “It is not proper, priests, that any one of less than ten years’ standing shall give Upasampadā. He who does so is guilty of Dukkāṭa. I direct, priests, Upasampadā to be given by those who are of ten years’ standing, or of more than ten years.”

There were priests of more than ten years’ standing, who where neither eloquent nor learned; and when they became superiors, it sometimes happened that the subordinate was more learned than his spiritual father; and from this many evils arose. This being represented to Buddha, he decreed :—

17. “Priests, it is not proper that one who is incompetent and unlearned should give Upasampadā: he who does so is guilty of Dukkāṭa; I direct that Upasampadā shall be given by priests competent and learned, who are of ten or more years’ standing.”

Afterwards, as many of the superiors had removed to other places, or had left the priesthood, or had died, great disorders prevailed among the priests, some of whom became slovenly and irregular in their habits. To remedy this Buddha decreed :—

18. “I direct, priests, that there be preceptors.”

The āchāriyo or teacher stood in the same relationship to the antéwāsiko or pupil, that the superior stood in to his co-resident priest. The rules belonging to preceptor and pupil are precisely the same as those respecting superior and co-resident; and it is not necessary here to repeat them. The receiving a pupil is called “to give (Nissaya or) proximity,” as the pupil was to reside with his teacher, unless his presence was required by his upajjhāyo or superior.

(*To be continued.*)

STATISTICAL ACCOUNT OF THE DISTRICT OF
CHILAW AND PUTTALAM, NORTH-
WESTERN PROVINCE.

BY A. O. BRODIE, ESQ.

THE District of Chilaw and Puttalam forms the maritime portion of the North-Western Province, and is bounded by the Northern Province, Seven Kóralés, Western Province, and the sea. Its length from North to South is about eighty miles, and its breadth is irregular, but averages probably sixteen or somewhat less.

The general appearance is flat, especially along the coasts : towards the interior, low undulating ridges and a few isolated granite groups are observed. The whole surface, except where salt-water marshes occur, or cultivation has been established, is covered with dense jungles containing valuable timber trees.

Divisions.

The District is not *physically* divided in any way, with this exception, that from Kalpitiya to Mádampé (about fifty miles) there runs a narrow, low, sandy peninsula, the northern portion of which is termed Akkaraippattu, and which is separated from the mainland by the gulf of Kalpitiya, Quiparawa canal, and Kadupiti-oya, successively. From its northern extremity, a narrow chain of islands runs towards Mannár and has doubtless, in a previous age, formed a continuation of the peninsula. For *financial* purposes, however, the District is divided into the following sections :—

- (1.) Puttalam district.
- (2.) Chilaw District, Northern division.
- (3.) Chilaw District, Southern Division.

(1.) The first of these is sub-divided into six pattús (Puttalam, Kalpitiya, Akkarai, Pomparippu, Kumárawanni, and Rajawanni pattús).

(2.) The second into twelve (A'nawulundáwa and Munnas-sarama pattus of Demala-pattu, Chilaw, Demala, Munnas-sarama, and A'nawulundáwa Pattus of Chilaw-pattu; Kumára-wanni, Pandita, Pérawili, Karambé, Rájawanni, and Kirimetiýá Pattús).

(3.) The last into four: namely, Yágam, Međa Paláta, O'tara Paláta, and Kamala Pattu.

Population.

The entire population, as obtained from the official returns of last year, is 38,370.

It would appear from statements now before me, that the number of males exceeds that of females by about eight per cent. That this difference really exists is improbable; the mistake is caused in part by those feelings, which have hitherto made it all but impossible to obtain correct statistical returns in Ceylon, (namely, a dread that every census is the prelude to increased taxation, and a superstitious dislike to any numbering of the people); and in part, because females are regarded in so degraded a light, that if care be not taken, they are on such occasions altogether omitted. The excellent Ordinance concerning statute labour, which is soon to come into force, will, among other advantages, also have this—that it will much facilitate the drawing up of correct population returns.

Rivers.

There are no navigable rivers in the District. The most important are the Kalá-oya, Deđuru-oya, and Kađúpiṭi-oya. Of these, the two latter are the only ones which are not entirely dry during several months of each year; but even this pre-eminence is, I think, due to their channels being so horizontal and so low for some miles above their embouchures, that the water of the sea penetrates far inland. During the dry season there is consequently little or no current.

The Kađúpiṭi-oya, from Máđampé to about two miles

north of Chilaw, at all times contains sea-water, and forms a portion of the Colombo-Puttalam canal. Immediately at Mádampé an embankment is thrown across the stream for the purpose of filling a large tank belonging to the village.

All the above rivers, taking their rise among the Kurunégala hills far to the east, are liable to sudden floods, even at times when the country through which a great portion of their course runs, is parched by lengthened droughts. On such occasions, the channels fill up with almost inconceivable rapidity, and the stream which might be crossed almost dry, becomes, in the course of an hour or two, a wide, deep, swift torrent. It is from this circumstance, that the Dēduru-oya is termed by the Tamils the Mayawan-āru, “sudden river.”

Lakes.

There is no natural *fresh-water* lake; but owing to the extensive cultivation of paddy, numberless tanks or reservoirs, some of them several miles in circumference, are scattered over the country.

The only *salt-water* lakes are those at which are situated the salt-pans of Puttalam, Natchchikalli, Karativú, Tilléadi, Udaippankarai, &c.; and those which form part of the canal from Chilaw to Puttalam. The Gulf of Kalpiṭiya, which is about eighteen miles long, and from two to six broad, may, from its land-locked position and its shallowness, be regarded as a lake; in fact, such is its usual designation among the European descendants.

Harbours.

There is only one harbour in the District, namely, Kalpiṭiya. It is situated near the opening of the gulf to which it gives the name. The channel to sea-ward is unfortunately tortuous and shallow; small native craft can therefore alone avail themselves of it. About four or five miles to the north of the town there is, however, a spacious bay, which can be

entered by vessels of considerable burden, and in which, I understand, they can always ride with tolerable safety. It is locally known under the name of Dutch Bay. Were a good road formed from it to Kalpitiya, it would, I have no doubt, give a considerable impulse to trade, by relieving merchants from the risk and expense of removing their cargoes to the mainland in small boats or canoes.

The whole of the remaining portion of the sea-coast, either in consequence of shoals or from the violence of the constant surf, is inaccessible ; and owing to the existence of bars, which run across the mouths of the Deduru-oya and Chilaw rivers, coasting vessels are prevented from making an entrance there.

Water Communication.

There is only one *canal* in the District, that which connects Kalpitiya with Colombo. It was originally projected and partially opened by the Dutch, but was only brought into an efficient state about twenty years ago. By means of it a great portion of the trade of the District is carried on ; boats from the Southern Province coming up either empty, or with small cargoes of furniture, betel leaves, jack fruits, &c., and taking away salt, copperah, paddy, &c., to Negombo and Colombo. It is very much to be regretted that of late this canal has again fallen into bad order, and during several months of each year is laid quite dry at various points.

That such should at any future period be the case, is, however, not at all probable ; and it may therefore be confidently expected that the trade of the District will rapidly and steadily increase.

Land Communication.

There are only three high *roads* in the District, all of which centre at Puttalam ; they lead respectively to Colombo, Kurunégala, and Anurádhapura.

The first is at present in a state of tolerable repair, and is

everywhere passable for vehicles, the requisite bridges having been constructed. It is not a road of much importance, as all heavy and bulky goods to be conveyed in its direction are, of course, taken by water.

The second has of late years received considerable attention; bridges have been made, embankments thrown up, &c. There is a great and rapidly increasing traffic along it; many thousand pounds' worth of salt being annually taken up it to the interior.

The third has as yet been only partially opened, and is not available for carts. Large quantities of cotton, paddy, &c., are, however, brought down by it to the coasts, and the natives living on the borders of this and the Northern Province inform me that they derive much advantage from it, even in its present imperfect state.

Climate.

The climate of the District in its general features resembles that of other parts of the Island similarly situated. For further details I am unable to refer to any paper except that which I had lately the honor to submit to the Society, and deem it unnecessary to state more than merely that, from observations continued for one year (from 1st August, 1847, to 31st July, 1848) and registered at 9 A.M., at noon, and at 3 P.M., it appears that:—

The highest temperature remarked was	...	91.25 Fahr.
The lowest	... ..	72.00
The highest mean of any month was in March		85.796
The lowest do. do. in December		78.229
Average temperature at 9 A.M.	...	80.142
Do. do. noon	...	82.735
Do. do. 3 P.M.	...	82.675
General mean temperature at Puttalam	...	79.718
Extreme range between 9 A.M. and 3 P.M.		19.25
That the South-West wind occurred on	...	205 days.
Do. North-East	... ..	73

That the number of calm days was	...	34
Do. do. rainy days ...	...	112
Do. do. days with thunder	...	98
Thunderstorms at Puttalam	...	21

Health.

All that part of the District which is freely exposed to the influence of the sea-breeze is on the whole healthy, but towards the interior, where lofty forests check all circulation of air, and where extensive swamps and neglected tanks give rise to noxious miasma, the people are much subject to fever, lingering ulcers, and various cutaneous diseases. During the prevalence of the N.E. Monsoon, the wind traverses the pestilential marshes just mentioned before reaching the maritime parts, and gives rise to sickness there.

Cholera occasionally visits the District, but seems to occur only in September and October—that is, immediately preceding the commencement of the rain. It is at least possible, that the drinking of water from the small pools loaded with decaying vegetable and animal matter may, in some way, be connected with the occurrence of this disease. It is a common—and apparently correct—remark, that any decided change of weather causes a cessation of the disease.

In stating that the maritime pattus are healthy, I ought to have excepted the village of Kalpitiya, in which the number of deaths, especially among the females, is truly lamentable. This state of things has, so far as I can learn, only existed since the town has been surrounded with numerous cocoanut topes, which, in combination with narrow winding lanes, effectually prevent ventilation, and would very probably be in a great measure removed, if one or more straight roads were cut running East and West from the sea to the gulf.

Regarding the quantity of rain, moisture in the atmosphere, &c., no observations have, so far as I am aware, been made.

The natives unanimously concur in stating, that at one time the jungle pattus were much more healthy than at present, and account for the change by the existence of numerous tanks, then used for irrigation, but now neglected.

Geology.

The geology of the District presents little that is attractive, except indeed to those who turn their attention to the minuter varications in the older rocks.

All along the sea-coast there are a series of horizontal beds of sandstone, belonging in all probability to the present formation, and never elevated more than a very few feet above the present water level. The rock itself varies in structure, and contains numerous enclosed shells and coral lines, apparently identical with species existing in the neighbouring ocean. The shells in many cases retain the enamel, and are in all respects as perfect as if they had just been washed into the beach.

At Káratívú, fourteen miles to the North of Puttalam, there are various strata of calcareous rock, some friable as marl, some highly indurated. These also undoubtedly belong to the present formation.

The soil of the maritime parts is in general sandy, but interspersed with rich alluvial earth, potters' clay, and fresh water marl of recent origin. Towards the interior, where the isolated granite rocks previously mentioned appear, large deposits of cabook gravel are met with.

That changes in the relative positions of sea and land have occurred here within the historic period, seems to be proved by the existence of a tradition to the effect, that in the time of the famed Queen Alliarasáni, the Gulf of Kalpiṭiya had no opening to the Northward, but communicated with the sea by a channel running in the line of the present Chilaw Canal; that the Queen abovenamed used to proceed from Kudiremalai to the Akkaraip-pattu by land; and that a great flood came, buried

her palace under the waves, and, bursting through a neck of land, converted the lake into a gulf, which form it still retains.

Mineralogy.

No gems have been found in this District ; and the only ore which I have heard of is the bog iron ore, procured in considerable quantities, a few miles to the south of Chilaw, and smelted by the natives, who have, it appears, observed its reproduction.

Nitre used at one time to be procured from various caves. One of these I visited, and have reason to believe that the salt was not formed naturally, but was obtained artificially from the dung of countless bats which have their abode in the grotto.

Salt is procured in large quantities by evaporation of seawater, and indeed forms the chief source of public revenue. The greater portion of it is obtained by means of artificial pans ; a few hundred bushels are, however, occasionally spontaneously formed near Kalpitiya, during the dry season.

At Uppukulam, fifteen miles N. W. of Puttalam, the natives affirm that a very bitter kind of salt (Epsom?) is to be procured. I have not, however, had any opportunity of verifying the statement.

Springs.

No medical or thermal springs are known.

Soil, Agriculture, &c.

As previously mentioned, a great portion of the soil in the maritime districts is a silicious sand, more or less mixed with comminuted shells. Where granite rocks exist, a reddish loam takes the place of the sand ; and on the margin of rivers and lakes a rich black mould, well adapted for the cultivation of paddy, is to be met with. In some places a retentive clay exists and is used in the manufacture of bricks, &c.

The two staple vegetable products of the District are coconuts and paddy.

All the country lying along the sea-coast is occupied by topes of cocoanut trees, which flourish in a soil consisting apparently of pure sand. The finest plantations which I have seen are at Mádampe, on the site of the former pepper gardens; but the whole eastern side of the Akkaraip-pattu yields good crops, which the natives attribute in part to the existence of thin sandstone beds a few feet under the surface of the ground. Below these strata there is water, and it appears that this, by capillary attraction, rises through the stone, thus keeping the roots damp, and at the same time preventing them from being constantly immersed in stagnant water.

The tree seems to flourish best in the immediate vicinity of the sea, and I have frequently seen it growing well with its roots partially immersed in salt water. Owing apparently to the porousness of the soil, an elevation of a few feet is found. to act nearly as prejudicially as a removal to a distance of several miles from the coast. The benefits which the cocoanut tree bestows on the natives are so well known that it is unnecessary to particularize them. The *oil* which is in such general use is usually obtained by expression, one end of a bent lever being inserted into a large mortar-shaped vessel so as to rub against the inner surface, while the other is attached to the draught cattle. The cake which is left is called *poonac*; it contains a large quantity of oil, and is used for fattening poultry, cattle, &c.

There are about 950,000 cocoanut trees in the District; and as about 80 are generally placed on an acre, it would appear that about 12,000 acres are devoted to this plant, each acre being worth a rent of from 20s. to 60s. Each tree yields from 25 to 70 nuts, though some occasionally are found to give a crop six or eight times greater than this; but in those cases the nuts are generally small.

From 1,000 to 1,500 nuts yield on an average a bar of *copperah* (the dried kernel), and this yields about 140 seers

or 320 lbs. of oil. The average price of copperah is from 22s. to 30s. and above, per bar; that of *oil* $2\frac{1}{2}d.$ to $3\frac{3}{4}d.$ per bottle; and that of *poonac* about $\frac{3}{5}d.$ per lb., and from 8s. 9d. to 11s. 8d. per bar. One bar of copperah yields about 210 lbs. of poonac.

There are, besides those already enumerated, certain other products of the cocoanut tree, which add to the profits of the planter. Thus, the leaves split lengthways and then woven together by means of the leaflets, form what are called *cadjans*, of which 100 sell for 1s. 6d. or 2s.; or if the *cadjans* be woven into a sort of continuous sheet or mat, called a *karisanku* (twelve *cadjans* making from four to six *karisankus*), a hundred of these are worth 4s. or 4s. 6d. Again, 250 to 300 nuts give 1,000 fathoms of *coir* rope, worth about 2s. 6d. In fact, the uses of this tree are endless.

As might be expected, the prices of the various products obtained from the cocoanut tree vary extremely in different parts of the District. To prevent misunderstanding, I give separately the usual prices at Kalpitiya in the north, and Mádampe in the south. At both places the tree flourishes and is cultivated to a great extent.

At Kalpitiya the cocoanuts are worth about £1. 10s. per 1,000. Poonac from 8s. 9d. to 11s. 8d. per bar (onequarter of a ton). Copperah, £1. 1s. to £2. 3s. per bar. Oil $5d.$ to $5\frac{1}{4}d.$ per seer.

About 300,000 cocoanuts are annually exported from Kalpitiya, almost the whole quantity going to the Continent of India; a few thousands besides are sent over in the husk for planting. From the same port 1,000 bars of copperah go to Colombo, 100 to the Northern Province, and 2,000 to the Coast; the last-mentioned paying an export duty of $2\frac{1}{2}$ per cent. A small quantity of oil is sent to Jaffna, and occasionally a little to the Coast. Return dhonies take about 50,000 *cadjans* to India annually; these pay a duty of $2\frac{1}{2}$ per cent., and are worth

at Kalpitiya from 1s. 6d. to 2s. per 100, but at the places where they are made not more than from 7½d. to 9d. per 100.

At Mádampe, on the other hand, copperah is worth from £ 1. 2s. 6d. to £ 2. 5s. per bar; poonac, ¾d. per lb., and oil from 2¼d. to 3¼d. per bottle. About 10,000 or 12,000 bars of copperah are annually taken to Colombo for sale.

I ought perhaps to add, that the tree is generally at first grown in nurseries, and that it will bear transplanting at a considerable age.

It is greatly to be regretted that the upset Government price for land is as high here as in districts of which the capabilities have already been ascertained. Capitalists are unwilling to give the price demanded, knowing, as they do, that natives are in the habit of selling equally good land at rates a half or a third lower: and, on the other hand, they are deterred from buying the ground from natives, partly on account of the difficulty which they would experience in purchasing large continuous tracts, and partly from a dread lest their title to the land might at a future period be disputed by Government, which would most probably occur in numerous cases.

The native mill, being a very imperfect apparatus, large quantities of copperah are annually sent out of the District, chiefly to Colombo. It is much to be desired that the oil itself should alone be transported; and this cannot be expected until some better kind of mill has been introduced. Many years ago an Englishman began to construct such an apparatus at Kalpitiya; it was made on the plan adopted in Europe, where a heavy vertical wheel is forced to move in a circular path over the substance to be crushed.

The cultivation of the cocoanut is extending very rapidly, and, as the District affords every facility for water traffic, it may be presumed that the number of topes will be increased year after year.

The farming system adopted with regard to this plant is

that customary in many parts of the East. The land-owner places on the grounds one or more peasant families, who take charge of the plants until they are in full bearing—that is, for from four to eight years—at the end of which time the tenant receives one-half of the trees as his hire. This gives him, however, no claim to the land itself. Occasionally, instead of making this division, the proprietor dismisses the cultivator, after paying him at the rate of a shilling, or a dollar, for each tree. It is almost unnecessary to add, that during the first three or four years the plants must be watered daily in dry weather.

I know of no more legitimate source of public revenue than a small tax on fruit-bearing cocoanut trees. Whenever this has been proposed, the natives have made a great outcry; but it is quite notorious, and is indeed freely acknowledged by themselves, that no sooner is a man in possession of a small cocoanut tope, than he is independent for the rest of his life; he has absolutely nothing to do but to pluck the fruit, eat one portion, and sell the remainder. The paddy cultivator has to labour during several months to obtain one crop, and even this he may lose from unfavourable weather;—he is taxed. On the contrary, the cocoanut cultivator has merely to water his trees for two or three years, and then he may safely reckon on a continuous crop for forty or fifty years, and this without any further labour on his part;—he is not taxed.

In the interior, where the cocoanut does not thrive so well as along the coast, the natives turn their attention to the cultivation of various grains—in an especial manner to that of paddy. Of this plant, a great many varieties are known, which however, so far as this District is concerned, may be divided into two great classes, according to whether they ripen in four or in three months. The former being sown from July to December, yields the *Maha* harvest (මහවැසි) in January, February, and March. The latter, placed in the ground between

April and July, ripens in August or September, giving the *Yala* harvest (අල් මෙව්ව). Those kinds of paddy known as *Má-vi* (මාවි), *Ilankalaiyan* (இலங்கலையன்), *Hunaramála* (ஹுநரமலா) are only sown for the Maha harvest. Most, if not all of the rest, may be used for either crop.

The natives here, as elsewhere, make their tanks too shallow, the embankments unequal in height throughout, and the partition mounds too numerous. To shew the evil effects of these mistakes, and the best means by which they are to be obviated, would require more room than can be allowed in this sketch.

The farm system is that which has been the curse of India from time immemorial; and it prevails, I believe, in every part of the Island. It is liable to slight modifications, but its general features may be thus described.

No landed proprietor farms his own ground. Twice annually he comes to an agreement with a number of peasants, each of whom takes charge of the field allotted to him for that one crop.* When the grain has been threshed and the Government share deducted, the remainder is divided into four equal shares, thus:—

Proprietor ; Cattle ; Seed-corn ; Cultivator.

In general, the landlord provides the cattle and seed-corn, the peasant feeding the former as long as they are employed on the ground.

In most cases no particular arrangement is made regarding the straw. Any one who pleases may take it. In fact, owing to the bad system pursued in reaping, one-half or more of it is left in the field as stubble.

Unless either the large proprietors can be induced to farm their own lands, or the natives can be induced to combine to some extent in all objects for the mutual benefit of the inhabitants

* Of course it frequently happens that a peasant cultivates the same field during several successive years.

of each village, and until leases for lengthened periods are adopted, the peasant has no encouragement in endeavouring to improve his farm, and it is utterly hopeless to expect any great improvement in this branch of agriculture.

Such then are some of those circumstances which tend to act injuriously on agriculture. There still remains to be noticed the train of evils arising from the manner in which the grain tax is levied, a system which, however defective it may be, cannot be easily dispensed with. This subject is, however, one of too great importance to be treated of in this abstract.

Much land being so situated that it cannot be irrigated, is reserved for the cultivation of what are called “fine grains,” such as *kurakkan*, *menéri*, *sesamum*, &c.

The system pursued is most destructive; the same piece of ground being sown only once in five, ten, or fifteen years, and the land allowed to become covered with wood in the intervals. The ashes of this brushwood form the only manure employed. The natural effects of a plan by which each peasant must possess a number of separate patches of land, each large enough to give him a sufficient crop for one year, are abundantly evident. I have often travelled for days together through nothing but chena land—so the clearings are termed—without seeing more than a very few trees of any value as timber.

Nothing but the introduction of the use of manures can check the inherent evils of the system.

These plants then—the cocoanut, paddy, and fine grains—employ the greater portion of the agricultural population; others are however cultivated, and of the more important I shall give short notices.

Tobacco is to be met with all over the District; but more attention is paid to it at and to the south of Chilaw than elsewhere.

The system of cultivation is as follows. The ground during from six to twelve months is manured by railing off successively small portions of the field and using those as cattle

folds. There are two seasons for sowing tobacco: that for the Mahá harvest is sown in December and January, and cut in March and April; that for the Yala harvest is sown in June and July, and cut in September. Throughout the greater portion of the District the Maha harvest alone is looked to. In the extreme south the Yala is that to which sole attention is directed. Two months after sowing, the young plants, which have then four or five leaves each, are removed from the nursery and planted in rows three feet apart. At intervals during three or four months the leaves are successively stripped off, dried partly in the sun and partly in sheds, and ultimately piled up in a small close room where they heat considerably. About ten leaves are obtained from each plant; these are worth from $2\frac{1}{2}d.$ to $4d.$, the cost of cultivation being about $1\frac{1}{2}d.$ The large profit thus shown is, however, rather nominal than real, as lengthened droughts frequently ruin the crops; heavy rain occurring before the leaves are ripe proves equally injurious. The price of the leaves varies extremely; the worst are not worth more than a few shillings per thousand, the very best not less than £6, and sometimes even £7 10s., for the same quantity. Those which bring this latter price are large, thick, viscous, and both taste and smell very strong. The method adopted in drying the produce and in manufacturing it is extremely defective.

If the land be rented out, the crop is divided thus:—Landowner, Peasant, Cattle—equal shares.

The *Palmyra* palm (*Borassus flabelliformis*, Linn.) is found in all the maritime portions of the District, but is not much prized. It is chiefly used for the purpose of obtaining from it *toddy* and *jaggery*. The wood of old trees answers admirably for rafters; the kernels are cool and pleasant; and from the expressed juice of the husk surrounding the nut a kind of paste called Punattoo is made. In the Northern parts of the Island this substance forms an important article of food.

The *Kitul* (*Caryota urens*, Linn.) grows freely towards the interior, but is not much cultivated; the jaggery obtained from it is considered superior to all others.

The *Talipot* (*Corypha umbraculifera*, Linn.) is all but unknown.

The *Areka* palm (*Areca catechu*, Linn.) is very extensively cultivated in the southern part of the District. It begins to bear about six years after being planted, and produces, on an average, 100 nuts annually; these are worth on the spot from $2\frac{1}{4}d.$ to $4\frac{1}{2}d.$ per hundred. The tree is short-lived, generally shewing signs of decay after twenty years or so. During the supremacy of the Portuguese and Dutch the natives at Puttałam were in the habit of paying their taxes in “betel nuts”; these must, however, have been procured from other Districts, as it is found that the tree does not thrive anywhere near the village. The plants shoot up rapidly during the first few years, but then die away suddenly. The present produce is unequal to the demand; large quantities are consequently brought from the southern parts of the Island, where the soil is better adapted to the plant.

Plantains (*Musa sapientum*, Linn.) grow abundantly everywhere, but little attention is paid to the selection of good varieties.

The *Betel creeper* (Sin. *bulatvela*, බුලත්වෙල) is found in every village, but only towards the south are large gardens given up to this plant.

Pepper was at one time cultivated to a great extent near Mádampe, but is now totally neglected, the natives believing that if ground be devoted to it alone, the expenses of the cultivation would not be covered, and that, if allowed to clamber round cocoanut trees, these would be destroyed.

Coffee grows freely and the fruit is collected by the natives, but it is of course of little or no value.

Cinnamon is found abundantly about eight miles to the

south of Puttalam, and also in other parts of the District ; the bark used to be collected during the existence of the Government monopoly, and the villagers still gather small quantities of it.

The *Bread fruit* (*Artocarpus incisa*, Linn.) and *Jack* (*Artocarpus integrifolia*, Linn.) are much cultivated towards the south ; the former grows well at Kalpitiya.

The *Sapan wood* (*Cæsalpina Sappan*, Linn.—Sī. *patangi*, පතංගි) grows in the District, but I am not aware that it is collected for sale.

In some parts of the District *Hemp* (Ceylon—Sī. *hana*, හන, *Crotalaria juncea*, Linn.) is raised in considerable quantities ; but the absence of pure running streams is a great obstacle in the way of the cultivator ; it is chiefly employed by fishermen.

Formerly, when the collection of *cheya* (*Oldenlandia umbellata*, Linn.,—Sī. *sāyan mula*) was a Government monopoly, large quantities used to be obtained from the sandy downs which gird the coast ; that growing in the neighbourhood of Kalpitiya was considered to be of the best quality. A peculiar caste of people employ themselves to a considerable extent in digging up and drying the root, which yields a very brilliant, and I believe permanent red dye. About ten or fifteen tons of this article are exported annually to the Continent of India.

It may be proper to mention that at Kalpitiya considerable quantities of a kind of seaweed are dried and sent to different parts of the Island, where it is usually termed *Jaffna moss*. *Gracillaria lichenoides*, Grev.

The process of preparation consists simply in washing it in fresh water and drying it several times in succession ; when boiled and allowed to cool, it forms a transparent, nearly tasteless, but, I am told, nourishing jelly. The preparation of the plant was first commenced in 1806, at which time the usual

price was 9*d.* per lb.; it has now however fallen to 1½*d.*, but the process is less carefully conducted than formerly.

The fruits and vegetables are the same as in other parts of the low-country; but no attention whatever being paid to their cultivation, the produce of the majority is poor and insipid. English vegetables have at various times been planted; but *lettuces*, *radishes*, and some kinds of *bean* are the only ones which appear capable of accommodating themselves to the climate.

Cotton grows wild over the whole District, and the product used to be collected in large quantities. Cloth from English looms has, however, to a great extent, driven the native manufacturer out of the market.

Timber.

The whole face of the District, with the exception of a narrow strip along the sea-coast, being covered with wood, a considerable variety of timber trees is to be met with.

The commonest of these are the following:—

English.	Sinhalese.	Classical.
Ebony ...	Kaluwara, කළුවර	... Diospyros Ebenum, Retz.
Satinwood ...	Buruta, බුරුත	... Chloroxylon Swietenia, D.C.
—	Milla, මිල්ල	... Vitex altissima, Linn.
—	Halmilla, හල්මිල්ල	... Berryâ Ammonilla, Rox.
Ironwood* ...	Palu, පළු	... Mimusops Indica, D.C.
—	Godapara, ගොඩපර	... Dillenia retusa, Than.
—	Hora, හොර	... Diptercarpus Zeylanicus, Thw.
Jack ...	Kos, කොස්	... Artocarpus integrifolia, Linn.
Teak ...	Tékka, තෙක්ක	... Tectona grandis, Linn.

Of these, Jack is never found growing spontaneously, and of the Teak there are unfortunately but few specimens left, all the plantations of this tree formed in the southern part of the

* The true *ironwood* tree is *Messua ferrea*, L. (Sig. *nágaha*, නාගහ.)

District having been cut down without any provision being made for a future supply. Some young plants were, however, brought up to Puttalam about a year ago, and have hitherto grown well.

From some of the indigenous trees various gums and resins, valuable in the Arts and in Medicine, are obtained.

Fisheries.

As might be presumed, a large number of persons are engaged in catching and in curing fish. For the former purpose various plans are adopted. The passing cooly or lazy villager obtains a savoury addition to his evening meal by cutting off and gradually emptying small portions of half-dried-up tanks; while others attain the same end by pursuing shoals of fish along shallow channels, and suddenly dropping over them conical-shaped baskets. The quantity of fish caught in this way would appear extraordinary to those who have not had opportunities of observing that every collection of water, however small, swarms with life. Those whose means are greater, make use of drag nets managed by two persons, which are used either in still water or else in the surf which beats against, and at short intervals surmounts, the shelves of rocks which line the coast.

To catch large fish, hooks and lines, deep sea nets, and stake nets are employed. The latter are ingeniously constructed of saplings tied side by side, leaving interstices of half an inch or more. A fence of these is run out from the shore, and terminates in a series of arrow-headed chambers. It is in these kraals that the majority of the turtle obtained here are caught. Another plan, in constant use among the natives, is to run a fence of saplings or nets from each side of a river, leaving only a small channel in the centre; in this channel they place either a long bag net, or else a series of baskets formed on the principle of a mouse trap, the fish entering with ease but being unable to effect their escape. Shrimp

fishers make use of a fine net worked in such a manner as to form a lengthened funnel-shaped figure, to the large circle forming the aperture of which small lead weights are attached. The net is carried folded over the left arm; a rotatory motion is given to the weighted end, which is ultimately propelled to a considerable distance, and in such a manner as to fall on the water expanded and with the opening downwards; the lead weights immediately sink to the bottom and enclose within the circle the fish which happen to be on the spot.

Large quantities of fish are dried, salted, and despatched to the interior; the process is, however, carried out in the most imperfect manner, and the product, consequently, in many cases utterly unfit for consumption, is without doubt a frequent cause of illness among those who partake of it.

Since the tax upon fish was removed, the trade in this article has very much diminished, and the boatmen are most anxious that the duty should again be levied. This may appear paradoxical, but I speak positively; all the chief fishers here having on one occasion expressed their opinions in my presence, and this under circumstances which makes me feel confident that such is the real state of feeling among them.

The anomaly is easy of explanation. When the fish tax was farmed out, it was of course the interest of the renters that as much activity as possible should be displayed. They accordingly made advances to the poorer boatmen, caused their canoes and nets to be repaired, and in return constantly urged them to assiduity. The renter thus secured himself from loss, and the fisher, besides receiving an advance when in distress, found that he had by his industry secured for himself a larger sum than hitherto. In fact, the wish for the tax is merely a modified acknowledgment of the advantages of capital. The people are too wanting in enterprise and too divided among themselves to unite for any useful purpose, and although aware of the advantages of industry, have not energy

enough to act upon this conviction without the constant admonitions of headmen. Like all Asiatics, they become utterly helpless if unprovided with chiefs.

Domestic Animals.

Of the domestic animals, no breed is, so far as I am aware, peculiar to the District. Large quantities of cattle are annually brought over from the Coast, and are bought up to be employed for the ploughing of paddy fields as draught or as pack cattle. There appear to be several breeds, but no trouble is taken in preserving or improving any. The largest and handsomest are not considered so profitable as those of moderate size, but on this subject the natives appear to be gradually altering their opinion. Buffaloes in large numbers stray over the plains and through the jungles of the District; they are sluggish animals, are possessed of more physical strength than the common cattle, but are slow-paced and soon sicken and die if they have not frequent opportunities of immersing themselves in water. They are used in farming, and are also commonly employed in carts, a practice which, I believe, is not general throughout the Island. Sheep and goats of several breeds are found in considerable numbers all along the coast. Towards the interior the natives entertain some prejudice against the rearing of them; and indeed, owing to the habits of these animals, it would be troublesome keeping them in a District covered with forest and abounding in leopards.

Of the larger cattle, it may, I think, with safety be said that, like guns, one-half at least are purchased, not from an expectation that they will yield any direct profit to the owner, but simply as a means of investing money; thus they frequently form portions of the marriage gifts among the natives; and till the present high rate of interest ceases, and the people understand to some extent the principles of banking, and feel confidence in these establishments, the system will doubtless

continue. It is only on very rare occasions that cattle are killed for food; the hides are invariably thrown away; and, in short, in a District abounding in pasture land, dairies, are unknown, milk and butter are rarities, and scarcely any benefit is derived from the existence of cows, buffaloes, or sheep. A large proportion of the natives along the coast being Muhammadans, pigs are only to be met with in two or three of the larger villages. An English breed has lately been introduced, thrives well, and is being gradually disseminated.

During the last few years the amount of stock has been very greatly diminished by murrain; in many places three-fourths of the animals have died. It is highly desirable that the natives should receive some simple instructions as to the method of treatment in such cases; hitherto charms alone have been applied, and the consequent loss to the country has been very great indeed.

Wild Animals.

It is only within a recent period that attention has, so far as I am aware, been paid to the zoology of the District. I am therefore not prepared to enter into any details at present. So far as the better known and large animals are concerned, this may be mentioned:—

Elephants are abundant everywhere, and cause considerable injury to the cultivated lands. Accidents to human beings are however extremely rare. The jungle *bear* and the two species of *leopard* (commonly but falsely termed by Europeans, chetah or tiger) are common; the black variety is occasionally met with. *Wild hogs* are abundant, and frequently commit great ravages in young cocoanut and plantain gardens, as do the *porcupines*. Herds of *deer* are to be seen grazing in the plains or trooping through the forest glades; there are four species, if the musk deer be included. *Jackals* abound everywhere; the

natives say that there are two distinct species, one large and red, the other smaller and dark, but I have not been able to verify this. Two varieties of the *mongoose* are to be seen in every piece of open jungle; they prove destructive to poultry, as do wild-cats and civets. The *manis*, or scaly ant-eater, I have met with on several occasions. It is used as food. The rivers and tanks abound with *crocodiles*, of which there appear to be two species, one attaining a length of eighteen or twenty feet, and formidable to men and cattle, the other seldom exceeding eight or ten feet, and perfectly harmless when uninjured. Both are naturally timid and fear the face of man. Numerous species of smaller lizards are found. That commonly known under the name of *iguana* is used as food, and its skin is converted into shoes. It is hunted with dogs trained for that purpose.

The forests contain numerous and beautiful birds and insects, many yet undescribed; but of these, for reasons already given, it would be premature to say anything at present.

It may be mentioned here that at Kalpitiya (or Calpentyn as it is often written) a considerable quantity of *bêche-de-mer* is annually prepared and sent to Jaffna for exportation to the Malay Peninsula and China. It consists simply of the dried bodies of a species of *Holothuria* (sea cucumber), which is found in large quantities along the oozy shores of the Gulf. They are picked up at ebb tide. When taken into the hand the muscular contraction of the thick leathery integument is so strong, that a great portion of the viscera is frequently forcibly protruded. If this does not occur, the animals are opened, and, after embowelling, boiled for a couple of hours till quite soft, and then dried on the beach if the weather is favourable; under other circumstances, in close huts by means of fires. The price on the spot is about 3s. 9d. per 1000, and this quantity can easily be collected by two men during one ebb tide.

Pearl and Chank Fisheries.

Pearl banks exist along the coast from Chilaw to Kárativu Island, but many years have elapsed since they were fished.

Chanks are still in considerable demand; they are exported to the continent, where they are sawn up and converted into beads, bracelets, and other ornaments. As a branch of revenue this has, however, almost entirely ceased to exist.

History and Inhabitants.

An attempt to write a connected history of any small portion of a country is almost absurd; its own peculiar politics are trivial, and matters of greater interest at once merge into the general history of the land.

The only historical circumstance attaching much interest to the District is the erection within it of the first Capital of Ceylon.

From the Maháwanso (Turnour's translation, p. 47 *et seq.*) and Upham's Sacred and Historical Books of Ceylon (p. 27 *et seq.*) we learn, that on the very day that the last Buddha expired, Prince Wijaya, grandson of the lion, having by his dissolute conduct been driven from his home on the continent, landed at some part of the coast near Puttalam; that after proceeding a few miles towards the interior and overcoming a female demon, named Kuwéni, who had enchanted and thrown into a dark cavern his seven hundred followers, he built a palace to ratify a covenant which he had made with the sorceress. Around this palace the first Capital of Ceylon was built, and received the name of Tambapanni, or Tammanná Aḍawiya, or Tammanná Nuwara, from the red earth found there having stained the hands of Wijaya's followers, who, overcome by sea-sickness and faintness, had thrown themselves on the ground to recruit their strength. The place is well-known here under the name of Tammanná Aḍawiya; it lies about six or eight miles to the east of Puttalam, and was described by

Mr. Casie Chitty in the Transactions of the Royal Asiatic Society. A few rough pillars and slabs scattered at random in a thick jungle are the only remains now visible.

Wijaya's companions and successors soon established themselves in different parts of the country, and in the fifth reign, that of Pandukábhaya, the seat of Government was finally removed about forty miles north-west to Anurádhapura. A king of Mádampe (Tanne Wella Báhu), and the queen Alliyara Sáni, who has been referred to in a previous section, are the only other Royal personages having their residence within the District, of whom, as far as I am aware, history contains any record.

In Upham's Collections (Vol. III., p. 324 *et seq.*) there is an account of the removal of the branch of the Bó tree from Jambudwípa to Bódhimandala at Anurádhapura, &c. In this tract particular mention is made of a Malabar nation having been called to assist in a local war which occurred in the time of Tissa who followed Dutthagámini. The foreigners landed at Kárativu, fourteen miles north of Puttalam, and appear to have proceeded towards the interior nearly by the line of the present Kurunégala road. What we are to understand by the nine hundred cannons which the Malabars brought with them, it is difficult to surmise; probably the confusion arises from mistranslation.

The inhabitants, as in other maritime Districts, are composed of people of many nations. The Muhammadans or *Moormen* are said by Sir A. Johnston to have first settled in the Island in the early part of the Eighth century; they formed portion of those Arabs of the house of Haslum who were driven from Arabia by the tyranny of the Caliph Abdul Melek Ben Merwen, and who, proceeding southwards, made various settlements in the South of India and Malacca. In Ceylon they carried on a very extensive trade in rice, indigo, chanks, cheya, &c.; and by making advances to the natives for the purpose of

repairing the tanks, were the means of keeping the northern part of the Island in a very prosperous condition. These are the most industrious and mercantile class ; they are the traders, boutique keepers, master fishers, &c. ; they also deal largely in cattle, and are frequent purchasers of Government taxes. They are for the most part confined to the immediate vicinity of the sea ; there are, however, Moor villages scattered about the interior, the inhabitants of which are much disliked and feared by the natives. The Moors have mixed up with their own faith many superstitions borrowed from Hinduism.

Of *Malays* but few reside in the District, and these are soldiers, pensioners, or descendants of such, and in general hold small Government employments, such as peons, &c.

The *Dutch* descendants generally find employment as clerks, post-holders, &c. It is greatly to be regretted that this class relies so much on the support of Government ; they possess qualities which one would expect to adapt them for the life of tradesmen ; and if so employed they would be better off and much more independent. Some foolish prejudice is the only obstacle to this desirable change. The majority, I believe, adhere to the Dutch and Protestant Church.

The *Portuguese* descendants now form, on the whole, a very degraded class, and seem to be looked down upon by all. They profess Roman Catholicism.

The low-country *Sinhalese* employ themselves in keeping boutiques or taverns, trading in salt, cultivating cocoanut gardens, &c. They have to a great extent forgotten Buddhism, and for the most part seem to have no fixed opinion on religious matters, changing their faith with astonishing non-chalance at the call of interest or whim.

The *Sinhalese* who live in the jungle pattus treat those of the coast with much scorn ; they adhere with a tolerable firmness to Buddhism, but have not failed to conjoin with this comparatively pure faith countless superstitions borrowed from

other nations. Latterly, owing to the sloth and ignorance of the priests, many of the people are becoming indifferent to Buddhism, and while one constantly finds viháres going to ruin, few if any are rising to supply their places.

A large number of *Tamil* coolies annually pass through the District on their way to and from the coffee estates in the interior; of these not a few take up their residence about Puttalam or other villages, being employed as carters, placed in charge of young cocoanut plantations, &c.

There is still one race to be mentioned, many of the customs prevalent among which are singular and worthy of attention; I refer to the *Mukkuvar*. These people are Christian Tamils, and are found, I believe, solely along the coast and to the north of Chilaw. They intermarry with each other and with Tamil Christians, but keep a good deal apart from the other inhabitants. In general appearance they somewhat resemble Moormen. At one time they formed a very influential body and possessed large tracts of land; but being almost without exception addicted to drinking, they have now sunk very much in the social scale. The *Mukkuvar* headmen are termed *Rájavanniya*, and *Kumáravanniya* respectively, and by an ancient custom these titles ought to descend, not from father to son, but from uncle to nephew. To describe the origin of this strange practice would occupy more time than can at present be afforded; I therefore omit it.

I have thus endeavoured to give a description of this District. There is nothing of particular interest, but the recording of such statistics is often useful at a future period, which must plead my apology for laying so dry a paper before the Society.

ROCK INSCRIPTION AT GURUGOḌA VIHÁRE
IN THE MAGUL-KO'RALE, SEVEN-KÓRALÉS.

BY A. O. BRODIE, ESQ.

ON a late official tour through my District and through a part of Seven-kóralés, in company with the Government Agent of this Province, we visited the viháre of Gurugoda at Gribáwa in Magul-kóralé, about twenty-five miles south of Anurádhapura. This is one of the so-called rock temples, which are abundantly scattered over the country. The dwelling for the priests is as usual considerably elevated, being built on a projecting knoll, and is in the form of a square enclosing a small open and sunken court, in which on each successive morning the village women stand, while one of the priests, concealed behind a curtain, reads aloud portions of the sacred books. The temple itself is on a higher platform, and is formed by running up a wall at the front part of a wide shallow cave formed by a huge over-hanging ledge of rock. The internal walls are ornamented in the customary manner with crude, vividly coloured paintings, which portray the tortures to be endured in a future state of existence by the wicked. A few mutilated but very neatly carved Buddhas lying near the doorway, and a half-ruined Dágoba, complete the resemblance between this and the hundred structures of a similar character to be met with here.

A flight of stairs rudely cut out of the solid rock leads to the summit of the peak, from whence one obtains an extensive view over a country flat and fertile in its general character, but diversified by numerous isolated granitic groups. On a precipitous face of rock opposite the bana-maḍuwa, I found that a space about four feet square had been brought to a smooth surface and then covered with a long inscription, partly in Singhalese and partly in Páli. Not having time to copy the whole

of this, the head priest obligingly caused it to be transcribed on an ola, which he presented to me on the spot. This ola I placed at different times in the hands of two well-informed natives, and having compared the translations made by them, beg to lay the perfected English version before the Society.

It will be observed that the inscription is simply a grant to the priests of this viháre of certain villages and lands (so far as their produce is concerned) for the purpose of defraying the ordinary expenses of the establishment.

It is dated in the year Saka 1701, which I believe corresponds to 1779, A. D., and is stated to have been issued in accordance with the wishes of the King, Kírti Śrī Rāja Siṅha, who, according to the Maháwanso, reigned from A.D. 1747, to A.D. 1781, a statement in so far according with the inscription. It is only necessary to add, that the arrangement of words and clauses has been only so far altered as to make the translation tolerably intelligible.

TRANSLATION.

“ On this Thursday the 13th day after the full moon of the month Wesak in the year of the glorious king Saka, 1701.

“ For the purpose of performing the rites and offerings in the Viháre Galé Viháre of Giribáwa beyond Mí-oya in the Maha-mēda-pattu of Magul-kóralè.

“ This being suggested by the Wanní Mudaliyár of Giribáwa, and by Pilimatalawwé Wijayasundara Rájakaruná Sénádhpati Rája Mantrí who performs the offices of Maha Disáwa of Puttalam Munnésaram A’naiviluntán including the Seven-kóralés, and Mahá Adigár, and by the Minister’s son who performs the duties of Haluwaḍana Nilame,* the son of the said Sénádhpati.

“ This being suggested, the Supreme Lord of Lańká, Kírti Śrī Rāja Siṅha, who is endowed with every regal power and adorned with gems of virtue, celebrated for might in his own and foreign dominions, presiding like the God Sakra and conducting like Buddha himself, having ascended the throne

* The officer having charge of the King’s wardrobe.

of the wealthy city Sayikandanum, hereby sacrifices to the Wérágala Dágaba (*Dágabnahansé*) the pyramid at Wérágala, on the east of this side of Gurugoḍa Bêwuma, on the south from this side of Yantan Pallewallewatia Wérágala and Pempurugalla, on the west from this side of the village Belliagama Wérágala Lokáhettigama Bêwuma, on the north from this side of the tank of Wāduressa and the stone post of the water reservoir of Giribáwe, all the houses, trees, gardens, high lands, and low lands* situated within these four limits, to be possessed, as to all the produce thereof, by Dhammarakkhita Unnánsé of Giribáwe, his disciples and their successors from generation to generation on condition of performing the Buddhist sacrifices.

“ May the kings, ministers, and other persons who come into this world hereafter, without disturbing or encroaching, endeavour to obtain glory and *nirvána* by increasing the offerings more and more.

“ Should any one dispossess (the priests) of grass, timber, flowers or fruit, he will be born a great *prétá*.”†

Note by Honorary Secretary, 1882.

[Appended is a line for line transcript in Siphalese (A) and Roman characters (B) of this inscription as recently (December, 1881) copied, by request, under the direction of C. E. Jayatilaka Hulugala, Ratémahatmayá of the Vanni Hatpattu in the Kurunégala District, who writes :—“The Kórála whom I got to take the copy from the rock tells me the characters are very illegible, and that it was with difficulty he deciphered them.” The amended translation (C) from the Kórála’s MS. copy is by B. Guṇasékara, Translator to Government.]

* “Highlands and low lands,” *i.e.*, paddy fields and chéna land.

† A wandering mischievous demon.

A.

ශ්‍රී පුබු සකරජ වෂ්ටියෙන් එකිනෙක සන්ධිස එකට පැමිණි පුග නම්වූ මෙ වරුසයෙහි වෙසග මස අව කෙලෙස්වක නම් තිසිස ලත් බුහස්සෙයානිදා මේ දවසෙහි මාභුල්කෝරලේ බදු මැදපත්තුවේ මිමියෙන් මෙ ගොඩ ගිරිබාවේ චේරගල විහාරය යන මෙහි පුදබිලකකම් පවත්නා පිනිස ගිරිබාවේ වනා මුදියන්සේ ධ මමරකඩික හිඤ්ඤන්තිසිත්තා පුතලම මුනාසාරම ආනමලොද්ධව ඇතුළුව සත් කෝරලේ මහ දිසාව හා මහ අධිකාරණී කරණ පිළිම තලවූවේ විජයපුදුර රජ කිරිණ සේනාධිපති රජ මහනුඤ්ඤරසන් විසිනුත් ඒ සේනාධිපතිගෙන් නිජතවූ හළුවක නලමේ කරන අමාත්‍ය පුතනුසන්තිසිත්තා විජය ශ්‍රී හපතවූ උතුමා දේව ආමිදුරුවා නම්වන සේට ගලකරසිති නැගේදී චේරගල සහ මෙහි දැනට වසන සේට පුළු දිසාහා ගසෙන් ගුරුගොඩ බැඳීමෙන් මෙ පිටත් දකුණු දිසාහා ගසෙන් සකිත මැලවෙල මාමියෙන් හැඟෝගම වෙල්වැටි න් මෙ පිටත් පවිත්‍ර දිසාහා ගසෙන් චේරගල ලෝකාභේතිසිංහාම බැඳීමෙන් මෙ පිටත් උතුරු දිසාහා ගසෙන් වදුරු සස්වැටීමෙන් පලෙල්ගිරිබාවේ දිසාහිල්ලේට බවින් මෙ පිටත් මෙ කිසාපුසකර මාභුල්කෝරලේ මැදිවුගොඩ මඩ සෙවන හා කොල ආදී සියලුම මෙහි බුබු පුජාව පවත්වන ගිරිබාවේ ධම්මරකඩික උත්තාගෙයන් සිසානු සි සා පරම්පරාවට සිටු පසස ප්‍රයෝජන පිදිනා රහට සසිබන්ඩ නම් ශ්‍රී වඩින ප්‍රවරයෙහි රජ ශ්‍රී පදප්‍රාප්ත තෝරේ බල සම්පන්න ගෙන කුන රත්නාලංකිතවූ උතුම් පුබුදෙස දේසානු ග න සසෝ රෝපස් පනල ක්‍රිතතී ශ්‍රී රජ සිංහ දෙව් මහ රජෝත්තමයා නම්වන සේ දෙව්පු පි ලාසයෙන් වැඩ සිට බොධිසත්‍ය වරිනානු කුලව පුජකල වදාල සේදින් මෙහි මතු ලොව පහල වනනාවූ රජ මහාමාත්‍යාදී කොසිනරම් කෙනෙකුන් විසින්වත් මිට අවුලක් උඩරනසක් නොකරමින් වඩ වඩා පුද පවත්වමින් සෙවීමේ මෝක්‍ෂ සම්පත් ලබන්ට උත්සහ කරන සේ ශ්‍රී ලන්කේස්සර උතුම් සෙදි වදාල පනති කිනනත්වා කඩිව පුජන්වා සදිවා එලත් බුබු බෝගේ නහින් දෙසා මහා පේකෝ හවිසානි.

B.

Śrī suddha Saka rāja varshayen ekvādahas hatsiya ekata pēmini yuga namvū me varusayehi Vesaga masa ava
 telesvaka nam tithiyalat Brahaspotindā mé davasehi Māngul Kóralé bada Mēḍapattuvé Mfoyen me
 goḍa Giribávė Vėragala Vihāraya yana mehi pudaólakkam pavatvana pinisa Giribávė Vanni Mudiyańsé Dh
 ammarakkhita blikshúnvinisnut Puttalama Munássarama A'naolondáva ētuluva Sat Kóralé Maha Disáva
 há Maha Adikáran karaṇa Piḷuma Talavuvé Vijayasundara Rájakiraṇa Sėnádhipati Rája Mantrisvarayan
 visinut é Sėnádhipatīngen nijátavú Haluwaḍana talamėkarana amátya puttrayanvisinut Vijaya Śrī bhajanavú
 utumá déva svámidaruvánamvahanśéṭa śalakara siṭi tēnédi Vėragala yana mehi Dágapvahanśéṭa púrva disábhá
 gayen Gurugoda Bėumen me piṭat dakunu disábhágayen Yakta Mėlavela Mámiyen Hėgógama Velvėṭi
 n me piṭat pachchima disábhágayen Vėragala Lókábhėṭṭigoma Bėumen me piṭat uturu disá bhāgayen Vadurē
 ssé vėven pallé Giribávė diyagilmé galṭēben me piṭat me kiyaṭu safara máimen meḍivú goḍamaḍa sevanabhá
 kola ádi siyallama mehi Buddha pújáva pavatvamin Giribávė Dhammarakkhita Unnánshėgé sisyańu si
 sya paramparávaṭa sivu pasaya prayójana vidínaragaṭa Sayikhańḍa nam Śrivaradhana pravarayehi rájja śrī
 padapprápta téjő bala sampanna naikaguna ratnálapkrítavu utum suvadésa desáńu ga
 ta yasó téjas patala Kírtti Śrī Rája Sigha devi maha rájóttańamayanmahanśé devėndra vi
 lásayen vėḍasiṭa Bódhisatva charitáńu kúlańa pújákala vadála sédin mehi matu lova
 pahala vannańú rāja mahámátiyádi koyitaram kenekunvisinvat míta avulak
 uddharanayak nokaramin vaḍa vaḍá puda pavatvamin swarga móksha sampat labanta
 utsaha karanasé Śrī Lankésvara utum yedí vadála panatayi. Tinnaná yadivá
 kaṭṭhan pupphanvá yadivá phalan Buddha bóge nahin deyaya mahá pétó bhavissati.

C.

“ On this Thursday, the 13th day after the full moon of the month Vesak in the year 1701 of the correct Saka era.

“ For the purpose of performing the religious rites and ceremonies in the Véragala Viháré of Giribáva on this side of Mí-oya in the Mēdapattu of Magul Kóralé.

“ This being suggested to the victorious, prosperous, and paramount Sovereign Lord by the Vanni Mudaliyár of Giribáva, by the Priest Dhammarakkhita, and by Pilimalavvé Vijayasundara Rájakirāṇa Sēnádhipati Rája Mantrí who performs the offices of Mahá Adigár and Mahá Disáva of the Seven Kóralés including Puttalam, Munéssaram, and A’naiviḷuntán, and by the minister’s son who performs the duties of Haḷuwaḍana Nilamé, the son of the said Sēnádhipati.

“ This being suggested, the Supreme Lord of Laṅká Kírti Śrī Rája Siṅha, who ascended the throne of the illustrious city Śrívardhana called Sayikhanda, who is endowed with glory and power, is adorned with gems of virtue, and who has extended his fame and glory throughout his own great kingdom and (foreign) countries, seated himself like the god Sakra, and, in conformity with the life of Bódhisatva, offered all the houses, trees, high lands and low lands, situated within these four limits, viz., this side of Gurugoḍa Bévuma on the East of the Véragala Dágoba (relic-repository), this side of of Yakta Mēlavela Mámiya and Hegógama Velvēṭiya, this side of Véragala on the South, Lókáhetṭigama Bévuma on the West, and this side of the tank of Vaduressa and the stone post of the water reservoir of Giribáva on the North, to be possessed for the sake of the four priestly requisites by the disciples of Dhamma-rakkhita Unnánsé of Giribáva, and their successors, on condition of performing the Buddhist ceremonies.

“ May the Kings, Ministers, and other persons who come into this world hereafter, without disturbing or encroaching, endeavour to obtain the bliss of heaven and release, by increasing the offerings more and more.

“ Should any one dispossess (the Priests) of grass, timber, flowers or fruit which belong to the Buddha* he will be born a great *prétá*.”†]

* Reading සොහරෙ බුඩි කොගස for බුඩබෝගේ නිතින්දෙස.

† A disembodied spirit suffering misery.

CATALOGUE OF CEYLON BIRDS.

BY E. F. KELAART, M.D. Edin., F.L.S., F.G.S., &c., AND
EDGAR L. LAYARD, C.M.E.S., &c.

ORDER: ACCIPITRES.

SUB-ORDER: ACCIPITRES DIURNI.

Fam.: Falconidæ.

a.—AQUILINÆ.

Aquila Bonelli, <i>Temm.</i>	The Genoese Eagle.
Aquila pennata, <i>Gmel.</i>	The Pennated Eagle.
Spizaetus Nipalensis, <i>Blyth.</i>	The Beautiful Crested Eagle.
Spizaetus limnaetus, <i>Horsf.</i>	The Crested Eagle.
Ictinaetus Malayensis, <i>Temm.</i>	The Black Eagle.
Hæmatornis Cheela, <i>Latham.</i>	The Cheela Eagle.
Hæmatornis spilogaster, <i>Blyth.</i>	The Ceylon Eagle.
Pontoaetus leucogaster, <i>Gmel.</i>	White-bellied Sea Eagle.
Pontoaetus ichthyaetus.	
Haliastur Indus, <i>Bodd.</i>	Siva's Kite.

b.—FALCONINÆ.

Falco peregrinus, <i>Linn.</i>	The Peregrine Falcon.
Tinnunculus alaudarius, <i>Briss.</i>	The Kestrel Falcon.
Hypotriorchis chicquera, <i>Shaw.</i>	The Rufus-headed Falcon.

c.—MILVINÆ.

Baza lophotes, <i>Temm.</i>	The Cohy Falcon.
Milvus Govinda, <i>Sykes.</i>	The Cheela or Govinda Kite.
Elanus melanopterus, <i>Daud.</i>	The Black-winged Falcon.

d.—ACCIPITRINÆ.

Astur trivirgatus, <i>Temm.</i>	The Three-streaked Kestrel.
Accipiter badius, <i>Gmel.</i>	Brown's Sparrow Hawk.
Accipiter nisus, <i>Linn.</i>	The Sparrow Hawk.

e.—CIRCINÆ.

- Circus Swainsonii, *A. Smith.* The Pale Harrier.
 Circus cinerascens, *Montague.* The Ashy Falcon.
 Circus melanoleucos, *Penn.* The Black and White Falcon.

SUB-ORDER : ACCIPITRES NOCTURNI.

Fam. : Strigidæ.*a.*—SURNINÆ.

- Athene castanotus, *Blyth.* The Ceylon Chesnut-winged Owl.
 Athene scutellata, *Gray.* The Hairy Owl.

b.—BUBONINÆ.

- Ephialtes scops, *Linn.* The Scops-eared Owl.
 Ephialtes sunia, *Hodgson.* The Reddish Owl.
 Ephialtes lempigii, *Horsf.* The Lempigi Owl.
 Ketupa Ceylonensis, *Gmel.* The Ceylon Eared Owl.

c.—SYRNINÆ.

- Syrnium Indrani, *Gray.* The Ulamá Owl.

d.—STRIGINÆ.

- Strix Javanica, *Gmel.* The Indian Barn Owl.

ORDER: PASSERES.

SUB-ORDER I. : FISSIROSTRES.

A. F. NOCTURNI.

Fam. : Caprimulgidæ.*a.*—STEATORNINÆ.

- Batrachostomus moniliger, *Layard.* The Ceylon Oil Bird.

b.—CAPRIMULGINÆ.

- Caprimulgus Maharattensis, *Sykes* The Maharatta Goatsucker.
 Caprimulgus Kelaarti, *Blyth.* The Nuwara Eliya Goatsucker.
 Caprimulgus Asiaticus, *Latham.* The Indian Goatsucker.

B. F. DIURNI.

Fam. : Hirundinidæ.*a.*—CYPSELINÆ.

- Cypselus Balasiensis, *Gray.* The common Palm Swift.
 Cypselus melba, *Linn.* The common Large Swift.

- Cypselus affinis*, *Gray*. The Blackish Swift.
Macropteryx coronatus, *Tickell*. The Crested Swift.
Collocalia brevirostris, *McClellan*. The Edible-nest Swallow.
Acanthylis caudacuta, *Lath*. The Spiny-tailed Swallow.

b.—HIRUNDININÆ.

- Hirundo gutturalis*, *Scop*. The common Indian Swallow.
Hirundo hyperythra, *Layard*. The Red-bellied Swallow.
Hirundo domicola, *Jerdon*. The Bungalow Swallow.
Hirundo daurica, *Linn*.

Fam.: *Coraciadæ*.

a.—CORACIANÆ.

- Coracias Indica*, *Linn*. The Indian Roller.
Eurystomus Orientalis, *Linn*.

Fam.: *Trogonidæ*.

- Harpactes fasciatus*, *Lath*.? The Fasciated Trogon.

Fam.: *Alcedonidæ*.

a.—HALCYONINÆ.

- Halcyon Capensis*, *Linn*. The Cape King-fisher.
Halcyon Smyrnensis, *Linn*. The Smyrna King-fisher
Halcyon atricapillus, *Lath*.
Ceyx tridactyla *Linn*. The pretty Dwarf King-fisher

b.—ALCEDONINÆ.

- Alcedo Bengalensis*, *Gmel*. The Indian King-fisher,
Ceryle rudis, *Linn*. The Black and White King-fisher

Fam.: *Meropidæ*.

a.—MEROPINÆ.

- Merops Philippinus*, *Linn*. The Philippine Bee Eater
Merops viridis, *Linn*. The Indian Bee Eater.
Merops quinticolor, *Keill*. The Five-coloured Bee Eater

SUB-ORDER II. TENUIROSTRES.

Fam.: *Upipidæ*.

a.—UPUPINÆ.

- Upupa Senegalensis*, *Swain*. The Hoopoo.

*Fam. : Promeropidæ.**a.—PROMEROPINÆ.*

Nectarina Zeylanica, <i>Linn.</i>	The Ceylon Sunbird.
Nectarina minima, <i>Sykes.</i>	The smaller Sunbird.
Nectarina Maharattensis, <i>Lath.</i>	The short-billed purple Honeybird.
Nectarina Lotenia, <i>Linn.</i>	The long-billed Honeybird.
Dicæum Tickelli, <i>Blyth.</i>	Tickell's Honeybird.

*Fam. : Meliphagidæ.**a.—MELIPHAGINÆ.*

Phyllornis Malabarica, <i>Lath.</i>	Malabar Honey Eater.
Phyllornis aurifrons, <i>Temm ?</i>	Green Honey Eater.
Phyllornis Jerdoni, <i>Blyth.</i>	Jerdon's Honey Eater,

*Fam. : Certhiadæ.**a.—SITTINÆ.*

Dendrophila frontalis, <i>Horsf.</i>	Blue Nuthatch or Creeper.
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SUB-ORDER III. DENTIROSTRES.

*Fam. : Lusciniidæ.**a.—MALURINÆ.*

Orthotomus longicauda, <i>Gmel.</i>	The rufous-headed Tailorbird.
Cisticola cursitans, <i>Blyth.</i>	The Grass Warbler.
Cisticola omalura, <i>Blyth.</i>	The mountain Grass Warbler.
Drymoica valida, <i>Blyth.</i>	Layard's Grass Warbler.
Drymoica inornata, <i>Sykes.</i>	
Prinia socialis, <i>Sykes.</i>	

b.—LUSCININÆ.

Acrocephalus dumetorum, <i>Blyth.</i>	The mountain Marsh Warbler.
Phyllopneuste nitidus, <i>Blyth.</i>	
Phyllopneuste montanus, <i>Blyth.</i>	
Phyllopneuste viridanus, <i>Blyth.</i>	

[List continued in next Number.]

5 FEB 1887



NOTICE.

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* * * Communications intended for publication in the Journal must be forwarded to the Secretary at least a fortnight before the assembly of the General Meeting at which they are to be submitted.

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CONTENTS:

Catalogue of Ceylon Birds. By E. F. Kelaart, Esq., M. D., and Edgar L. Layard, Esq. (<i>concluded.</i>)	57
Notes on some of the Forms of Salutation and Address known among the Sinhalese. By the Hon. Mr. Justice Starke	67
Rock Inscriptions. By A. O. Brodie, Esq.	81
On the Veddahs of Bintenne. By the Rev. J. Gillings	83
Rock Inscription at Piramanenkandel. By S. C. Chitty, Esq.	90
Analysis of the great Historical Poem of the Moors entitled Seerah. By S. C. Chitty, Esq.—(<i>to be continued.</i>)	ib.

APPENDIX:

Proceedings of Meetings	i—lxii.
-------------------------	---------

* * Communications may be sent to the Secretary, under cover to the Hon'ble the Colonial Secretary.

†† Parties desirous of having the Journal transmitted to them by Tappal, bearing Postage, or otherwise, will have the goodness to intimate their wishes to the Secretary.

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MDCCCLIII.

SUB-ORDER II. TENUIROSTRES.

FAM: UPUPIDÆ.

a. UPUPINÆ.

Upupa Senegalensis, Swain. The Hoopoo.

FAM: PROMEROPIDÆ.

a. PROMEROPINÆ.

Nectarina Zeylonica, Linn. The Ceylon Sunbird.
Nectarina minima, Sykes. The smaller Sunbird.
Nectarina Maharattensis, Lath. The short-billed purple Honeybird.
Nectarina Lotenia, Linn. The long-billed Honeybird.
Dicaeum Tickelli, Blyth. Tickel's Honeybird.

FAM: MELIPHAGIDÆ.

a. MELIPHAGINÆ.

Phyllornis Malabarica, Lath. Malabar Honey Eater.
Phyllornis aurifrons, Temm? Green Honey Eater.
Phyllornis Jerdoni, Blyth. Jerdon's Honey Eater.

FAM: CERTHIADÆ.

a. SITTINÆ.

Dendrophila frontalis, Horsf. Blue Nuthatch or Creeper.

SUB-ORDER III. DENTIROSTRES.

FAM: LUSCINIDÆ.

a. MALURINÆ.

Orthotomus longicauda, Gmel. The rufous-headed Tailorbird.
Cisticola cursitans, Blyth. The Grass Warbler.
Cisticola omalura, Blyth. The mountain Grass Warbler.
Drymoica valida, Blyth. Layard's Grass Warbler.
Drymoica inornata, Sykes.
Prinia socialis, Sykes.

b. LUSCININÆ.

Acrocephalus dumetorum, Blyth. The mountain marsh Warbler.
Phyllopneuste nitidus, Blyth.
Phyllopneuste montanus, Blyth.
Phyllopneuste viridanus, Blyth.

c. ERYTHACINÆ.

Copsychus saularis, Linn. The Dialbird.
Copsychus,———?
Copsychus macrourus, Gmel. The long-tailed Thrush.
Pratincola caprata, Blyth. The Meadowchat.

<i>Pratincola atrata</i> , <i>Kelaart</i> .	The black do. or Newera Ellia Robin.
<i>Calliope cyana</i> , <i>Hodgs.</i>	
<i>Thamnobia fulcata</i> , <i>Linn.</i>	The sooty Warbler.
<i>Cyanecula suecica</i> , <i>Linn.</i>	
<i>Sylvia affinis</i> , <i>Blyth.</i>	

d. PARINÆ.

<i>Parus cinereus</i> , <i>Vieill.</i>	The ashy Tomtit, or Titmouse.
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e. MNIOTILTINÆ.

<i>Zosterops palpebrosus</i> , <i>Temm.</i>	The white-eyed Bushcreeper.
<i>Zosterops annulosus</i> , <i>Swain.</i>	The mountain Bushcreeper.
<i>Iora Zeylanica</i> , <i>Gmel.</i>	Ceylon Bushcreeper.
<i>Iora typhia</i> , <i>Linn.</i>	The green Bushcreeper.

f. MOTACILLINÆ.

<i>Motacilla boarula</i> , <i>Linn.</i>	The grey Wagtail.
<i>Motacilla Indica</i> .	The Indian Wagtail.
<i>Budytes (Enicurus) viridis</i> , <i>Blyth.</i>	The green Wagtail.
<i>Corydalla (Anthus) Richardi</i> , <i>Blyth.</i>	Richard's Pipit.
<i>Corydalla rufula</i> , <i>Vieill.</i>	The rufous Pipit.
<i>Corydalla striolata</i> , <i>Blyth.</i>	The mountain Pipit.

FAM: TURDIDÆ.

a. FORMACARINÆ.

<i>Brachypteryx Palliseri</i> , <i>Kelaart.</i>	Palliser's Ant-thrush.
<i>Drymocaptes fuscicapillus</i> , <i>Blyth.</i>	
<i>Alcippe nigrifrons</i> , <i>Blyth.</i>	The mountain Thrush.
<i>Pitta brachyura</i> , <i>Jerdon.</i>	The short-tailed Pitta.

b. TURDINÆ.

<i>Oreocincla spiloptera</i> , <i>Blyth.</i>	Thrush.
<i>Merula Wardii</i> , <i>Jerdon.</i>	Ward's Thrush.
<i>Merula Kinnisii</i> , <i>Kelaart.</i>	The Newera Ellia Blackbird.

c. TIMALINÆ.

<i>Garrulax cinereifrons</i> , <i>Blyth.</i>	Ashy-headed Garrulax.
<i>Pomatorhinus melanurus</i> , <i>Blyth.</i>	The Ceylon Pomatorrhinus.
<i>Malacocercus griseus</i> , <i>Gmel.</i>	The "Seven Brothers" or dungthrush.
<i>Malacocercus rufescens</i> , <i>Blyth.</i>	The reddish—do.
<i>Malacocercus striatus</i> , <i>Swains.</i>	The mountain—do.
<i>Dumetia albogularis</i> , <i>Blyth.</i>	
<i>Chrysomma sinense</i> , <i>Lath.</i>	

d. ORIOLINÆ.

<i>Oriolus melanocephalus</i> , <i>Linn.</i>	The black-headed Oriole.
<i>Oriolus Kundoo</i> ? <i>Sykes.</i>	The golden Oriole.
<i>Oriolus Indicus</i> , <i>Bris.</i>	

e. PYCNONOTINÆ.

Criniger Ictericus, <i>Strickland</i> .	The ashy Bulbul.
Pycnonotus penicillatus, <i>Kelaart</i> .	Yellow-eared Bulbul.
Pycnonotus flavirictus, <i>Strickland</i> .	Bulbul.
Pycnonotus hæmorrhous, <i>Gmel?</i>	The <i>Condatchee</i> Bulbul.
Pycnonotus atricapillus, <i>Vieill</i> .	The black-headed Bulbul.
Niltava rubeculoides, <i>Hodgs.</i>	
Hemipus picatus, <i>Horsf.</i>	The black and white Hemipus.
Rubigula gularis, <i>Gould?</i>	
Hypsipetes Nilgherriensis, <i>Jerdon</i> .	Nielgherry Hypsipetes.

FAM: MUSCICAPIDÆ.

f. MUSCICAPINÆ.

Cryptolopha cinereo-capilla, <i>Blyth</i> .	The grey-headed Flycatcher.
Leucocerca compressirostris, <i>Blyth</i> .	
Myiagra cœrulea, <i>Vieill</i> .	
Tchitrea paradisi, <i>Linn.</i>	The paradise Flycatcher.
Butalis latirostris, <i>Brie.</i>	The Flycatcher.
Butalis———?	
Stoporala melanops, <i>Blyth</i> .	The blueish Flycatcher.

FAM: AMPELIDÆ.

a. CAMPEPHAGINÆ.

Pericrocotus flammeus, <i>Forster</i> .	The elegant red Flycatcher.
Pericrocotus peregrinus, <i>Linn.</i>	The smaller Do.
Campephaga Macei, <i>Linn.</i>	Mace's Caterpillar Ca'tcher.
Campephaga Sykesi, <i>Strick.</i>	

b. DICRURINÆ.

Artamus leucorhynchos? <i>Gmel.</i>	The Shrike.
Artamus fuscus, <i>Vieill.</i>	Rufous-bellied Shrike.
Edolius Malabaricus, <i>Scop.</i>	King Crow.
Edolius retifer, <i>Temm.</i>	The crested King-crow.
Dicrurus cœrulescens, <i>Linn.</i>	
Dicrurus edoliformis, <i>Blyth</i> .	
Dicrurus longicaudatus, <i>A. Hay.</i>	
Dicrurus leucopygialis, <i>Blyth</i> .	
Dicrurus macrocercus, <i>Vieill.</i>	
Irena puella, <i>Horsf.</i>	The blue Shrike.

FAM: LANIIDÆ.

a. LANIINÆ.

Lanius superciliosus, Linn.

Lanius erythronotus, Vigors.

Tephrodornis affinis, Blyth.

Grey-backed Shrike

Butcher-bird.

SUB-ORDER IV. CONIROSTRES.

FAM: CORVIDÆ.

a. GARRULINÆ.

Cissa puella, Blyth & Layard.

The mountain Jay.

b. CORVINÆ.

Corvus splendens, Vieill.

Corvus culminatus, Sykes.

The Indian hooded Crow

The common carrion Crow.

FAM: STURNIDÆ.

a. GRACULINÆ.

Gracula religiosa, Linn.

Gracula ptilogenys, Blyth.

The Brahmin Maynah.

Dr. Templeton's Maynah.

b. STURNINÆ.

Pastor roseus, Linn.

Hetærorornis pagodarum, Gmel.?

Hetærorornis Malabarica, Gmel.?

Hetærorornis cristatella, Linn.

Acridotheres tristis, Linn.

The rose-coloured Starling.

The pagoda Starling.

The Malabar Starling.

The sub-crested Maynah.

Paradise Grakle, Maynah.

FAM: FRINGILLIDÆ.

a. PLOCEINÆ.

Ploceus Bengalensis, Linn.

Ploceus Philippensis, Linn.

Ploceus Manyar, Horsf.

The Indian Weaverbird.

The Phillippine Weaverbird.

b. FRINGILLINÆ.

Amadina undulata, Lath.

Amadina Malabarica, Linn.

Amadina Malacca, Linn.

Amadina rubronigra, Hodgs.

Amadina striatus? Linn.

Amadina pectoralis? Jerdon.

Passer Indicus, Jard. & Selby.

The reddish Indian Finch.

The Malabar Finch.

The Malacca Finch.

The striated Finch.

The Newera-Ellia Finch.

The Indian Sparrow.

c. EMBERIZINÆ.

Emberiza? Scop.

Bunting.

d. ALAUDINÆ.

<i>Alauda Malabarica</i> , Scop.	The Indian Lark.
<i>Alauda gulgula</i> ? Scop.	The crested Lark.
<i>Pyrrhulauda grisea</i> , Scop.	The Indian Pyrrhulauda.
<i>Mirafra affinis</i> , Jerdon.	

e. LOXINÆ.

<i>Loxia</i> , Sp.	Crossbill.
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FAM: BUCEROTIDÆ.

a. BUCEROTINÆ.

<i>Buceros gingalensis</i> , Shaw.	The small Hornbill.
<i>Buceros violaceus</i> , Wagler. apud } Blyth.	The large Hornbill.
<i>Buceros pica</i> , Scop.?	The black and white Hornbill.

ORDER SCANSORES.

FAM: PSITTACIDÆ.

a. PSITTACINÆ.

<i>Loriculus Asiaticus</i> , Edwards.	The small Ceylon Parakeet.
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b. PEZOPORINÆ.

<i>Palæornis Alexandri</i> , Linn.	The Alexandrine Parakeet.
<i>Palæornis torquatus</i> , Briss.	The rose collared Parakeet.
<i>Palæornis cyanocephalus</i> , Gmel.	The ashy-headed Parakeet.
<i>Palæornis Calthropæ</i> , Layard.	Layard's purple-headed Parakeet.

FAM: PICIDÆ.

a. CAPITONINÆ.

<i>Megalaima Philippensis</i> , Briss.	The large red-headed Barbet.
<i>Megalaima Zeylanica</i> , apud Blyth.	The large Barbet.
<i>Megalaima flavifrons</i> , Cuv.	The yellow-headed Barbet.
<i>Megalaima rubricapilla</i> , Gmel.	The small red-headed Barbet.

b. PICINÆ.

<i>Picus gymnophthalmos</i> , Blyth.	Layard's Wood-pecker.
<i>Picus Macei</i> , Vieill.	Small spotted Wood-pecker.
<i>Picus Maharattensis</i> , Lath.	

c. GECININÆ.

<i>Gecinus chlorophanes</i> , Blyth.	The green red-headed Wood-pecker.
<i>Brachypternus aurantius</i> , Blyth.	The orange-coloured Wood-pecker.
<i>Brachypternus Ceylonus</i> , Forster.	Ceylon Wood-pecker.
<i>Brachypternus rubescens</i> , Vieill.	The reddish Wood-pecker.

d. COLAPTINÆ.

Micropternus gularis, *Blyth*. Ground Wood-pecker.

FAM: CUCULIDÆ.

a. COCCYZINÆ.

Centropus Philippensis, *Cuv*. The Philippine Ground Cuckoo.
Centropus chlororhynchos, *Blyth*. The yellow-billed Cuckow.

b. CUCULINÆ.

Oxylophus melanoleucos, *Gmel*. The crested black Cuckow.
Oxylophus Coromandus, *Linn*. The collared crested Cuckow.
Endynamys Orientalis, *Linn*. The Eastern black Cuckow.
Cuculus micropterus, *Gould*. The ashy mountain Cuckow.
Cuculus tenuirostris, *Blyth*. The narrow-billed Cuckow.
Cuculus Sonnerattii, *Lath*. Sonnerat's Cuckow.
Cuculus varius, *Vahl*.
Cuculus canorus, *Linn*.
C. (surniculus) dicruoides, *Hodgs*.
C. (chrysococcyx) xanthorhynchos *Horsf*.

c. CROTOPHAGINÆ.

Phœnicophaus pyrrhocephalus, *Forster*. The Malkoha.
Zanclostomus viridirostris, *Jerd*. The green-billed Malkoha.

ORDER COLUMBÆ.

FAM: COLUMBIDÆ.

a. TRERONINÆ.

Treron bicincta, *Blyth*. The Parrot Pigeon.
Treron Malabarica, *Jerdon*. The common green Pigeon.
Treron chlorigaster, *Blyth*. The large green Pigeon.

b. COLUMBINÆ.

Alsocomus Puniceus, *Tick*.
Carpophaga sylvatica, *Tickel*. The Wood Pigeon.
Carpophaga (Palumbus) Torringtonii, *Kelaart*. Lady Torrington's Pigeon.

C. ELPHINSTONEI, var, apud *Blyth*.

Columba intermedia, *Strickland*. The Indian Rock Pigeon.
Turtur risorius, *Selby*. The collared Turtle Dove.
Turtur suratensis, *Gmel*. The speckled Turtle Dove.
Turtur humilis, *Temm*. The dwarf Turtle Dove.
Turtur orientalis, *Lath*.

c. GOURINÆ.

Chalcophaps Indica, *Linn*. The Ground Pigeon.

ORDER GALLINÆ.

FAM: PHASIANIDÆ.

a. PAVONINÆ.

Pavo cristatus, *Linn.* The Peacock.

b. GALLINÆ.

Gallus Lafeyettei, *Lesson.*
G. Stanleyi, *Gray*, female, apud *Blyth.* } The Ceylon Jungle Fowl.

FAM: TETRAONIDÆ.

a. PERDICINÆ.

[of Ceylon.]

Gallo-perdix bicalcaratus, *Linn.*, apud *Blyth.* The double-spurred Partridge

Francolinus Ponticerrianus, *Gmel.* The Pondicherry Partridge.

Perdicula argoondah, *Sykes.* The Indian Quail.

Coturnix Coromandelica, *Gmel.*

Coturnix Chinensis, *Linn.*

Turnix ocellatus, *Scops.*

Turnix ocellatus, var *Taigoor*, *Sykes.*

ORDER GRALLÆ.

FAM: CHARADRIDÆ.

a. ÆDICNERINÆ.

Esacus recurvirostris, *Cuv.* The curved-bill Bustard.

Ædicnemus crepitans, *Linn.*

b. CURSORINÆ.

Cursorius Coromandelicus, *Gmel.* The Coromandel Courser.

c. GLAREOLINÆ.

Glareola Orientalis, *Leach.* The Indian Pratincole.

d. CHARADRIINÆ.

Charadrius virginicus, *Bech.* The Marbled Plover.

Lobivanellus Goensis, *Strickland.* The Goa Sand Piper.

L. (sarciophorus) bilobus, *Gmel.*

Hiaticula Philippensis, *Latham.* Small Plover.

Hiaticula Leschenaultei, *Lesson.* Do.

Hiaticula Cantiana, *Lath.*

e. CINCLINÆ.

Cinclus interpres, *Linn.* The Turnstone.

FAM: ARDEIDÆ.

a. ARDEINÆ.

Ardea cinerea, *Linn.* The common Heron.

Ardea purpurea, *Linn.* The purple Heron.

Ardea asha, *Sykes*.

Ardea intermedia, *Wagler*.

Ardea garzetta, *Linn*.

Ardeola leucoptera, *Bodd*.

The paddy-field Heron.

Ardeola bubulcus, *Savign*.

The Caboga Heron.

Herodias alba, *Linn*.

The great white Heron.

Ardetta cinnamomea, *Gmel*.

The cinnamon Heron.

Ardetta flavicollis, *Lath*.

Ardetta thalassina? *Swains*.

Ardetta sinensis, *Gmel*.

Platalea leucorodia, *Linn*.

The white Spoonbill.

Nycticorax griseus, *Linn*.

Tigrisoma melanolopha, *Raffles*.

Butorides Javanica, *Horsf*.

b. CICONINÆ.

Mycteria australis, *Lath*.

Leptoptilus Javanica, *Lath*.

The Adjutant.

Ciconia leucocephala, *Temm*.

The large Stork.

Dromas ardeola, *Payk*.

The smaller Stork.

Anastomus oscitans.

The Anastomus.

c. TANTALINÆ.

Tantalus leucocephalus, *Forster*.

The white-headed Ibis.

Geronticus melanocephalus, *Lath*.

The black-headed Ibis.

Ibis Falcinellus, *Linn*.

The glossy Ibis.

FAM: SCOLOPACIDÆ.

a. LIMOSINÆ.

Numenius phaeopus, *Lath*.

The Whimbrel.

Numenius arquatus, *Lath*.

The Curlew.

b. TOTANINÆ.

Totanus fuscus, *Linn*.

Totanus ochropus, *Linn*.

The green Shank.

Totanus calidris, *Linn*.

Totanus hypoleucos, *Linn*.

The common long Shank.

Totanus glottoides, *Vigors*.

The Indian green Shank.

Actitis glareola, *Gmel*.

Limosa ægocephala, *Linn*.

c. TRINGINÆ.

Tringa minuta? *Temm*.

The dwarf Sand-piper.

Tringa subarquata, *Gmel*.

Limicola platyrhyncha, *Temm*.

The broad-billed Limicola.

d. RECURVIROSTRINÆ.

Himantopus candidus, *Bonn*.

The long-legged Avocet.

Recurvirostris avocetta, *Linn*.

Hæmatopus ostralegus, *Linn*.

c. SCOLOPACINÆ.

- | | |
|---|---------------------------|
| Rhynchoea Bengalensis, <i>Gmel.</i> | The painted Snipe. |
| * Scolopax rusticola, <i>Linn.</i> | The Wood-cock. |
| Gallinago stenura, <i>Temm.</i> | Horsfield's Indian Snipe. |
| * Gallinago scolopacinus, <i>Bonaparte.</i> | The common Snipe. |
| * Gallinago gallinula, <i>Linn.</i> | The Jack Snipe. |

N.B.—We have only sportsmen's authority for the species of Snipes marked with an asterisk.

FAM: PALMEDEIDÆ.

PARRINÆ.

- Hydrophasianus Sinensis, *Wagler.* The Screamer, or Jacana.

FAM: RALLIDÆ.

a. RALLINÆ.

- | | |
|--------------------------------------|------------------------|
| Ortygometra rubiginosa, <i>Temm.</i> | The red or brown Rail. |
| Corethrura Zeylanica, <i>Brown.</i> | The Ceylon Rail. |
| Rallus striatus, <i>Linn.</i> | |
| Rallus indicus, <i>Blyth.</i> | |
| Porzana pygmæa, <i>Nan.</i> | |

b. GALLINULINÆ.

- | | |
|---------------------------------------|---------------------------|
| Gallinula phœnicura, <i>Pennant.</i> | The red-tailed Gallinule. |
| Gallinula cristata, <i>Lath.</i> | The crested Gallinule. |
| Gallinula chloropus, <i>Linn.</i> | |
| Porphyrio poliocephalus, <i>Lath.</i> | |

ORDER ANSERES.

FAM: ANATIDÆ.

a. PHENICOPTERINÆ.

- | | |
|-----------------------------------|---------------|
| Phœnicopterus ruber? <i>Linn.</i> | The Flamingo. |
|-----------------------------------|---------------|

b. PLECTROPTERINÆ.

- | | |
|-----------------------------------|-----------------|
| Sarkidiornis Regia, <i>Eyton.</i> | The Royal Duck. |
|-----------------------------------|-----------------|

c. ANSERINÆ.

- | | |
|--|----------------------|
| Nettapus Coromandelianus, <i>Gmel?</i> | The Coromandel Teal. |
|--|----------------------|

d. ANATINÆ.

- | | |
|-------------------------------------|----------------------|
| Mareca Penelope, <i>Linn.?</i> | The Widgeon. |
| Anas pœciloryncha, <i>Lath.</i> | The spotted Duck. |
| Dendrocygna arcuata, <i>Swains.</i> | The whistling Duck. |
| Dafila acuta? <i>Bonap.</i> | The pin-tailed Duck. |
| Querquedula crecca, <i>Steph.</i> | The common Teal. |
| Querquedula circia, <i>Linn.</i> | |
| Fuligula rufina, <i>Pallas.</i> | |
| Spatula clypeata, <i>Linn.</i> | |

FAM: COLYMBIDÆ.

PODICEPINÆ.

Podiceps minor, *Latham*.

The little Grebe.

FAM: LARIDÆ.

a. LARINÆ.

Xema bruneicephalus, *Jerdon*.

The Indian hooded Gull.

Larus ichthyæetus, *Pallas*.

b. STERNINÆ.

Sylochelidon Caspia, *Pall*.

The Caspian Tern.

Sylochelidon seena, *Sykes*.

The orange-billed Tern.

Hydrochelidon Indica, *Steph*.Gelochelidon Anglica, *Brown*.

The gull-billed Tern.

Onychoprion anasthætus, *Scop*.Sterna melanogaster, *Temm*.

The black-bellied Tern.

Sterna Javanica, *Horsf*.Sterna minuta, *Linn*.

Sterna ——— ?

Thalasseus cristatus, *Steph*.Thalasseus Bengalensis, *Lesson*.

Tachepetes aquila?

FAM: PELICANIDÆ.

a. PLOTINÆ.

Plotus melanogaster, *Gmel*.

The black-bellied Darter.

b. PELICANINÆ.

Pelicanus Philippensis, *Gmel*.

The Indian Pelican.

Graculus Sinensis, *Shaw*.Graculus pygmeus, *Pallas*.

Notes on some of the Forms of Salutation and Address known among the Singhalese. By the Hon. Mr. JUSTICE STARKE.

THE Singhalese have a great variety of forms of expression in address, to indicate the respect or otherwise, which they wish to shew to the individual; as, in their language itself, there are words and phrases appropriated to particular classes of the people.

For a considerable proportion of those various forms of expression, the fundamental terms of address are,

තෙ (to) and තමා (tamá) (from the old root *ta*, thou,*) terms, however, which by themselves, without any honorific as it is called, or affix of respect, are considered properly given to inferiors only; and the term *තෙ* (to) is now so associated with such inferiority, that if addressed to others it expresses the greatest contempt. Chater says that “in books it conveys no idea of disrespect,” Gram. p. 39; and in the *Sidath Sangarawa* it is given with the examples of verbs in the second person: but so early as Ruell’s time, the term was not used except to slaves and low caste people.

තමා (tamá) is thou! or you! but *තෙ* (to) is you fellow! sirrah! you creature! or something lower and meaner, for which we have not in English a proper equivalent. Its force on the native mind probably depends on their tenaciousness of birth and condition, as connected with their peculiar notions of merit and demerit in a previous state of existence: sin or demerit, according to Budha, determining the course of a person’s existence, as a bullock draws along the carriage to which it is yoked.

We have something of an illustration of this in the anecdote of the countryman and the king in disguise, when they met together in the jungle, how the countryman resented the king’s refusal to take food with him, thinking the king supposed he was a low caste man;† and the same sentiment

See the *Sidath Sangarawa* by Mr. Alwis, p. 22, and his observations at pages xlii., xlvii., 100, 154.

† See the *Attanagalu wanse*, *Sidath Sangarawa*, p. clxxxv.

is expressed in a more shocking form, when a native in his asseverations wishes he may be a low caste man or a demon in the next birth, if he is not to be believed.

Where a higher feeling is to be conveyed, some honorific or other is used, which honorifics are variously formed, and unite with each other and with the noun or pronoun in various ways.

තමුසේ (*tamusé*) *pers. pron.* You, may be addressed to an equal—it is a term of civility, Chater, p. 40, and is even regarded as “rather respectful,” Bridgnell’s Dictionary. It is used, according to Mr. Alwis, (Sidath Sangarawa, p. 158,) “by husbands towards their wives and *vice versa*; and also by some low caste people to the inferior classes of the Vel-lales; by Upasampada priests towards their pupils or Sāmanaras; and even by servants of a higher grade towards the young members of their master’s families.”

තමුන්නාහේ (*tamunnāhe*) is addressed to an equal or to a superior, but it is “the least of all the acknowledgments of superiority.” Lambrick, Gram. p. 25, note.

තමුන්නාන්සේ (*tamunnansé*), *pers. pron.* You, is higher; it is addressed to one perfectly equal and for whom we would express some respect. Bridgnell, after Clough, says it is “very respectful.” Mr. Alwis says, “it is used towards each other by persons of an equal station in life amongst the highest class of the Singhalese, and amongst the priesthood.” It may be like our “Learned Sir.”

තමුන්නාහේ (*tamun wahanse*) is still higher; it is addressed to a superior, and is expressive of the highest respect. It may be like our “Worthy Sir.”

Similar to this last is ඔබ්බහන්සේ (*oba wahanse*) which was the term used in the Lord’s prayer; as ඔබ්බහන්සේ ස්වරාජ්‍යයාටා *oba wahansege rajyaya éwā*, (Thy Kingdom come.) But now the term employed is නුබ්බහන්සේ (*nubawahanse*), a supposed derivative of the former.

And here it may be observed, that generally, in all communications from an inferior, as in communications to one

through a third person, leave to speak අවසර ලබනවා (*awasara labenawa*) to receive permission, must be expressed, Chater, p. 134. And so, in like manner, in approaching and withdrawing, there must be leave to come and leave to go.

වහන්සේ (*wahanse*) is added as an affix to the term for God, and to all the names of God; as also in some relative expressions, as to *Father* in the Lord's prayer, අපගේ පියානන් වහන්සේ *apage piyānan wahanse*.

But under the word දෙවියන් වහන්සේ (*Dewiyan wahanse*) Clough points out the difference in its use. Innumerable instances, he says, occur of the honorific being used in the vocative, in which case it may be addressed not only to one of these beings (the gods of Swarga), but also to a king, or any person of rank; but when used in the *nominative*, it marks at once the difference between a heathen god and the Supreme being.

Whatever may be in this, it is certain that the continual recurrence of the honorifics in the Singhalese translation of Holy Scripture, soon offends us; and in some cases, as *Jehovah wahanse*, the affix almost shocks, coming upon the ear like some discordance in an otherwise heavenly melody.

It were to be wished, therefore, that Christianity could be here attired in a garb more accordant with the simplicity and sincerity of its spirit.

The flatterers of king Dutugemini called him a god.—

ඉක්බිති පින් කිරියා වත් කියන්නෝ දුටුගැමිනි රජකවමනේ
Ikbeeti pin kiriya wat kiyanno Dutugemini rajahatamese
කිව්‍යා — දෙවියන් වහන්සේ අදහස්වා හුබවගන්නේ විසින්
kivya — Dewiyanwahansa adadakwa nubawahanse wisin
එකක් අඩු විහාර සියයක් කරවුයෙහි එකරවු විහාරවලින්
ekak adu wihara siyayak karawuseka ekarawu wiharawalin
මිරසැවිවිහාරයට

Mirisawetiwihearayata, &c.

Tupawanse, ap. Sidath Sangarawa, p. clxxv.

Then those whose duty it was to declare the meritorious acts (of Buddhism) done by King Dutugemini, said, Dewiyan

wahansa, many temples to Budha have been erected by thee, and the cost of them exceeds computation, &c.*

And the name of another king is placed in the centre of grandiloquence—

සී මත් සී රාජ සිංහ මාහ රාජෝත්තමානන් වහන්සේ
 Sree mat sree raja singha maha rajotta mayanan wahanse
His prosperous highness the prosperous king Singha, worthy, great, right regal!

We find also in the extract from an old inscription, ap. Sidath Sangarawa, p. excix., the affix *wahanse* is given to a deceased lady, the queen-mother as she is called.—

ස්වර්ගී ස්වමු මවු බිසවුන් වහන්සේට

Swarga stawu mawu-bisawun wahanseta

and Clough gives *බිසවුනානන්සේ (bisawunnānse)*, as one of the renderings for Queen. The same affix is given to His Excellency the Governor, who is styled *උත්තමානන්වහන්සේ (uttamayānan wahanse)* or *උතුමානන්වහන්සේ (utumānan wahanse)*, which latter is the title given by the translators on one occasion to the governor of Judæa.† The terms are derived from words signifying chief, excellent, or high; and Clough supposes that the term *මහත්මයා (mahatmayā)* which is now in its customary use equivalent only to our Mr., had the same common origin, being composed of the words *මහ (maha)* great and *උතුම (uttama)* excellence: so that the same term is in fact applied to the two extremes of the social scale; they are both excellent in their place.

As a formal title of office, Mahatmeya denotes a principal Headman; and a Ratte mahatmeya, from *ratte රට (rata)* country, in the sense of a large district of country, is the principal headman of the district. The only higher territorial officer was the Dissave, whose dissavony, from *දිස (disa)* or *දිසාව (disaawa)* a part or portion, was in the nature of a

* The same term *දෙවිසන්වහන්සේ (Dewiyan wahansa)* is employed by Mr. Alwis in his Singhalese version of the Hitopadesa as the corresponding phrase for Please your Majesty! Sidath' Sangarawa, p. 206.

† Matth. xxvii. 2. He is afterwards called *අධිපතියා (adhipatiyā)*.

province or Satrapy; and the two or three principal Satraps or Dissaves were Adigars, a term which signifies placed over. They were the king's highest officers, like the prefects of Darius, Dan. vi. 1, 2; and the first Adigar was, as it were, his Prime Minister.

In the books we find frequent mention made of the King's council, and of his counsellors—the මෙතිමුම (*mætītuma*), the අග්‍ර මැතිසා (*agra mætiyá*), and the දෙවනුමැතිසා (*dewanu mætiya*), all, no doubt, from the same common origin with the Greek METIS, wisdom or ability in council. But what this high council was, and who was the arch-counsellor or the second counsellor, does not clearly appear.*

Nor, except in the low country, is there now any officer in waiting as we say, or *Modliar of the Gate*, viz. of the මාලිගාව (*Māligāwe*) or royal palace, where the king's court or audience chamber commonly was. But *Mudianse* and *wásale* or *wáhale Mudianse* (the Singhalese synonyme), is not unfrequent as an agnomen, among the Kandyan Basnaïke Nillemes and Rattamahatmeyas.† Such may constitute what Mr. Armour (Kandy Law) calls “the *Mudeli peroowa* or titled class.” For I find nothing in the nature of our nobility among the Singhalese, either of the higher or lower ranks: only when a person got office under the Government and more especially සිතූ තනතුර (*sitū tanatara*) an eminent place, from තනතුර (*tanatura*) “office, service, appointment, employment,” (Clough), his descendants commonly assumed the title as an agnomen or pattabendigeey name, the *patta tahadoo* or office frontlets becoming likewise heir looms in the family, and

* The royal poet Rajadhi Raja Singha speaks of the priest Moratotte in this way—

පවරන මැති මෙතොට සති මනාවන්

pawarana mæti Moratotte yati manawan

but perhaps this only means, Moratotte, no less excellent as a friend, than distinguished as a priest.

† Among the former there is at present Errawwawele Senanayeke Bowaneke bahoo Narayene Raje goroo wahale Mudianse, Basnaïke Nilleme of Lanka tilleke and Gadala denia dewales.

according to Mr. Armour, in his Kandy Law, descending with the parveny lands.

Mr. Alwis however, says, "Situ, equivalent to an English Baronet, was a rank which was conferred by the Sovereign on account of the great wealth of a person. It may be considered as a grade of the peerage of our forefathers. A person who had this rank conferred on him had access to the royal household, and was altogether one (as we gather from books) who controlled the councils of the State." Sidath Sangarawa, by Mr. Alwis, p. clviii. But there is some misconception here, as to the grounds on which the comparison is made; and it is not unlikely that office and wealth, the latter the foundation of the former, were the great elements of consideration among the Singhalese. To this day they are tenacious to a degree of their parveny or hereditary land.

The Government Agent is sometimes styled Dissave. But there can be no analogy among officers in systems of government so very different as respects the distribution of official power and duty as the English and Singhalese; and it only tends to perpetuate misapprehension to use the names indiscriminately.

The above, namely, the Adigars, Dissaves, and Rattemahatmeyas, were the principal officers under the Singhalese government; and in the Convention of 1815, entered into after the conquest of Kandy by the English, for the cessation of hostilities and the settlement of the country by a formal declaration of the power and principles of the new Government, they are mentioned or alluded to as the principal chiefs of the Kandyan provinces, and the Mohottales, Coralles, Vidahns, and others, the subordinate headmen from the provinces.

Budha is *wahansé* of course; and the stories of his births or previous states of existence, *Játaka pot wahansé*, the worthy books Jataka, a composition so highly regarded by Buddhists, that, says Clough, "they will offer to it and worship it." The term is also applied to the Buddhist priesthood in

an associated or collective capacity, as in the Introduction to the above book, where it is said, Budha preached the sutra Damsak to many; and among others, and especially, to the five worthy sorts of priests—

පස් වහ මහනුන් වහන්සේ
pas waga mahanun wahanse

The *Maha tera* of whom we sometimes read, is also called *wahanse*; and *Upáli maha situ* an important person, but whether the same with the *Upali* by whom the *Winiya pitaka* was arranged, does not clearly appear.

The same affix is given to *Seriyut maha himiya*, the great proprietor, so called apparently from his being a great and distinguished *author* of his time. And to *Swaminy Nagasenaya* in his colloquy with the king,* wherein he shewed the king, with great adroitness and felicity, the rapidity of a defunct's passage throughout the universe to another birth, by comparing it to the quickness of thought in the mind, the celerity with which our thoughts pass from one object to another.

In these personages, and *Upali maha situ*, we may see the respect and honours anciently in use to be given to literature and philosophy; using these high terms of course, in the very limited and peculiar sense in which they must here be taken.

We have a further illustration of the extent of literary fame in the wonderful *Ráhula* of Tottegamuwe, another distinguished literary character to whom the affix is given.—

සී සහබෝධී සී විජය බාහු පරිවේනාධිපති ත්‍රිපිටක
Sree sanghabodhi sree wijaya bahu pariwenādhipati tripitaka
වෘතී ස්වරාජ්‍යාර්‍ය්‍යා සී රහුල ස්ථවිර පාදයන් වහන්සේ
wagee swarachayarya sree Rahula stawira padayan wahanse
He seems, like another *Rahu*, to have eclipsed all others; and his birthplace passed into a proverb, but a proverb

* Milindapprasne, ap. Sidath' Sangara, p. ccxxvii.

highly characteristic of a Buddhist people, with whom literature is good, but Buddhism is better :—

තොටගමුවේ උපනාට මොකද බන බරිනාන්

Tottegamuwe upannāta mokada bana berinan.

What signifies being born at Tottegamuwe if you don't know bana?

We find the affix also with නාමදුරුවේ (*hāmuduræwo*), a compound term, and applied as a domestic appellation to the head of a house or family, in a combined sense of master and instructor.

And in a deed written by Karangodde unnanse of Potgul wihare in Saffragam, A. D. 1835, that priest describes himself thus :

පොත්භුල් විහාරායිවාස් කරංගොඩ සංඝ රක්ඛිත උන්වහන්සේ

Potgul wihārāyiwas Karangodde sanga rakkhita unwahanse.

The description here given signifies preserved or defended by the priesthood ; and the Rev. Mr. Gogerly, who gives me this explanation, adds, that priests when ordained take names of that kind.

In regard to *Unnansé*, that word is employed not only as an affix of respect, but also substantively or as a pronoun of the third person. In this way, it is given to every Buddhist priest ; and the තෙර (*tera*) or old priest of a wihare, who has attained his degree, is a Terunnanse.

The word is not used, however, to any other than such priest :—it is not given to the kapuwa or god's priest, nor to the yakadura or devil's priest, nor to the balikariya or planet priest. For the poor Singhalese are by their fears, fostered by their very creed, beset on every side with malignant influences, which like the red untwinkling eyes of their witches never rest in their baneful operation. And it is observable, that even Budha, when he found a demon prowling about for an opportunity to catch hold of an infant child in order to eat it, (so says the Jataka) did not attempt to do more than chide her, and repeat to her the commandments as a help to her. His reproof was in these words :—

භුවන නැත්තිය පෙරත්තෝ අකුසල් කොට යකින්නි ව
 Nuwana nættiya peratto akusal kota yakinni wa
 උපන්නෙහි විදුන් වනාහි නැවතත් අකුසල් කරන්නෙහි
 upanne hi weedan wanāhee næwatat akusal karanne hee
 විද අභුවන නැත්තිය කියා
 weeda anuwana tæættiya kiya

O woman of unreflecting mind! It is because of demerit in a former life you were born a yakinni, and do you still go on meritless! Unwise person that you are! Then repeating to her the commandments as a help to her, he let her away, and she vanished in the air.

A generic name for a Buddhist priest is said by Bridgnell to be ගනිනනාන්සේ (*ganinnānse*), probably from some root signifying learning or wisdom, whence we have *Ganesa* the Hindoo god of wisdom, *ganaya* a poetical measure, and *ganitaya* the science of arithmetic. But Clough derives the word differently, and thinks it is an inferior term applicable to the lowest order of priests.

The same affix is given to the ගුරු (*guru*) or preceptor, who is accordingly termed a *gurunnanse*.†

The secretary of the District Court subscribes himself secretary swamiha, which is a derivative from swamy or swamaya, a lord or master. This appears singularly inappropriate: his proper appellation as clerk of court is certainly *unnanse*.

Among the different members of a family or household, there are several words and phrases in common use, and applied in what is called a familiar way; but they appear generally to be of a common character, and not words of affection or endearment.

† For “a religious teacher who is not a Buddhist,” the term is තීර්ථකයා (*teerthakaya*) which imports in Buddhist estimation, and also it seems etymologically, an unbeliever. See Sidath Sangarawa by Mr. Alwis, p. 33. Qy. whether this term is connected with the appellation given to the prophet under the name Tirshatha? See Ezra ii. 63; Neh. vii. 65, viii. 9.

And what we call an infant in arms, they more loosely call අතලමයා (*ata-lamaya*), a child in the hand. So, what we call the family, or inmates of the house, they appear to call අන්තර් ජන (*anto-jana*), the people inside.

As respects an inferior servant, a cooly, a slave, or a person of low caste, he is බොල (*bola*), dross and rubbish—one whose demerit has sunk him low.

For the weaker sex in general, and බිරු (*bheeræ*) or the timid one, seems a favourite epithet, the Singhalese have many names expressive of desirable female qualities. But these are mostly of a sensible kind; and when a word of affection is used, it seems to have more of passion than an English phrase in the like case. Their sorrows seem to partake of the same character. For when they are bereaved of a beloved object, or suffer any ill, they but say, ඉනියා (*iniya*) Hech me! it is my misfortune—the consequence of some demerit of mine in a former life! unless it be the death of a person, for then it will probably be imputed to his own sin!*

In the Kandyan Districts, or among the Singhalese strictly so called† there are terms by which they designate their children as to size. What a big heavy boy! This is ලොකු (*loku*); What a little tiny thing! This is ටිකිරියා (*tikiriya*). Similar to this, and no less descriptive, is the appellation given to the attending servant of a Buddhist priest, අවිත්තයා (*æbittaya*), a bit boy! which indeed, in point of fact, he commonly is. The term may be connected with the *èbètèr* and *èbetikos* of the Greek, *youthful*, *a stripling*.

And here it may be observed, that the distinguishing terms characteristic of the priest and the layman are ග්‍රහස්ත (*gra-*

* See the poetess Gajaman's elegy on the death of her father, ap. Sidath Sangarawa, p. ccxvi.

† The Kandyan or hill country is distinguished from the lower or maritime districts by the name Singhalese; and the town of Kandy is Maha nuwera, the *Megaló-polis*, or great city, the metropolis. These names are easily accounted for, but they are accorded as given.

hasta) and ප්‍රව්‍රාජිත (*prawrajita*),* householder and wanderer,—the one living in a ග්‍රහ (*graha*) house and family, the other dwelling in a පංසල (*pansale*) a leaf-hut or bower.

The *Wihare* need not however, I presume, be of this temporary description; and the image room is even termed ප්‍රතිමා ග්‍රහ (*pratima graha*) in the Cotta inscription *ap.* Sidath Sangarawa, p. cxcix.

The priesthood, or ministers as they appear more properly to be, are a distinct order, of different degrees: namely, the ස්‍රාමණේරු† (*srāmanera*), the devotee or pupil priest, somewhat possibly, like the sons of the prophets: and the උපසම්පද (*upasampada*), one graduated or advanced: the senior or old man of the *wihare* being the ස්ථවිර (*stawira*) or තෙර (*tera*) *terunnanse*.

There was also the තපසයා (*tāpasayā*), from තප (*tapa*) mortification or religious austerity; but as respects “persons of the *Silwat* class,” as Mr. Armour has it, or voluntary ascetics of their own act, they are not priests but laymen.

The dwellings of the priests are, as we have seen, regulated and characteristic of them. So is their dress, the සිඞුර (*siwoora*), a term connected perhaps with the *sisúrna* or *sisúra* of the Greeks, and the method of their obtaining it;—the manner in which they are to get their livelihood or subsistence, even to their alms cup or begging bowl;—their meal time;—and the season when they may discontinue travelling, and remain within doors.

It is from the manner of life thus prescribed, the priest is termed භික්ෂු (*bhikshu*), one living on alms, an almsman; and the assemblage of priests මහ විච්ඡත භිමිය (*maha bik-sangha himiya*). They do not constitute a fraternity, nor are the priests friars, as has been represented. They are not so or-

* See Armour's Kandy Law.

† This word, like that from which it is derived, and many others in the language, occurs in different forms; and a good Dictionary of Synonymes is a great desideratum in Singhalese literature.

ganized: they belong to an earlier time, and a less political system.

Connected with the period when the priests discontinue travelling, and are to remain within doors, is the festival time; and particularly the "great පෙරහර (*perahara*), or previous procession, from the new to the full moon of July, the sight seeing month, after which *Wassána*, or the rainy season, of four months, begins.* These processions occur in history so early as Fa Hian's time.

As respects *colour*, the great colour was නිල (*nila*) the colour of the sky and ocean, and like these, indeed, susceptible of many shades from green to dark blue; but commonly denoting this last, the colour of Vishnu's garment. It is to this colour allusion is so often made in the descriptive writings of the Singhalese poets; as when they sing the praises of feet, soft and beautiful "as the full blown lotus"—

කොමල සුපිපි සර සදිසා පද පෙ

komala supipi sara sadisa pada &c.

So also, when they speak of "lotus hair;" and the නිල කාර (*nilangkára*), or blue ornament of dark eyes.

In like manner, perhaps, we may read concerning Budha, that he "opened his lotus mouth" and spoke—

මුව පිසුම පොඬසා

muwa piyuma pobaya

his mouth, lotus-like, he opened, his lips opening like the opening lotus! But by the phrase "lotus mouth" generally, මුව නමර (*muwa tambara*), as an expression of beauty, may be intended the red lotus, and lips red with the betel leaf, which is so commonly used and so coveted by the natives of all classes, that it might well give occasion to the name, as a designation of the island කාමිමු පර්නි (*Tambra parnni*), *red leaf*, whence the classic appellation for Ceylon, Taprobane.

* Note The *Warsana* or rainy season of the civil or agricultural year is different. It is a portion of *Wassana*, and consists of but two months, the time of the early rains, previous to the sowing for the Maha harvest, so called, there being at the other equinox මැදින්දින (*mædindina*), another, the යල (*yala*) or farther harvest.

Nilā was thus perhaps what may be called the royal or government colour, and words of that formation may be so derived. There was a නිලමෙ (*nilame*) or Nilleme at the head of several of the departments. It was the title usually given to any high official, and it is still the title of the great officer of government in the Temples.

The term in question may, I conceive, be so rendered accordingly. Thus, when the valiant Gaja bahu rajah, whose city (unlike the banquet house of a great king, as his ministers ignorantly represented) had been entered by an enemy, and many captives taken, at length resolved on an expedition for their recovery, he went out from the council with නිලයෙදයා (*neela yodayā*), the great officer of war. These words, however, have been rendered *Neela the giant*, and “the great giant Neela”—* as if නිල were a proper name, and not like නිලය (*nilaya*) and නිලතල (*nilatala*), an office, place, or situation.

Among other terms of high import, සී (*sree*) happy, prosperous, was a distinguished one, and supposed eminently due to Lakshmi, wife of Vishnu, the goddess of the affections and happiness; commonly known here by the name of *Sree* or *Sriya Kántāwa* (Clough, *voce* Lakshmi) or, as we sometimes find it, *Siri Kata*, the lucky lass! The virtuous queen Lelavaty, who is feigned by the poet as possessed of the *situmina*† or wishing-gem, a fabulous symbol of grace and beauty known in the East from the earliest times, “whithersoever it turneth, it prospereth,” Prov. xvii. 8—is represented as the very impress and realization of this goddess, winning at once the hearts and minds of all.

පසක් සිරි කත විලසින් මුළු ලෝ මනා භුවිජිගත්
pasak siri kata wilasin mulu lo mana nuwangat .

She is also called *Wijeya sree* (Clough, *sub voce*) from the conqueror of that name, the leader of the great *Budhist*

* See the Friend for Sept. 1839, and the Sidath Sangarawa by Mr. Alwis, p. lxxvii.

† Otherwise written චින්තා මානිකයා (*chinta manikyaya*).

settlement which had the effect of driving into the jungle, the snake and demon tribes inhabiting the island, and proved the foundation of a new and powerful dynasty, the *Singhalese*, so called from the singha or lion-like character of the conqueror, or his mythological origin.

The same term became also the designation of the language: what the name was previously does not appear, any more than the national name of the subdued tribes. They were the Yakhos of Lanka, and their language was the language of the Yakhos. In point of fact, however, it certainly forms a constituent part of the *Singhalese*; and, judging from analogy, the continued existence of such is probably due to some aboriginal element in the population, which it would be interesting statistically to investigate.

Sri was the affix of royalty, and *ඪ්‍රී* (*Sree*) the signature or sign manual to royal grants and sannases. See Armour's Kandy Law. Ceylon was *ඪ්‍රී ලංකා දිවයින* (*Sri Lanka Dvīpa*), and Adam's Peak *ඪ්‍රී පාදය* (*Sri pādāya*) the prosperous footstep, the prosperous Lanka; and sometimes also the epithet was bestowed both on temples and individuals, the prosperity intended in all these and the like cases being Buddhist prosperity, that is to say, the result of what they call merit; as in Budha's epithet *සිරිගණ* (*Sirigane*), *filled with prosperity!* which is the salutation in the Rajawaliya, *නමඪ්‍රීගණය* (*nama sri ghanāya*), and the Sœlalihini Sandese, *නමඪ්‍රීගණය* (*nama sree ghanāya*), or as it is expressed in the Guttile Jataka, in that extatic way in which Budha appears always to be spoken of,

සිය පින් සිරිත් සරෑ

Siya pin sirin sarae

prosperous in prosperity from his own merit!

merit and prosperity standing with the Buddhist, in the relation of cause and effect.

There are several modes of reverence or obeisance among the *Singhalese*, the shoes also off:—placing the right hand on

are remains of various Wihares, the stones composing which are of great size, and in many instances neatly worked. The inscription is cut on a shelving face of rock, sixteen or twenty feet above the water level of the tank. It forms one large curving line, about thirty-five paces in extent. The letters are from eight to twelve inches in height, boldly cut, forming triangular grooves (and not outlined by isolated dots, as is sometimes the case). Owing to the roughness of the granite, the letters are somewhat irregular in size and position: but there is only one blank, and in that instance, I am inclined to think that the spot never was occupied by letters.

On the whole, this is much the most perfect inscription in this character which I have yet met with. Regarding its origin, the natives appear to have no tradition whatever.

The second inscription I have not had an opportunity of visiting in person. The intelligent Modliar of the Northern District of Chilaw discovered it when travelling through the jungle on duty, and obligingly forwarded a copy of it to me immediately. It is engraved on the Moolegame Kande at Moolegame in Kirimittia Pattoo of Demele Pattoo, two miles west of Kongkaddewille, and I should suppose about two and twenty miles west of Putlam.

□ / 1 6 7 R B L { 6 + 1 H 1 2 1 6 H A
 P 3 W U E

Most of the characters in this inscription, will be found in the other; and of the remainder, the majority, if not all, will be found in those of which, on previous occasions, I have had the pleasure of transmitting copies.

On the Veddahs of Bintenne. By the REV. J. GILLINGS.

THE District of Bintenne is divided into four Palarthies, resembling the Pattoos among the Tamuls. These are presided over by a Headman or Vannian in the employ of the Government. They include several smaller divisions and villages, in some of which a subordinate Headman or Udeyar is stationed. The four principal districts or divisions are the following. Rugampalarththy, Ratthuvapalarththy, Pallappalarththy and Udappalarththy.

Rugampalarththy contains the villages of Carinjuvapetty, Urugarmum, Kithul, Kottarncathy, Tambili, Yarvutthu and Larvarney.

Ratthuvapalarththy includes, Unarpparny, Pallagamma, Kitthulappar, Padavaly, Alaruly, Ummeny and Ikkargalla.

Pallappalarththy includes Magamuney, Mahally, Cudarvclly and Kaluthalarevvey.

Udappalarththy contains Allagodde, Thikkuvally, Karlaviny Larvagoddy, Marangaly, Thivukkumbury, Marrarken, Comarne, Mevisuvetty, Koolikky, Pathitthalarky, Keruivarne, Kaluly and Velekumburey.

These are inhabited by a mixed population of Singhalese and Veddahs. The proportion of each will be about equal. According to the census taken in October 1849 the amount of each district is as follows.

	Males.	Females.	Total.
Rugampalarththy . . .	161	152	313
Udappalarththy . . .	329	326	655
Ratthuvapalarththy . . .	243	211	454
Pallappalarththy . . .	55	61	116

making a total of seven hundred and eighty males, and seven hundred and fifty females; or in all, including men, women, and children, fifteen hundred and thirty eight. This shews a very small population considering the extent of the country; but it exceeds, as I am informed, the census taken in 1841.

The population has increased gradually of late years, but it is not easy to say what relation it bears to former times, as no records appear to have been kept, and very little interest to have been taken about the people by the Dutch or the Kandyan Government. Our attention at present will be directed almost exclusively to the Veddah population of this region, forming, as is supposed, about one half of the number here given. Several intermarriages having taken place between the two peoples, it is not easy to make an accurate estimate of each.—Various are the conjectures entertained as to the origin of the Veddahs. That which obtains most credit is the following: that the Veddahs originally formed a part of a Singhalese community resident on the coast of India, and were from thence transported to this Island at a very early date for certain offences, before the Singhalese as a people came to these shores. It is certainly probable that they were among the first, if not the first, inhabitants of the Island.

Their language is a corrupt dialect of the Singhalese; being mixed up to a large extent with Singhalese people, they understand the common language and can speak it, but among themselves they generally prefer their own inferior dialect. As they have little to do with the Tamuls, the majority of them, unlike the coast Veddahs, are quite unacquainted with the Tamul language. Their present habits, as contrasted with their former, in many instances present the aspect of civilization and improvement. Formerly they lived entirely in holes in the rocks, and wandered about the jungle, living on nothing but yams, honey, and flesh, procured in hunting. They were very wild in their character and shunned human society as much as possible. They clothed themselves with the bark of trees and leaves, and had no fixed habitation. Since the English Government, about six or seven years ago, took an interest in these unhappy outcasts, and calling them together built them houses, planted trees for them, and supplied them with food, they were brought to abandon, to some extent,

their old habits, and to take an interest in agricultural pursuits. They began to cultivate chenas, sow natchery, plant Indian corn, and attend a little to their cocoanut and plantain trees, some of which are now in bearing. A very few, however, attend to paddy cultivation. All of them now have small huts, built of sticks and straw, besides their rock houses, which belong to different families, and are divided into several compartments. To these latter they have still recourse, when out in the jungle during the inclement season.

Whilst on a visit to them in October last (1849) I saw two or three families living on large rocks: here they cooked, ate, and slept, while others of their companions were away in the jungle, seeking roots for food or attending to agricultural operations: they will frequently exchange the few commodities they possess or grow, for cloths or ornaments of various kinds. The women are exceedingly fond of a profusion of beads, necklaces, earrings and ornaments for the hair; and they load their children with rings round their waists, arms, and fingers, bells on the toes, and necklaces in abundance. Their food consists of natcherry, rice, pumpkins, brinjall, and other vegetables of native growth, as well as the flesh of the monkey, guana, and wild hog; they chew the bark of trees as a substitute for the betel and arecanuts, of which they are very fond when they can obtain them. A bow and arrow were their only weapons in former times. Now some of them possess guns.

Murder was formerly exceedingly common among them, now it is less so; they were accustomed to cut their victims to pieces with axes, or to shoot them with bows, and if found out in the crime, they were required by their headman to make compensation to the surviving relatives by the payment of about five and twenty shillings, or something equivalent, this being the price of a slave. The uncle of the party aggrieved usually enquired into the matter in dispute, and the elders settled the case. An uncle had power to sell

his nephew ; the price of a female slave was double that of a male. Adultery and polygamy are still common among them. If a man does not like a woman whom he has married, he will, after a year, take her back to her father's house and give her into his charge. Theft and lying too are still prevalent. At the latter they are particularly expert, and seem to evince nothing like shame when discovered. I met with several instances of this amongst them. In the time of their headmen, those who committed theft were beaten or kept to hard work in the headmen's houses. In particular cases, they were carried before the Kandyan kings. Their headmen were called Thissarvu. They received no salary from the Government, but practised extortion on the people. The only headman of themselves unconnected with the Government, is called Rollah. He has no power over them and can only give them advice. The Udeyar receives from Government five dollars per month, and the Vidahn is paid for petty cases.

Of *agriculture* they know but little, some of them cultivate a chena for a year, and after reaping a crop, wander to some other place. Where they plant trees they will generally stay longer : they turn up the ground with mammotties, but know nothing of ploughing and manuring, and attend little to either fencing or watering ; consequently, they frequently lose all the fruit of their trees, and labour from the attacks of wild beasts that infest the jungle around them. Some of them keep a few buffaloes. For paddy they pay tithe to Government, but not for Indian corn or natcherry. They trade principally with Moormen with whom they barter their honey, fowls, &c., for rice, cloths or ornament. They purchase bows from Vellase, and exchange various commodities among themselves. Many of them are beginning, however, to learn the value of money.

They are fond of shooting and hunting, and will go out to the jungle for weeks and even months together ; when out

they procure honey from the rocks by attaching themselves to long sticks fastened to bushes and trees on the sides of the mountain, and then, crawling down to the sheltered place in the rock where the honey is deposited, and having smoked out the bees and taken the honey, they pull themselves up again in the same way, and then descend the mountain with the spoil, which they divide equally among their companions. Many of them seem to prefer these pursuits to the steady and monotonous occupations of husbandry. Their love of a wandering life is not extinguished, and they court independence and freedom from labour. If introduced to the bustle of towns and the restraints of society, they break away as soon as possible to their beloved solitudes and their old companions, preferring a life of hardship in the jungle to pampered indulgence out of it. I tried hard to induce an orphan lad, of apparently bright parts, to forsake his forest home and come with me to the Mission station, that he might be boarded, fed and educated, so as to be fit for some useful employment, but he was deaf to my entreaties. "When I am hungry," said he, "I chew the bark of trees and pluck roots; when I am cold, I light a fire and warm myself; I want no books, nor learning, nor money; only give me an axe and I am content."

Their medicines are made from the bark of trees, roots, and leaves. Some are said to be very efficient in curing diseases, and especially hurts from wounds and snake bites. For fever they take pills prepared by Singhalese doctors. Like most natives, they use charms, and tie strings round their waists, which they believe will remove the disease under which they labour. Of late the Government has done little for them; and as they have taken few precautions to provide for their own necessities, it is not easy to say how long they will continue in fixed habitations, should their crops fail. Doubtless the aid formerly afforded them was designed not to supersede, but to stimulate their own exertions; but the philosophy of this they are scarcely at present able to understand.

They assist the Singhalese among whom they live in various matters by working for them, and thus a few of them learn to cultivate chenas and to take care of their crops in houses.

Of *education* they are totally destitute. Formerly schools were established and supported among them, but the labour and money spent thereon were in vain. The people had no taste for learning, and wanted their children to accompany them to the jungle in quest of food. They have no written language and can only count to a very limited extent. Their habits at present are certainly too migratory to present any encouragement to systematic efforts for their instruction.

Their *religion* is devil-worship. They will acknowledge that there is one God, whom they believe to be greater than the devil, but him they neither fear nor worship. One of them said to me, "When God gives us food, we are glad, and wish him to sit on our mat; when he does not, we curse him and will not allow him to do so." They appear to know little or nothing of a future life, of heaven or hell, where the soul goes to when it leaves the body, or whether it will be happy or wretched. A number of them were formerly baptized * on a profession of faith in Christ and willingness to abandon their superstitions; but almost all of these have gone back again to their former habits and follies. What they formerly heard they have forgotten. They declare it impossible for them to live without devil-worship. "When they did so, their children were sick, their cattle died, their trees would not bear fruit, and their crops were cut off." It was vain to expostulate and argue. They believe the souls of their departed relations to be devils who have power to hurt them, and therefore they perform ceremonies to them at regular seasons, and especially when they are sick. The Singhalese who live among them exert a bad influence over them in these respects. It is very difficult indeed to get fit persons, who know their lan-

* Up to 1844 there had been baptized in Bintenne 163 men, 48 women, and 85 children; since that time very few have received this rite.

guage, to labour among them. Without these, desultory efforts will be of little service. The Veddahs are mostly low in stature, but some of them are strong, active men, and most of them appear to be healthy and little subject to disease. They differ considerably from the coast Veddahs in their habits and dispositions. The latter appear to me far more tractable and hopeful. They have improved much by the instructions they have received, and are tolerably well acquainted with the leading truths of Christianity.

The country of Bintenne is extremely rocky. The roads through it are in a very bad state; in many places full of stumps of trees and very irregular and uneven. The country suffers much from drought; in the summer months only a few springs are found here and there, and the people have in some places to go several miles for water. Ebony, Sattin, and Halmaniel wood abounds in the forests; and Bamboo and Tamarind trees are plentiful. In many places the land is exceedingly fertile, and the surrounding prospect is full of grandeur and beauty.

Note by the Secretary.—Some rather exaggerated notions have been recently entertained concerning this race of people, and it has been stated before the Ethnological Society of London, that they subsist upon decayed wood, for which there is in reality no foundation. It has also been stated, that they do not bury their dead; this is also an error, as I am assured by a Gentleman who has studied their habits closely, that they inter them wrapped in mats. The Veddahs do not appear to use Tobacco, though Knox, in his account of Ceylon, has a portrait of one of them smoking his pipe. The Veddahs, both of Bintenne and of the Sea-coast, consider themselves a very high caste, calling themselves Veddah Vellales. Some Vellale families in Batticaloa are said to have sent out to invite the young Veddah women to come and cook for them, as the Vellales may not eat food cooked by persons of inferior caste.

*Rock Inscription at Piramanenkandel. Communicated by S. C.
CHITTY, ESQ.*

CL 3
 π 1 2 2
 0 7 4 T 2 2 2
 U 2 2 2
 2 2 2 2 2
 2 2 2 2 2
 2 2 2 2 2

The above inscription was taken from a stone slab at the head of the grave of a Mohammedan Saint at Piramanenkandel, a deserted village to the east of the Mee Oya, about 10 miles from Putlam in a North-Easterly direction. The characters are in an ancient and obsolete form of Pali, and Mr. Chitty inclines to believe the Inscription has no reference to the Mohammedan Saint, but records some event connected with the history of Buddhism.*

*An Analysis of the great Historical Poem of the Moors,
entitled SEERAH. By SIMON CASIE CHITTY, ESQ.*

I have the honour to present to the Society a copy of the great Historical Poem of the Moors, entitled Seerah, which I have procured from Madras, where an edition has lately been published at the Vidhyavilasa Press by Sheik Abdul Khader Nina Lebbe Alim of Kailpatnam and two other individuals.

* Vide Letter, in Appendix to Journal No. V., p. xx.

Among the numerous compositions which the Moors in Ceylon and the South of India possess in the Tamil language, none perhaps holds a much higher rank in their estimation than the *Seerah*, and it is not undeserving the distinction. Its subject is the history of Mohammed, and its author is alleged to have been the celebrated Moorish Poet Omar, who lived at the Court of the Raja of Etteapuram in the early part of last century, and wrote it under the patronage of Abu Kassim, a wealthy merchant of Porto Novo. In style it is a clever attempt at imitation of the *Naishadam* and other popular epic poems of the Tamils; but unfortunately it is interlarded with so many Arabic words, that it is scarcely intelligible to a Tamil scholar without the assistance of a Mohammedan expounder. In the *Ceylon Gazetteer* mention was made by me of this poem, in treating of the literature of the Moors; but the limits which I had prescribed to myself in that work did not permit me to enter into any details; and these have, I believe, remained hitherto unknown to all but the Moors: I have therefore thought it desirable to draw up the present analysis for insertion in the *Journal of the Society*.

The *Seerah* comprises three books, of which the first is called *Biladat Kanda*; the second *Nubuvat Kanda*; and the third *Hijarat Kanda*.

I.—The *Biladat Kanda* is divided into the following twenty-four chapters.

The first chapter, consisting of twenty stanzas, opens with an invocation of the Deity, eulogizes Mohammed and the other prophets and saints, and concludes with an apology for attempting to write the poem itself.

The second chapter, consisting of fifty-six stanzas, gives a fanciful description of Arabia, especially of the rains which descend upon its mountains, and the streams which flow from them, diffusing fertility and riches through the land.

The third chapter, consisting of twenty-two stanzas, contains an encomium on Mecca, which is said to occupy as important a position in the universe as the pupil does in the eye, and to surpass every other city both in riches and magnificence.

The fourth chapter, consisting of sixty-seven stanzas, treats of the creation of Adam and Eve; their expulsion from Paradise, and their subsequent settlement at Jiddah in Arabia. It also traces the line of the patriarchs from Adam to Abraham, and thence through Ishmael to Abdulla, the father of Mohammed: these being the personages on whom the *noor*, or ray of divine intelligence descended successively, at last resting on Mohammed, and forming a glory around his head.

The fifth chapter, consisting of one hundred and twenty-five stanzas, narrates the particulars of the conception of Mohammed in the womb of Amina, wife of Abdulla; the announcement of that event to her in a dream by Adam, Edris, Noah, Abraham, Ishmael, Moses, David, Solomon and Jesus; Abdulla's journey to Medina, on traffic, and his death at Abwa; and the birth of Mohammed, which is said to have been marked by the cessation of the oracles in Arabia, the overthrow of the idols in the Kaba, and the extinction of the fire of the Magi in Persia.

The sixth chapter, consisting of one hundred stanzas, relates to Mohammed being suckled by Alima, wife of Harid of Honei, who had one of her breasts withered, but as soon as the prophet began to suck, it was made whole and yielded milk.

The seventh chapter, consisting of ninety-one stanzas, refers to the story of the angel Gabriel impressing the seal of prophecy upon the back of Mohammed, between his shoulders, as he went out along with Alima's sons to tend her sheep.

The eighth chapter, consisting of fifty-seven stanzas, treats of Mohammed's going to Medina with his mother, on a visit to her kinsfolk; her death and burial at Abwa, and his return to Mecca, where he lived under the protection of his grandfather Abdulmuttalib, and afterwards under that of his uncle Abu Talib.

The ninth chapter, consisting of fifty-eight stanzas, contains an account of Mohammed's journey to Syria with Abu Talib when only nine years of age, and his conference with Boheira, a Christian monk at Bosra, who having discovered on his person the marks by which the last of the prophets, foretold in

the scriptures, was to be distinguished, protected him from the plots laid against him by the Christians and Jews in the place, and sent him back to Mecca in safety.

The tenth chapter, consisting of eighty-three stanzas, relates to Mohammed's obtaining money and goods on loan from Khadija (a lady of great opulence in Mecca), and proceeding to Syria, in his twenty-fifth year, on a commercial speculation.

The eleventh chapter, consisting of twenty stanzas, treats of a miracle wrought by Mohammed, by causing a spring of water to gush forth in the desert.

The twelfth chapter, consisting of twenty-three stanzas, gives an account of a prodigious serpent which lay on the route to Syria, and went to devour travellers, and which Mohammed slew by merely throwing a straw at it as it hissed and sprang up to swallow him.

The thirteenth chapter, consisting of thirty-one stanzas, describes how Mohammed and his caravan, by the interposition of the angel Gabriel, passed over a river which had overflowed its banks and threatened to arrest their progress.

The fourteenth chapter, consisting of fourteen stanzas, relates to a tiger speaking to Mohammed, allowing him to stroke its head, and retiring from the road which it had heretofore infested to the great dread of the travellers.

The fifteenth chapter, consisting of eighteen stanzas, treats of a serpent, which had long lain on the road to Syria waiting to meet Mohammed; and having at last met him did him homage, and retired into the deep recess of the forest at his desire.

The sixteenth chapter, consisting of fifty-five stanzas, is occupied with the particulars of an interview between Mohammed and Ezura, a Christian monk, whom Jesus had assured that he should not die before he had seen the prophet of the last times, and had given him a sign, namely, that when he (Mohammed) should arrive at the grove of palm trees in which the monk dwelt, one of the dead palms should instantly blossom and bear fruit, which occurred.

The seventeenth chapter, consisting of sixteen stanzas, states that when Mohammed and his caravan were attacked by a party

of robbers, a river miraculously sprang up between him and them, and enabled him to escape from their hands.

The eighteenth chapter, consisting of forty-four stanzas, describes the magnificence of the capital of Syria, and gives an account of Mohammed's entry into it; his reception by the chief of the Christians there, and his mercantile transactions.

The nineteenth chapter, consisting of sixty-six stanzas, treats of a plot formed by certain Christians and Jews in Syria against Mohammed, by inviting him to their quarters and rolling over a millstone upon his head from a height, but from which he miraculously escaped; the hand of the person who rolled the millstone having become attached to it.

The twentieth chapter, consisting of thirty stanzas, relates to an outcry raised against Mohammed by a blacksmith in Syria; his escape from an attempt made by the infidels to assassinate him, and retreat into the house of Uzza, a Christian priest, who recognised him as the prophet foretold in the scriptures, and recommended him as such to the notice of his relation Khadija.

The twenty-first chapter, consisting of thirty-seven stanzas, is occupied with the dreams which Khadija had; wherein she dreamed, amongst other things, that the moon having descended from the heavens settled upon her bosom.

The twenty-second chapter, consisting of sixty-three stanzas, treats of the espousal of Mohammed and Kadija.

The twenty-third chapter, consisting of one hundred and nineteen stanzas, narrates the celebration of his nuptials with Khadija, which was attended with great pomp and magnificence.

The twenty-fourth chapter, consisting of twenty-five stanzas, notices the birth of Fatima, and afterwards enters into the origin and history of the Kaba and the black stone called Hajar al Aswad.

II.—The Nubuvat Kanda is divided into the following twenty-one chapters.

The first chapter, consisting of fifty-five stanzas, treats of Mohammed's retirement from home and going to the mount Hara, in the fortieth year of his age; his interview with the angel Gabriel, who having opened his chest and wrung out the gall

and filled it with wisdom and faith, revealed to him a passage of the Koran, and told him that he was appointed the prophet of God; his communication of this news to his wife Khadija and to her cousin Worakket, a Christian priest, who thereupon declared him to be the prophet whose advent was predicted in the scriptures.

The second chapter, consisting of forty-four stanzas, notices the conversion of Khadija and Abu Bekr, and enters into the particulars of the new creed, and the directions which Mohammed received from the angel Gabriel concerning the form of prayer.

The third chapter, consisting of one hundred and sixty-three stanzas, gives an account of Mohammed's preaching his doctrine publicly in Mecca; the violent opposition of the Koreish against him, and Abu Talib's ineffectual attempt to persuade him to abandon his enterprise.

The fourth chapter, consisting of ninety-five stanzas, relates to the conversion of Omar Ibn Khattab, which was occasioned by an angel, disguised as an ox, wrestling with him and prevailing against him as he was going to trace out Mohammed in his retreat and put him to death.

The fifth chapter, consisting of forty stanzas, relates to an Arab of the desert, who being invited by Mohammed to embrace his religion, told him that he would do it if the latter would make a guana testify that he was the apostle of God, which it did accordingly.

The sixth chapter, consisting of twenty-one stanzas, refers to Utba, who was sent by the Koreish to expostulate with Mohammed and offer him the sceptre, if he would retract his pretensions and conform to the ancient institutions of the country.

The seventh chapter, consisting of ninety-two stanzas, gives an account of the arrival of Habib, king of Thimes, to Mecca, upon a representation of Abujahil and the other Koreish chieftains against Mohammed.

The eighth chapter, consisting of one hundred and eighty-eight stanzas, treats of the miracle performed by Mohammed before the king of Thimes, by causing the moon to appear on the horizon in her full orb at the time of occultation.

The ninth chapter, consisting of thirty-five stanzas, relates to another miracle of Mohammed, namely, his converting a foetus into a beautiful damsel, and Habib and his attendants embracing his faith after it.

The tenth chapter, consisting of forty-one stanzas, notices the return of Habib to his country, and his sending a present to Mohammed of some camels, which, on being produced before him, speak to him, addressing him as the messenger of God.

The eleventh chapter, consisting of thirty-seven stanzas, relates to the retirement of Othman ibn Affan, his wife Rakiah, and several other members of Mohammed's family, into Abyssinia, to avoid the persecution of Abujahil; and the ineffectual attempt of the latter to prevail on Najashi, the king of that country, to deliver them up to his envoys.

The twelfth chapter, consisting of seventy-two stanzas, relates to the confession of the faith by a deer which Mohammed had released from the snares of a hunter.

The thirteenth chapter, consisting of seventeen stanzas, relates to Mohammed having caused a date tree to blossom and bring forth fruits in an instant, in order to convince an Arab of the truth of his mission.

The fourteenth chapter, consisting of thirty-nine stanzas, relates to the solemn league made by the Koreish against the Hashemites and the family of Abdul Mutalib, engaging themselves to have no communication whatever with them. It also notices the defeat of the Persians by the Romans (Roomi), which is said to have occurred in the eighth year of Mohammed's mission, and verified a prophecy he had made.

The fifteenth chapter, consisting of twelve stanzas, relates to the conversion of an Arab named Husein, in consequence of the idol in the Kaba having saluted Mohammed as the prophet of God in his hearing, as he had demanded by way of proof.

The sixteenth chapter, consisting of sixteen stanzas, notices the death of Abu Talib and Khadija; the former is said to have allowed Mohammed to whisper the creed in his ear as he was drawing his last breath.

The seventeenth chapter, consisting of thirty-five stanzas, treats of Mohammed's retreat to Tayif after the death of his uncle

APPENDIX.

PROCEEDINGS OF MEETINGS
OF THE
CEYLON ASIATIC SOCIETY.

ANNUAL GENERAL MEETING,

HELD 7TH FEBRUARY 1852.

Present:—Rev. Dr. MACVICAR in the Chair.

The Hon'ble Mr. Justice Starke, Hon'ble Mr. Selby, Mr. J. De Alwis, Mr. Dawson, Mr. Dalziel, Mr. L. De Soyza, Mr. R. E. Lewis, Rev. Mr. Kats, Rev. Dr. Kessen, Mr. E. L. Layard, Mr. J. O'Halloran, Capt. Jas. Steuart, Rev. D. J. Gogerly, Mr. C. P. Layard.

The Minutes of the last Meeting having been read and confirmed, the Secretary proceeded to read the following Reports of the respective Committees.]

Report of the Committee of Management.

In presenting to the Society an account of their labours since the last General Meeting, your Committee are unavoidably reminded of the loss which the Society has sustained in their late Secretary Mr. John Capper. The difficulty in finding a gentleman with sufficient leisure, with inclination for literary and scientific pursuits, has been much felt in carrying on the business of the Society, since the late Secretary's departure, and the Committee take this opportunity of recording their high sense of his usefulness, and their regret in losing him.

Your Committee have also felt the absence at distant out-stations, of some of those Members of the Society, who by their individual exertions materially assisted the Society in its progress.

Since the last Anniversary Meeting four new Members have joined the Society, and three others have to be proposed at the present Meeting.

Several interesting papers have been contributed to the Society's Transactions, and some of these, it is a pleasure to observe, are the productions of Native gentlemen, and treat of the Antiquities of the country, or its Ancient Literature. Two gentlemen, well qualified for the undertaking, have contributed papers on the Natural History and Geological Structure of Ceylon, and others, with great success, have devoted themselves to Statistical information, bearing upon the social condition of particular Districts of the Island.

The Committee deem it one of the most important features of the Society, thus to bring out native talent. Your Committee are persuaded, not only from recent experience, but from observing the literary contributions made to the Society from its commencement, that much talent among the Native community requires, in order to bring it out, only opportunity and encouragement, such as the Society is eminently calculated to afford, and they would earnestly solicit the united exertions of the Members for its maintenance and success.

During the past year the Secretary has been in correspondence with Government, with a view to obtain the use of its room without interruption from the Loan Board; an inconvenience which has long interfered with the Society's usefulness, the intercourse of its Members with each other, and the full advantage of its Library and Museum; but your Committee have still to express their regret in not accomplishing the object they have long had so much at heart.

Conformably with a motion at a General Meeting, His Excellency the Governor was requested to become Patron

of the Society, and His Excellency has expressed his pleasure in accepting the office.

The contributions to the Society's Library and Museum, since the last Meeting, the Committee regret to say, have not been so large as they would have had pleasure in announcing, though all the corresponding Societies in India and England have forwarded copies of their Transactions. The Meeting is aware that the attention of Members was directed to the collection of objects to represent the productions and industry of the country at the Great Exhibition of 1851. To promote this undertaking a Sub-Committee was appointed, whose Report will now be presented to the Society.

The Society has been duly supplied with the Meteorological Registers kept at Trincomalie and Batticaloa, to the end of 1850, and very full tables are taken at the Master Attendant's Office, Colombo. Owing to circumstances mentioned before, the supply of instruments to out-stations, by which it had been intended to complete the series of observations in the Island, has not received the attention the Committee could wish.

The Transactions of the Society have been published since your Committee presented their last Report. They have now reached their fifth number, which contains no less than fifteen papers, and on a great variety of subjects entered upon by the Society.

The Treasurer's accounts, which will be found on the table, shew a balance in favour of the Society of £38 10s. 9d.; but as your Committee have not had a sufficient opportunity of looking into them, they defer the farther consideration of them till next Quarterly Meeting; and in the mean time, adverting to the great amount of arrears standing, your Committee recommend that instructions be given to the Committee to use their best exertions to prevent the accumulation of such in future.

Your Committee recommend that the Meteorological and

other scientific instruments belonging to the Society should be collected together or otherwise distinctly ascertained by the Committee, and delivered over in charge to some office-bearer of the Society (as the Committee may determine), who shall make immediate report to the Committee of their present condition, and from time to time thereafter, a report of the results derivable from them, and the best means of rendering them available to the Society.

In conclusion, your Committee trust that the individual efforts of Members will be exerted to extend the usefulness of the Society, and though there is of course much yet to be done, and the Society cannot but suffer by the absence of some of its energetic Members, your Committee believe that success in the pursuit of the objects of the Society may be confidently anticipated.

Report of the Sub-Committee for the Great Exhibition at London.

The Sub-Committee appointed to carry out the Resolutions of the Society with regard to the collection and transmission to England of objects suitable for display at the Great Exhibition of the Works of Industry of all nations, lately held in London, have the honour to report that on the receipt of definite information for their guidance from the Royal Commissioners, the Sub-Committee took steps to invite the co-operation of all the residents of Ceylon, by means of public advertisements, and by circular letters addressed, under the sanction of the local Government, to several gentlemen in their service residing at out-stations, with a view of furthering the objects of the Society. The authorities most liberally placed at the command of the Sub-Committee a sum of money to meet all necessary expenses, disbursement of which will be seen in the subjoined accounts, and otherwise encouraged and assisted them in their undertaking. The Committee feel, however, that some gentlemen at out-stations from whom they had calculated on receiving considerable assistance, have failed to second their efforts, whilst others appear to have mistaken the objects of the Commissioners, and have regarded the Exhibition, rather as a Museum of curiosities and antiquities, than as a grand attempt to develope the productions of science and of art.

The Sub-Committee have always deeply regretted, that the period available to them was, in consequence of the length of time required for communication with the Commissioners, far too short to admit of their

doing justice to the work in hand, as they were thus prevented from procuring specimens of carving in wood and ivory, and other industrial objects, the special produce of the colony, which they had hoped would have been among their contributions to that magnificent display of industry and skill, which so justly formed the admiration of the world.

The Sub-Committee is obliged to confess, that with some few exceptions, the collection from Ceylon was by no means such as they had anticipated ; but to all who are aware of the degree of jealousy with which the Asiatic mind regards whatever is in advance of the present hour, it will not appear strange that the suggestions put forth by the Committee were looked on by many, even of the influential and educated Natives, with apathy and distrust. This fact was the more deplored by the Committee, as it was their especial hope to have exhibited the result of native ingenuity as a prominent feature.

With the view of obtaining articles of superior workmanship and design, the Sub-Committee offered prizes for specimens of cabinet work, jewellery, &c., but the result did not answer their expectations, as the designs shewed no originality, nor were they objects of superior quality or skill.

The Committee have much pleasure in acknowledging several contributions of raw and wrought materials, some of which were of fair average quality, and if they could be obtained at a remunerating price, promised to be of commercial value ; they had also the benefit of forwarding models of agricultural buildings and implements as well as articles of furniture, which were intended for private distribution, on the closing of the Exhibition.

Although the Committee are persuaded, that the collection, as a whole, did not fairly represent the capabilities of Ceylon, and must have been completely overshadowed by the brilliant productions of the Continent of India and the refinements of manufacture from various parts of Europe, it is still a source of satisfaction to observe, that the Royal Commissioners have awarded Prize Medals for a very fine collection of Cinnamon in all its stages of growth and manufacture, forwarded by Messrs. Parlett O'Halloran and Co., Colombo ; for a collection of the produce of the Cocoa-nut tree, transmitted by the same firm ; and for an interesting collection of medical and commercial Plants, Gums and Oils, the contribution of Mr. Pieris of the Medical establishment at Kandy, to whom the best thanks of the Society are due for the trouble and expense attending the procuring and preparing thereof.

Immediately before packing the various contributions for shipment to London, the Sub-Committee deemed it right to exhibit them to the Public, and were under obligation to the local Officer of the Board of Ordnance,

for convenient space in the Fort of Colombo, where they were displayed for several days, after which the Sub-Committee felt it necessary to examine them seriatim, and keep back those which were either imperfect, or in the opinion of the Committee were considered not to be within the intentions of the Royal Commissioners, which are accordingly retained in the possession of the Society.

The specimens of Cinnamon and Cocanut Oil, for which prize medals have been awarded, were received by the Committee at too late a period to admit of their being displayed in Colombo, but were duly forwarded with the other contributions.

The valuable services of J. Capper, Esq., as Secretary of the Society, are too generally appreciated to admit of remark from the Sub-Committee; they have, however, the pleasure of reporting that on his return to his native country, Mr. Capper was appointed by the Royal Commissioners to act as Honorary Agent for Ceylon, in arranging the articles for Exhibition in the Crystal Palace, in which capacity he rendered essential service to the Exhibitors, and deserves an special record of the Society's obligations.

On behalf of the Sub-Committee.

F. W. WILLISFORD, M.D.

Colombo, January 20th, 1852.

Hony. Secy.

The Hon'ble H. C. Selby moved, that the Reports now read be received and adopted, and the motion being seconded by the Hon'ble Mr. Justice Starke, was carried unanimously.

The following Gentlemen were then proposed as Members of the Society and unanimously elected.

Lieut. Col. Wilson, R.A.	. {	<i>Proposed by J. O'Halloran, Esq.</i>
	}	<i>Seconded by E. L. Layard, Esq.</i>
Captain W. S. F. Neill, R.A.	. {	<i>Proposed by Lieut. Margesson.</i>
	}	<i>Seconded by J. O'Halloran, Esq.</i>
Capt. J. Sim, R.E.	. {	<i>Proposed by J. O'Halloran, Esq.</i>
	}	<i>Seconded by E. L. Layard, Esq.</i>
Durand Kershaw, Esq., C.C.S.	. {	<i>Proposed by R. Dawson, Esq.</i>
	}	<i>Seconded by R. E. Lewis, Esq.</i>
M. Coomorasamy, Esq.	. {	<i>Proposed by Rev. Dr. Mac Vicar.</i>
	}	<i>Seconded by J. De Alwis, Esq.</i>
J. Lamprey, Esq., M.D.	. {	<i>Proposed by R. E. Lewis, Esq.</i>
	}	<i>Seconded by the Hon. Mr. Starke.</i>

The Meeting then proceeded to the election of Office bearers for the ensuing year.

The following Members were then proposed and duly elected as Office bearers of the Society for 1852.

Patron.

His Excellency the Governor.

President.

The Hon'ble C. J. MacCarthy, Esq.

Vice-President.

The Hon'ble Mr. Justice Starke.

Treasurer.

R. Dawson, Esq.

Secretary.

Capt. W. S. F. Neill, R. A.

COMMITTEE.

The Hon'ble H. C. Selby, Esq.	J. B. Misso, Esq.
Lieut. Colonel Wilson, R. A.	J. De Alwis, Esq.
Rev. Dr. MacVicar.	J. O'Halloran, Esq.
Rev. D. J. Gogerly.	R. E. Lewis, Esq.
Rev. Dr. Kessen.	

Mr. Dawson laid before the Meeting a specimen of a mineral, supposed to be gold, which had been assayed by the Madras Mint, and found to be composed of other than the precious metals. Also several specimens of Rock from Alipie, viz. Graphite Granite, and highly crystalized Dolomite, and a large series of the various woods from the Malabar Coast; these were the contributions of Mr. Hugh Crawford. Mr. L. De Soyza presented the facsimile of an inscription in a cave Temple at Koratotte in the Hewegam Korle, also some coins and signet balls or lumps of clay, on which an inscription in an unknown character is impressed.

These donations were accompanied with the following letter.

To the Honorary Secretary, Ceylon Branch of the Royal Asiatic Society.

SIR,—I have the honour to present to the Society eight pieces of clay on which some ancient characters are impressed. They are found in great abundance in a cave in Sina Corle in the neighbourhood of the ruins of an ancient Buddhist Temple. Two similar lumps of clay were presented to the Society in June 1850, by the Interpreter Mohandiram of Matelle, who supposed them to be earthen coins (?), and a few more by Mr. Power from Badulla.

The character stamped on them appears to be an old type of the Nagari alphabet, although it is difficult to make out anything of the inscriptions, but it is not improbable that something of their purport might be ascertained by poring over them with attention and perseverance.

I also take the liberty to send you six ancient *Singhalese* coins dug near a Buddhist Temple at Cotta. These coins appear to be identical with those presented to the Society by Mr. Casie Chitty, of which he published an account in the first No. of the Society's Journal. He supposed, on hypothetical evidence, that these coins belonged to some of the ancient Tamil sovereigns of Ceylon, who from time to time usurped the Government of this Island; but it would appear that he is mistaken in this position. For I have really discovered that the coins in question had been deciphered so far back as 1837, by the celebrated Mr. Jas. Prinsep, assisted by the late Mr. Tournour of our own island. A most interesting account of this discovery is contained in Vol. VI. of the Bengal Asiatic Society's Journal, pp. 298-99.

Through the help of Mr. Prinsep's plates I have easily identified all the coins of this description in my possession, which belong to the following sovereigns of Ceylon.

1.—*Sri Wijaya Baha*.* (There are seven kings of this name in the list, the first of them reigned at Pollonnaruwa A. D. 1071—1126, and the last at Jayawardanatowa (Cotta) A. D. 1527—1534.)

2.—*Sri Parakrama Baha*. (There were nine kings of this name, the first of them reigned at Pollonnaruwa A. D. 1153—1186, the last at Cotta A. D. 1505—1527.)

3.—*Sri Raja Lilawatte* (Queen). A. D. 1202—1205.

4.—*Srimat Sahassa Malla*. A. D. 1205—1207.

5.—*Sri Dharmasokadewa*. A. D. 1213—1214.

6.—*Sri Bhunareka Baha*. (There were seven kings of this name, the first reigned at Zapahoo in the Seven Corles, A. D. 1303—1314, and the last at Cotta, A. D. 1534—1542.)

I have not met with any other specimens of these coins; Mr. Prinsep mentions two more, namely those of the king *Kerte Nessanga* A. D. 1192,

* Vide Turnour's Epitome of the History of Ceylon.

whose exploits are related in the Dambool inscription deciphered by Mr. Armour, and published with introductory remarks by Mr. Turnour in the Ceylon Almanac of 1834; and of Queen *Kaiyanawati*, A. D. 1207—1216.

I have also the pleasure to send you a *facsimile* of an inscription on muslin in the ancient characters deciphered by Mr. Prinsep, engraved on a cave temple at Koratotte in the Hewagam Corle. I have had no time to make an attempt at deciphering the inscription, but have at once read the words *Sugata Anagata* in the opening sentence, and I hope to be able to communicate something more of its contents to the Society on a future occasion.

Whilst on the subject of inscriptions, I may mention that I have succeeded in reading the *Mihintalle* inscription sent by Mr. Brodie. It turns out to be the same as the inscription from the same place published by Mr. Turnour in the Ceylon Almanac of 1834. It is not in the ancient character of Mr. Prinsep's Alphabet, but in a very old type of the Singhalese character.

I remain,

Dear Sir,

Your obedient servant,

Colombo, 7th February, 1852.

L. D. ZOYSA.

The Hon'ble Mr. Selby presented some copies of modifications of the Sanscrit by Captain Chapman; also the impression of a seal supposed to belong to the highest order of priesthood.

Letters were also laid on the table announcing His Excellency's willingness to become Patron of the Society; also a correspondence with the Colonial Secretary concerning the Room now occupied by the Society in common with the Loan Board.

The books laid upon the Table consisted of.—

- 21 Nos. of the Journal of the Indian Archipelago.
- 16 Nos. of Journals of Bengal Asiatic Society.
- 1 No. of the Journal of the Royal Asiatic Society of London.
- 4 Nos. of the Journal of the Statistical Society.
- 2 Quarterly Journals of the Geological Society, Calcutta Review.
- 1 No. Bombay Asiatic Society's Journal.
- 2 Nos. Bombay Geographical Society's Journal.

The only paper contributed, was Mr. Pieris's continuation of his paper on the *Materia Medica* of Ceylon.

Before dispersing, much discussion ensued as to providing a suitable room for the Society's Meetings, and for their Collections, when it was resolved to empower the Committee to take such steps to remedy the inconvenience as may seem best to them to obtain, if possible, a suitable room or building.

The Meeting adjourned.

W. S. F. NEILL,
Hony. Secy.

GENERAL MEETING, HELD 15TH MAY 1852.

Present :—The Hon'ble H. C. SELBY, Esq., in the Chair.

The Rt. Rev. J. Chapman, D.D., Lord Bishop of Colombo, the Hon'ble Sir Anthony Oliphant, C.B., Lieut.-Colonel Wilson, R.A., Major Lushington, C.B., the Rev. D. J. Gogerly, John Dalziel, Esq., E. L. Layard, Esq., J. De Alwis, Esq., J. O'Halloran, Esq., J. Lamprey, Esq., M. B., L. De Zoysa, Esq., J. L. Flanderka, Esq., Dr. J. B. Misso, R. E. Lewis, Esq., F. Straube, Esq., R. Dawson, Esq., M. Coomarasamy, Esq., Captain Neill, Secretary.

The Secretary informed the Meeting that he had had a communication from the Hon'ble C. J. MacCarthy, who was unable to attend on account of business, which disabled him also from appearing on previous occasions; this he much regretted, as he took a sincere interest in the welfare of the Society.

The Minutes of the last Meeting were then read and confirmed, and the Secretary forthwith proceeded to read the following Report of the Committee.

Report.

YOUR Committee, in submitting to the Society their Report upon the quarter which has elapsed since the assumption of their duties, have to regret that even in that short interval,

some of the most important objects to which their attention has been assiduously directed, have not yet been brought to a successful termination.

This has partly been the result of circumstances, such as the absence of influential Members entailing for a time the suspension of the Society's proceedings; and it is partly due to the difficulty your Committee have experienced in the reconstruction of a system for a long time held in abeyance, and in the recommencement of correspondence for a long time interrupted. Your Committee are happy, however, to be able to speak in favourable terms of the present position and prospects of the Society.

Your Committee prefer to call the attention of the Society first of all to the statement of the Treasurer, marked A., and attached to this Report. From this it appears that there is a clear balance in favour of the Society of £13 18s. 2d.; nor is this to be considered the whole revenue for the year, for of the 62 Members which compose the Society, not more than 11 have as yet been called upon, through an unavoidable delay, to pay their annual subscription for 1852. It may therefore reasonably be presumed, that the balance in favour of the Society will not be less than £100.

But, while your Committee cannot view such prosperous circumstances but with the most sanguine satisfaction, they still believe that the best interests, if not the very existence of the Society, depend upon the prompt but judicious application of its finances to the furtherance of those principles and undertakings which suggested its institution.

Your Committee are of opinion, that the expenditure of the Society should be divided into three classes. In the first, your Committee would include that necessary for the publication of the Society's Journal. To the out-station Members, who form a great proportion of our numbers, and by whose support and ability the Society has hitherto so largely benefited, the publication and distribution of our Journals is the only com-

pensation we can render for their subscriptions as well as for their unwearied and disinterested co-operation. By our Journals also, we maintain, better than by other means, our connection with the Parent and all other kindred Societies. Nor is the country whose peculiarities it is our duty to describe and investigate, at all deficient in interest; indeed there is, on the contrary, scarcely a region of the earth where such a rich harvest is ripe and ready for the most various-enquiry, or from which such a Society as our own could draw so large a crop of useful facts. Besides having been the great head quarters of Buddhism, and long the seat of an active and splendid monarchy, Ceylon is the theatre where nature has displayed as many and as curious attractions as any portion of the Globe. But though compact and full of interest, the Island has been but indifferently examined; the world knows almost as little of Ceylon as it does of Java, and certainly, as far as History is concerned, far less than it does of China. We have been so partial and fragmentary in our Geological investigations, that we possess no summary of those probable contingencies which gave to it an existence. Botany has been almost as much overlooked. Long before this time, had his valuable life been spared, we should have derived from the great talents and the large experience of Dr. Gardner, a knowledge of that wonderful vegetable wealth wherewith we are so profusely surrounded; but even if he had been spared to us, it is more than probable that he would have left the wide field of the *algæ* almost untouched. As it is, your Committee cannot congratulate the Society on the amount of its botanical facts; the admission is made with regret, the more so as it applies to Conchology, Meteorology, Natural History, Archaeology, and in a great degree to other sciences and subdivisions of sciences. Your Committee, among other deficiencies which they would wish to see supplied, remark the general absence of Historical contributions. This is the more to be regretted, as it is generally felt that the history of Ceylon abounds in all

those incidents which give a charm and an interest to the records of a nation's career, and also because those gentlemen who have treated the subject hitherto, have substituted compilation and narrative for history, and have failed to advance those philosophical views, without which, it will not satisfy the requirements of the present age. Your Committee would also be happy to see more papers on Statistics; on the adaptation of the Island for Railroads; on the best mode of arranging Electric Telegraphs; on the advantages of introducing malleable iron in the construction of Bridges, as has recently been done in England with so great economy and success; these, and many other subjects of great practical importance might, it is believed by your Committee, be most appropriately received into such a Journal as the Society wish to establish. Again, in reference to the treatment of purely Oriental subjects, your Committee, seeing the attention of the Parent Society so much and so successfully devoted to the subject of Buddhism (vide Major Cunningham and Captain Chapman's papers in the last number of the Journal), cannot overlook how much that subject might be elucidated by systematic and active enquiries on the spot; nor can your Committee deem it probable that such enquiries, when superintended by the great erudition of the Rev. Mr. Gogerly, the Rev. Mr. Palm, Mr. De Zoysa, and other Oriental scholars, would fail of attaining the most complete success. This view of the case has been confirmed by the receipt by last mail of a letter from Captain Chapman, marked B., and attached to this Report, in which that indefatigable Orientalist invites the attention of the Society to specific points of importance, and requests answers to various questions. Your Committee are of opinion, that a correspondence such as that commenced by Captain Chapman, could only be continued through the instrumentality of small Committees of two, three, or four members each, and specially charged with the duties peculiar to the department of knowledge or enquiry over which they respectively preside,

and on which they should be required to make reports at stated intervals to the General Committee. By this means a great proportion of the sciences would be represented by the various Committees, and a character of systematic and continuous research impressed upon the proceedings of the Society. A resolution to this effect will be made, and if acceded to, the various Sub-Committees forthwith formed. The above recapitulation, and it could be extended, is not one calculated to give your Committee much pleasure, but still less does it provoke any feeling like despondency, for your Committee are not more assured that there are in the Island the materials for the most various and important investigations, than that there are men able and willing to bring them to light. Your Committee will therefore submit to the Society, that a certain sum be given to the reading Committee, the Report of which, marked C., is laid upon your table, to enable them to publish as soon as they shall deem fit. In the second class of expenses, your Committee would include those for the purchase of books and the furnishing of the Museum. The only outlay incurred by the Society at present for the first, is for the Calcutta Review, the Geological Journal, and the Statistical Journal, so that it would be easy to afford a little sum of money for the purchase of valuable standard works this year. Your Committee would not presume to specify any books, but it is their opinion that none but standard works should be purchased at present, and that a good and cheap Bookseller be employed. On this subject your Committee have to remark, with extreme regret, that many valuable volumes, some of them belonging to series, are not now to be found in the Library. Your Committee subjoin a list, marked D., of those that are deficient, and they confidently hope that any Gentleman who happens to have any book belonging to the Society in his possession, will apprise the Secretary without delay, as that officer is now completing his Library list; and it would be most desirable to recover as many books as pos-

sible. Your Committee may state, that they now employ the services of a Librarian at a slight remuneration, he is always in the office, and has the keys in his possession, so that any Member can at any time receive any work which is in the Library, the Librarian taking note of his name and the date of issue. In reference to the Museum, your Committee have not presumed to decide how it should be supported, whether from the general funds of the Society, or from a fund to be continued in aid of itself and styled the Museum Fund. The question will be submitted to your determination, as will also some supplementary ones in reference to its maintenance and improvement; at present your Committee are happy to be able to state that its condition is by no means a bad one. The careful investigations of Mr. Layard assure us, that there are of birds the specimens of 260 species, of which 175 are fit for mounting; and it is possible that within a very short time the efforts of Dr. Kelaart, Mr. Layard, and others, could render great and complete accessions to this and most other provinces of Natural History. Of shells, there are about 300 species, and Mr. Layard has promised the addition of no less than 200 more. The department of Mineralogy is also satisfactorily represented; and indeed your Committee are assured that the Museum at present is in so satisfactory a condition, that nothing but a just amount of the Society's patronage is sufficient to elevate it to utility and excellence. On this subject, your Committee have much pleasure in inviting the attention of the Society to a letter from E. L. Layard, Esq., to the Secretary, displaying his usual sound sense and zeal for the Society's welfare: it is marked E., and is attached to this Report.

The last and third class of expenses is that connected with the Instruments of the Institution. It would appear, from the accounts of the Treasurer's department, as also from the proceedings of the Society, that many instruments have been bought, of which no record now remains. The instruments

at present in use, consist of a Barometer, three Hygrometers, a Standard Thermometer, a Rain Guage, and a Scale Ruler; but others have been bought previous to these, and nothing is now known of them. It is impossible to conduct a wide and important Meteorological Survey with such assistance only as these instruments could render; and your Committee feel assured that the scientific department of the Society's operations is entitled to its share of support. Your Committee are of opinion, that for a very slight outlay a series of instruments could be purchased, which would illustrate and assist scientific investigation of a very extended character. They judge, however, that as far as Meteorology is concerned, not much expense should be incurred in the purchase of Thermometers. Some of those instruments can be bought in Colombo, of a good construction and at a low price, which can be rigidly compared with the excellent standard instrument of the Society, their error, if any, detected, and themselves adapted at once to the purposes of Hygrometers. It is not saying too much, that the outlay of £3 would enable the Society to transport at once to Trincomalie, Newera Ellia, and Galle, instruments which would yield the most useful and important results. Of course, this is not meant to apply to the self-registering thermometers, some of which it would be advisable at once to procure from the best maker in London. Your Committee deem, however, that the greatest benefits would accrue from the possession of such instruments as the Electrometer, Actinometer, the Polariscopes, and those others which indicate the phenomena of light, radiation, and atmospheric electricity. A Photographic apparatus, by which temples, statues, and inscriptions and tracery, however elaborate and minute, could be faithfully delineated, is however the instrument of which your Committee would wish to see the Society possessed as soon as possible. The records which it would give of the architecture and antiquities of Ceylon, would assist research, and would probably discover many coincidences

now unobserved or unknown. An Electro-plating machine, which could be purchased for very little here, would enable the Committee to multiply casts of coins, &c., specimens of which might be submitted to Numismatic and other Societies. Your Committee cannot close their remarks in connection with the expenditure of the Society, without expressing the hope, that as Ceylon so plentifully abounds in materials from which an institution like the present could select so much that is important and curious, that so now will all its Members unite vigorously in the effort to advance its objects and its importance; to bring to light the wonders of this unexplored and interesting Island; and to shew ourselves worthy of our connection with the Parent Society, in our indefatigable investigation of what was so grand in the past, and is so attractive in the present. To realise completely some of the advantages which may surely be anticipated, it is the opinion of some Members of your Committee, that as much as possible should be encouraged, the formation of Provincial Committees, affiliated with and subordinate to the Committee at Colombo, with which they would be brought into systematic and continued correspondence. Upon the expediency of this measure, the Committee refrain from giving any opinion, deeming that it had far better be decided by the vote of the Society itself. In connection with their own immediate transactions, the Committee have to refer to the Report of two Sub-Committees, marked F. and G., and attached to the proceeding which they directed, so far back as 16th February 1852, to confer with the members of the Athenæum, to see if the two Societies might not unite, to a certain extent, in the furtherance of views and objects common to both; and also whether a more commodious room might not be procured for the Society. On the first of these points, your Committee are aware of a great diversity of opinion among their own Members; and therefore they gladly avail themselves of the occasion of a General Meeting to bring the question before it. On the

second of these questions, your Committee are of opinion, that the expense constitutes a very great objection to any change of residence for the present. Your Committee cannot close their Report without referring to the loss which they have sustained from the absence of Dr. MacVicar. They feel assured that he would have been a most willing and able co-adjutor in our present efforts to renew the profitable and important enterprises appropriate to our Society, and that his endeavours would have elicited the same appreciation which the Parent Society once so markedly expressed. Other withdrawals from the ranks of the Society, and not so temporary as it is hoped will be that of Dr. MacVicar, your Committee have great regret in remarking, even though the loss is more than made up by the recent additions to our numbers.

Your Committee append a list of books they have received since last meeting, marked H. and attached to the Report, which, as well as the correspondence of the Society, the Report of the Sub-Committees, the Meteorological observations of Captain Higgs, Trincomalie, and Captain Neill, R. A., Colombo, they now submit for your inspection; and they close their Report with the confident hope, that before the next General Meeting their efforts to increase the utility and activity of the Society will be attended with success.

W. F. SMITH NEILL,
Secretary.

List of Papers, &c., put upon the Table.

- A. The Treasurer's Report.
- B. Two letters from Captain Chapman, with a seal, and two copies of Prinsep's Alphabet.
- C. Report of the Committee on papers.
- D. List of missing books.
- E. Letter from Mr. E. L. Layard to the Secretary.
- F. Report of Committee appointed to confer with the Committee of the Athenæum.
- G. Report of the Committee appointed to seek for better accommodation, &c.
- H. List of books received since the last Meeting.

- K. Letter from the Numismatic Society, 10th Dec. 1850.
- L. Letter from the Royal Asiatic Society, 16th Nov. 1850.
- M. Letter from the Royal Asiatic Society, 15th Nov. 1851.
- N. Specimens of Dr. Kelaart's Prodrömus.
- O. Catalogue of Books in Library.

It is not deemed necessary that all the foregoing papers be printed, but only

- A. The Treasurer's Report.
- B. Captain Chapman's correspondence.
- C. Report on Committee of papers.
- H. List of books received since last Meeting.

W. F. SMITH NEILL,
Secretary.

Resolutions.

1.—Major Lushington, C. B., then moved, that the Report which had just been read be adopted; and the motion being seconded by M. Coomarasamy, Esq., was carried unanimously.

2.—It was moved by J. L. Flanderka, Esq., that a sum not exceeding £20 be given to the Reading Committee, with which to effect the publication of the Society's Journal as soon as they shall deem fit; and this motion being seconded by E. L. Layard, Esq., was carried unanimously.

3.—Moved by Dr. J. B. Misso, that a sum not exceeding £12 be set apart for the purchase of books, which the Committee shall afterwards select; and this motion being seconded by Captain Neill, was carried unanimously.

4.—Moved by the Hon'ble H. C. Selby, that small Committees be formed, to which different enquiries be entrusted; that there be first an *Oriental Committee*, composed of the Rev. D. J. Gogerly, President; Members, the Rev. J. D. Palm, J. Alwis, Esq., L. De Zoysa, Esq., and M. Coomarasamy, Esq., who will charge themselves with the elucidation and superintendence of all subjects connected with the Religion, History and Antiquities of the Island. Secondly, that there be a *Committee on Statistics*, composed of J. Dalziel, Esq., President; Members, Dr. Kessen, Dr. Misso, R. Dawson, Esq., R. E. Lewis, Esq., to superintend that department of enquiry; that there be lastly, a *Committee on Science*, composed of Lieut.-Colonel Wilson, R. A., President; and Members,

Major Lushington, C.B., E. L. Layard, Esq., and Dr. Lamprey, who will not only conduct the business of the Museum, but charge themselves with all the Scientific duties which may devolve upon the Society; and this motion being seconded by J. L. Flanderka, Esq., was carried unanimously.

5.—Moved by Lt.-Col. Wilson, R. A., that a sum not exceeding £12 be set apart for the purchase of instruments which the Committee on Science shall afterwards select, and this motion being seconded by J. De Alwis, Esq., was carried unanimously.

6.—Proposed by E. L. Layard, Esq., that the Museum funds, at present amounting to £6 12s., be handed over to the Committee on Science for the service of the Museum, and that the Treasurer be entitled to receive for the Museum donations only from new Members, and donations or subscriptions from Members of the Society, and this motion being seconded by Dr. Misso, was carried unanimously.

7.—Moved by R. Dawson, Esq., that the Secretary be instructed to recommend, in his correspondence, the institution of Provincial Committees at Jaffna, Trincomalie, and elsewhere, for the purpose of more efficiently conducting extensive and important enquiries, and for advancing the general interests of the Society; and this motion being seconded by Mr. Flanderka, was carried unanimously.

8.—Moved by J. Dalziel, Esq., that this Society consent to unite with the Athenæum in making a joint application to Government, with a view of obtaining apartments for their common use; and this motion, being seconded by L. De Zoysa, Esq., was carried unanimously.

9.—Moved by the Rev. D. J. Gogerly, that three gentlemen, viz., The Hon'ble H. C. Selby, Major Lushington, C.B., and the Secretary, be requested to wait upon His Excellency, when they shall have opportunity, to confer with His Excellency on the behalf of this Society; and this motion being seconded by Lt.-Col. Wilson, R. A., was carried unanimously.

Mr. L. De Zoysa then submitted to the Society for their inspection a Burmese letter.

The following gentlemen were then proposed for election as Members of the Society and unanimously elected.

G. S. Duff, Esq.	.	.	{	<i>Proposed by R. Dawson, Esq.</i>
			{	<i>Seconded by J. de Alwis, Esq.</i>
Lt. Schaw, R. E.	.	.	{	<i>Proposed by Capt. Neill, R. A.</i>
			{	<i>Seconded by E. L. Layard, Esq.</i>
Dr. Hoffmann	.	.	{	<i>Proposed by Lieut.-Col. Wilson, R. A.</i>
			{	<i>Seconded by M. Coomarasamy, Esq.</i>
S. Worms, Esq.	.	.	{	<i>Proposed by Capt. Neill.</i>
			{	<i>Seconded by J. Dalziel, Esq.</i>
T. Berwick, Esq.	.	.	{	<i>Proposed by Lieut.-Col. Wilson, R. A.</i>
			{	<i>Seconded by Mr. Flanderka.</i>

A.

TREASURER'S ACCOUNT.

				Total Ar- rears col- lected.	
Subscriptions, Arrears col- lected for 1849	£.....	.....		
do. do. 1850	4 4 0				
do. do. 1851	23 2 0				
		27 6 0	27 6 0		
do. For current year 1852	.....	11 11 0	.....	38 17 0	
Entrance fees collected .....		.....	.....	2 12 6	
Museum Fund, Arrears cltd. 1850	3 0 0				
do. do. 1851	3 0 0	6 0 0	6 0 0		
do. For Current year 1852	.....	0 12 0	33 6 0	6 12 0	
Total amount collected	.....	.....	.....	48 1 6	
Cash received from the Hon'ble the Colonial Secretary	.....	.....	.....	6 7 8	
Balance received from Ex Treasurer	.....	.....	.....	32 3 1	
				£86 12 3	
Payments: old accounts, Mr. Lewis	30 5 9				
do. Thacker & Spink	1 15 6	.....	32 1 3		
Small items, current expenses	.....	.....	0 12 10	32 14 1	
Balance—deposited with Oriental Bank Corporation.....	.....	.....	53 0 6		
In hands of Treasurer ...	.....	.....	0 17 8	53 18 2	
				£86 12 3	

Colombo, 14th May, 1852.

E. & C. E.

ROBERT DAWSON,

Treasurer.

B.

To the Secretary, Ceylon Branch, Royal Asiatic Society, Colombo.

SIR,—I venture to beg the acceptance, by the Society, of a second copy of a joint communication which the Royal Asiatic Society has done me the honour to insert in its Journal for the present season, because a copy of “Prinsep’s Modifications of the Sanscrit Alphabet” is inserted in it to facilitate comparison.

I also beg the acceptance by the Society of two additional copies of that alphabet.

With my best wishes for the prosperity of the Branch in Ceylon,

I have &c.,

S. J. CHAPMAN.

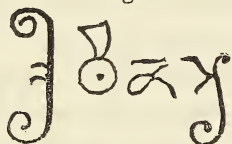
Athenæum Club, Pall Mall, London, 18th Feb., 1852.

London :—Athenæum Club, 20th Feb., 1852.

SIR,—May I also take the liberty of begging your kind assistance in the following points :—

First,—Sir Woodbine Parish has in his possession an onyx engraved nearly as follows :—

fig. 1



which, according to Prinsep, means

The r o


३ १ ९ ५

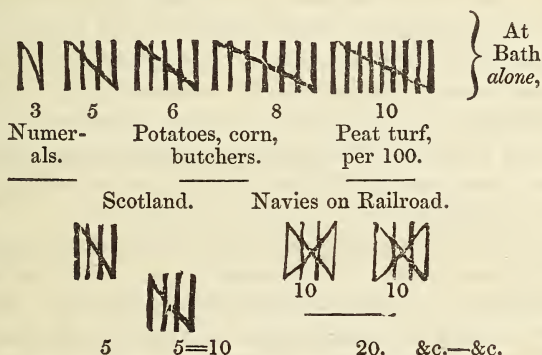
The first character is supposed to be a Monograph, in which () are supposed to be Sri. The character comes nearest to Sri of the Third and Fourth Centuries.*

The other letters form Thero, “the highest of the high priests among Buddhists.” But although the substitute for Sri is placed before titles amongst other Buddhists, and even before Dharma, as Sri Dharma, Professor Wilson is not willing to take this my interpretation “Sri Thero.” I therefore shall be much obliged to you, if you can obtain any information on the subject. The Singhalese kings made use of Monographs on their coins; the priests were allowed to have seals, and according to the Bible the names of the Ten Tribes were engraved on an onyx. I am

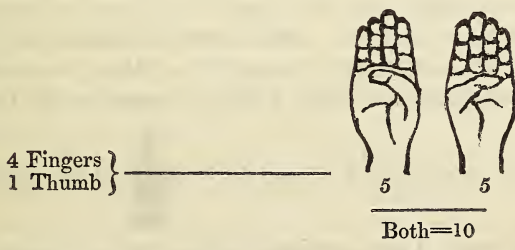
* In orig: du. PRINTER.

therefore inclined to believe it to have been the seal of office borne by Theros.

Secondly,—To ascertain whether any score or tally is kept by the Kandyans or Singhalese, or by the troops,—Malays, Africans, or Arabs, &c., or in the Shipping which frequent the Ports of Colombo, Galle and Trincomalie, of this kind  or “4 perpendicular right lines cut by an oblique diagonal, the 4 right lines being each one, and the diagonal also one.” I have traced, with the assistance of numerous correspondents, modifications of this principle, viz :



I have found it among the most illiterate of Irish, from thence across England to Norway, and thence to Scandinavia, to M. N.* To the East I have found it to exist in France, Central Germany, Italy, and Genoa. And I am particularly anxious that this enquiry shall be carried on in the East, particularly in the neighbourhood of the hills in Kandy, of the Nilgherries, and the country about the Himalayahs. I make this enquiry, because I hope to shew that the Cadmean Alphabet was derived from these numerals—the scale of Nature herself—the hands



* The nearest approach to MS., PRINTER.

It is probable that some of the visitors to Newera Ellia, may have it in their power to follow up my enquiry, not only there, but on the Himalayah.

By making this as public as you can, you will much oblige,

Yours faithfully,


S. J. CHAPMAN.

Athenæum Club, London, 17th March, 1852.

SIR,—Last month I endeavoured to avail myself of the kindness of the Colonial Department, to send, addressed to you, a copy of an article in the last number of the Royal Asiatic Society's Journal, entitled "Some additional remarks upon the city of Anuradhapoora, and the Hill Temple of Mehentela in the Island of Ceylon," which the Society did me the honour to insert. As I have reason to believe that the parcel will not have been sent, but will be forwarded by this Mail, I venture to address you further.

It will be seen that the paper is wholly historical, and that it rests as authority upon Turnour's Mahawanso, even for the date assigned to Chandra Gupta, viz., 381 years before the Christian era. This date is disputed, as being at variance with that of the Greek Sandracottus; but as this fact was not only known but fully discussed in the Introduction and Appendix to the Mahawanso by Mr. Turnour, I did not feel justified in departing from his authority. Therefore, I contented myself with saying, that this important but disputed date is fixed; but when I take the elaborate examination of this difficult point by Professor Wilson, into consideration, I feel that it would have been much more satisfactory, if the words, "but disputed" were inserted. You will, therefore, very much oblige me if you will have the kindness to make this correction *at my request*.

The communication from Major Cunningham of the contents of the Topes around "Surihi," page 108, naturally turns our attention to every thing connected with Budhism. I shall, therefore, mention some points which appear to me of interest. In page 221 of Davy, is an account of the contents of a Dagoba at Cotta, which was opened by Mr. Layard in

1819 or 1820. In one corner of the floor is  which is not de-

scribed, but which I have mentioned as like a *king of Chessmen*. On

referring to page 114 of the Journal we find



another figure.

May not this have been the object? and may not the Monogram there given lead to the explanation of (Fig: 1) the engraved seal; of which I have enclosed an impression. The reading which I have ventured to give is this, viz.: Sri Thero or Holy Hierarch, (as Maha Kassapa, &c.), is not considered admissible, first, because the term Sri is not thus used, and in the second place, because vowels after consonants are expressed by a line, initial vowels alone have a character assigned.

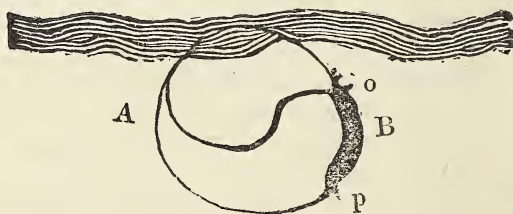
Σ
Σ
Si wa
XIF
Ma
I. u
J. ka

Sewa
Muka
A.D. 44.

It would be highly desirable, if both these objections could be either confirmed or disproved, not on account of the seal only, but because there is a Rock Inscription near Pomparipo, in which can be made out "the name of a king of Ceylon," provided a vowel *letter* may be used when intermixed with consonants, and not an initial. Possibly some of the priests can decide both of these points. In the same Dagobah were found numerous minute Dagobahs about $1\frac{1}{2}$ inch by $1\frac{1}{4}$. They had an inscription either on the inside of the flat base or on the opposite surface; they were comparatively abundant when I was in Ceylon (1828, 1829), and possibly are to be got at present. It will be interesting to ascertain whether these Dagobahs are substitutes for the square stone boxes, on the lids of which were inscribed the

names of those persons whose relics were buried in the large Dagobahs, page 100 of Journal. Very recently three Prayers on vellum about 14, 15, and 12 inches in length, and rolled tightly so as to form a cylinder $1\frac{1}{2}$ inches in length and $\frac{3}{4}$ inch in diameter, were found within a group (I must call it), consisting of a man or some animal surrounded by grotesque heads and human figures, placed on a pedestal about the size of a common plate. The base was covered with some kind of paper; and when this was cut, the three rolls made their appearance. They were taken to the Nepaul Prince, who said and wrote that they were Budticka or prayers of Budha, either from Hindostan, Thibet or China. May not this be one of the many representations of the acts of Gautama which were buried in Ruanwella, "the sight of which gave King Bhategoso much pleasure," page 175, Journal; and may not this serve as a clue to other groupes equally grotesque? Only a small part of the group remains, which I have seen. There is one head painted blue and sur-

mounted by a conical mound, on which are three rows of projecting prominences; these three lines appear to refer to Siva. The forehead is strongly gilt. The prayers have not been deciphered, but I have taken steps to procure them, and shall submit them to Professor Wilson. On turning to the plate, p. 80, Journal, the Sumbunath has seven stories or circles, in what I shall call its steeple. At page 72, these are described as meaning "the seven heavens." On referring to my drawing of Lanka Rama, and of Mehentelle, as well as of my friend, Captain Weller, (See Vol. III. Trans: Plates), the same number of circles will be found, although the Lithographer, in the case of Lanka, has made only four. It now only remains for me to beg, that attention may be paid to the importance of the equilateral triangle in Budhistical buildings. According to my rough memoranda, every religious building is, as regards the *frame work*, made up of these triangles, as well as the *tae-kieh*,* in the construction of Tanks. My attention to it was first attracted by Tissa Wewa at Anuradhapoora.



Let A. B. represent the lake; o, p, will be the embankment. This is carried far above the highest ground so that when sufficient water is enclosed, it may fall into the lower levels A—o. A—p. The crest of the embankment is thus guarded against accident; and the supply of water beyond the embankment being issued by means of syphons passing from the bottom of the water below, or beneath the embankment, it is guarded from this danger. Judging that "everything Budhistical," is done by rule, I cannot but think that the peculiar construction of the *tae-kieh* is devoted to some peculiar purpose.

In the hope that the particulars detailed in this letter, may induce others to take up the investigation, whilst in the head quarters of Buddhism, I remain, yours faithfully,

S. J. CHAPMAN.

* As near as can be made out from M.S.

C.

Report of the Committee on Papers, Colombo, 10th May, 1852.

Present:—Dr. Lamprey, 15th Regt.; Captain Neill, R.A.

THE Committee upon papers having met, pursuant to the Resolution No. 1 of the Committee Meeting, bearing date 19th April, 1852, proceed to the examination of the various papers contributed by several gentlemen, and long in the possession of the Society. The Committee commence their observations by remarking the absence of the paper from Mr. Herft, in which he gives a most able summary of the statistics of an important district. It was compiled some time ago, and displayed great ability, care, and labour. The Committee would recommend, that Mr. Herft be consulted as to whether, in the interval which has elapsed since the transmission of his paper to the Society, he may have any old facts to amend, or new facts to record, and whether he will supply the Society again with a copy of his excellent paper.

The Committee directed their attention to the several manuscripts in succession. The first, entitled "Remarks on Singhalese Medicine," is a paper in which considerable research is evinced, and upon which some labour has been expended. The Committee think, however, that it could be advantageously condensed; and besides, they deem that the subject of which it treats is one which ought to be submitted to professional judgment, before it could be inserted in the Journal. The next paper is an outline of the Tamil system of Natural History, by Simon Casie Chitty, Esq., and is a paper of considerable value. The next is the Statistical Account of the Districts of Chilaw and Putlam, North Western Province, by Mr. Brodie. This is an excellent paper, though the Committee would advise, that before it were published, Mr. Brodie should be consulted as to any amendments or additions he might be now inclined to make. The last MS. which the Committee have examined, is from the Rev. Mr. Gogerly, entitled "The Laws of the Buddhist Priesthood." This is, like every other of the productions of that gentleman, full of interest and instruction.

The above enumerated manuscripts are those only which the Society has at present in its possession; but the Committee would observe, that circumstances only have delayed the appearance of others of great interest. Dr. Lamprey is at present employed on a very interesting subject; Captain Neill is preparing a large paper; and the Committee are informed by the Secretary of the Society, that he has received from several correspondents, the declaration, that they are ready to contribute

to the Journal of the Society, whenever they are assured that the Society is earnest in its intentions of publishing.

The Committee, in conclusion, are of opinion, that there already exist manuscripts, which united with those which may confidently be expected, would compose a very interesting Journal; and it is their recommendation, that the Society do recommence its publications.

W. F. SMITH NEILL,
Secretary.

H.

List of Books received since last Meeting.

1.—Some additional remarks upon the ancient city of Anoorajapoora, by Captain Chapman.—*Donation from the author.*

2.—The Numismatic Chronicle, Nos. 47, 48, 49, 50, 51.—*Donation from the Numismatic Society.*

3.—Proceedings of the Numismatic Society, Session 1849, 1850.—*Donation from the Numismatic Society.*

4.—The Quarterly Journal of the Geological Society, Part I., Vol. 8, No. 29.

5.—Journal of the Royal Asiatic Society, Vol. 13, Part I, Vol. 14, Part I.

6.—Journal of the Statistical Society of London, Vol. 14, Part IV.

7.—Rudimenta Mythologiæ Semiticæ Supplementa Lexici Aramaici, by Paulus Boetticher.

8.—Journal of the Indian Archipelago, Vol. 6, No. 1.

9.—Calcutta Review, No. 32.

10.—Transactions of the Bombay Geographical Society, April to September, 1848.

11.—Journal of the Asiatic Society of Bengal, No. 7.

W. F. SMITH NEILL,
Secretary.

SPECIAL MEETING, HELD 24TH JULY, 1852.

Present :—Rev. D. J. Gogerly in the Chair.

Rev. J. Kats, Messrs. M. Coomarasamy, Dr. Misso, L. De

Soyza, F. Straube, Dr. Lamprey, Lieut. Schaw, E. L. Layard (*pro Secretary*).

Minutes of last Meeting not read, because not given over to Mr. Layard by the Secretary, who had gone to Kandy.

Read letter from Capt. Neill, tendering his resignation as Secretary to the Society, he having been removed to Kandy. Resolved, that Capt. Neill be requested to continue his functions as Secretary to the Committees at out-stations, and that Mr. E. L. Layard be requested to accept the office of Secretary to co-operate with Capt. Neill.

Mr. Layard accepted the office.

Read a letter from J. N. Mooyaart, Esq., relative to the resuscitation of the Local Committee in Jaffna. The subject therein alluded to was, after much discussion, laid over till the next General Meeting, which was fixed for the 21st of August.

Read a letter from A. O. Brodie, Esq., Anoorajapoorra, forwarding a diagram of the Singhalese numerals. Mr. L. De Soyza was requested to examine them and afford the Society some information concerning them.

E. L. LAYARD,
Secretary.

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THIRD QUARTERLY MEETING, HELD 21ST AUGUST, 1852.

*Present* :—The Hon'ble Mr. Justice STARKE in the Chair.

The Rev. D. J. Gogerly, Rev. J. D. Palm, Rev. C. Alwis, Rev. J. Kats, Messrs. L. De Soyza, M. Coomarasamy, and the Secretary.

Read a letter from the Treasurer expressing his regret that business caused him to be absent, and informing the Society of the state of its funds. The Minutes of the last Meeting having been read and signed, the Chairman stated that with

reference to the 7th Resolution passed on the 15th May last, he had, when lately in Jaffna, conversed with Mr. Mooyaart the Chairman of the local Committee there, on the establishment of Local Auxiliary Societies throughout the Island, to co-operate with the Society in Colombo. After much conversation it was agreed to refer the matter to the Committee, with instructions to bring the subject before a Special Meeting to be called for the purpose.

The Secretary brought to the notice of the Meeting the necessity of employing a peon to distribute its notices and attend to the cleaning of the room. On the motion of the Chairman it was left to the Secretary to engage a person, and to report the matter to the Committee for its approval.

Read a letter from Captain Neill, dated August 9th, 1852.

It was thereupon resolved, that the Vice-President, the Rev. D. J. Gogerly, and the Secretary, do wait upon His Excellency the Governor, to request the assistance of the Government in printing the Society's Journal.

Read a letter from the Rev. D. J. Gogerly to the Secretary, stating that some books belonging to the Society had been brought to his house for sale, and that he had forwarded them to be detained until enquiries could be made into the circumstances.

The Secretary stated that he had traced the books into the possession of a late member of the Society, who having quitted the Island unexpectedly, had left a number of books for sale; and these had been included among them by mistake by the party managing the transaction. He (the Secretary) regretted to observe that two vols. of the same series were still wanting, and he would move that Colombo subscribers should return books borrowed by them from the Society's Library, at every quarterly meeting. Out-station subscribers half yearly. The Chairman moved, as an amendment, that in the first instance books should be returned every three weeks, in the second every six weeks; the Rev. D. J. Gogerly seconded the amendment.

The Rev. J. Kats begged to move, as an amendment, that the first period should amount to one month, the second to one month and fifteen days. Mr. Coomarasamy seconded the motion, which being put to the Meeting was lost. Mr. Layard withdrawing his motion in favour of the Chairman, the following amended motion was put, and carried by a majority of the Members voting.—“That all books borrowed by Members resident in Colombo should be returned to the Library every three weeks; that all books borrowed by Members residing at out-stations should be returned every six weeks; that periodicals should not be retained, either in Colombo or at out-stations, for a longer period than 14 days; and that all books or pamphlets should be returned to the Library, at least one week before the Anniversary Meeting, to be inspected and reported on by the Librarian.”

The Secretary brought to the notice of the Meeting, the expediency of keeping Catalogues of the Donations presented to the Museum, and books for the registration of the names of Subscribers borrowing books. He was authorized to procure the necessary blank books for the purpose.

The Secretary then begged to propose the following gentlemen for admission as Members of the Society, Messrs. H. Mooyaart, F. Flanderka, F. Gisborne, and F. Campbell, all of Jaffna. He proposed them in virtue of his office as proxy for the Chairman of the Local Committee in Jaffna; and being personally acquainted with them, he begged to second them in his own name.

The Chairman and Vice-President objected to this course of procedure; the Rules of the Society did not provide for the proposal of Members by proxy.

The Secretary stated that nothing was laid down in the Rules on the subject; they simply required candidates to be proposed by one Member and seconded by another.

Mr. Gogerly objected to the procedure, agreeing with the Chairman. The Secretary contended that he had precedent for the course he had adopted, but bowed to the decision of the



Chairman; and to avoid disappointment to the gentlemen before named, he would take upon himself the gratification of proposing them, trusting to their being seconded by some gentlemen present. He begged, however, to give notice of his intention to submit the matter to the consideration of the next General Meeting, in the shape of a special motion, as he considered the restriction calculated to act prejudicially on the interests of the Society; and to take from the out-station Members one of the few privileges they enjoyed. Another candidate to-day stood in the same position.

The following gentlemen were then elected Members of the Society.

|                          |   |                                        |
|--------------------------|---|----------------------------------------|
| H. Mooyaart, Esq. .      | { | <i>Proposed by Mr. E. L. Layard.</i>   |
|                          | { | <i>Seconded by Rev. D. J. Gogerly.</i> |
| H. Byrne, Esq. .         | { | <i>Proposed by Mr. E. L. Layard.</i>   |
|                          | { | <i>Seconded by Rev. J. D. Palm.</i>    |
| F. Flanderka, Esq. .     | { | <i>Proposed by Mr. E. L. Layard.</i>   |
|                          | { | <i>Seconded by Mr. Coomarasamy.</i>    |
| F. W. Gisborne, Esq.     | { | <i>Proposed by Mr. E. L. Layard.</i>   |
|                          | { | <i>Seconded by Rev. J. Kats.</i>       |
| F. H. Campbell, Esq.     | { | <i>Proposed by Mr. E. L. Layard.</i>   |
|                          | { | <i>Seconded by Mr. Coomarasamy.</i>    |
| H. Dudley, Esq., C.R.R.  | { | <i>Proposed by Mr. E. L. Layard.</i>   |
|                          | { | <i>Seconded by Mr. Justice Starke.</i> |
| R. Gerhard, Esq. Kandy . | { | <i>Proposed by Rev. D. J. Gogerly.</i> |
|                          | { | <i>Seconded by Mr. E. L. Layard.</i>   |
| Don Domingo Wijaya-      | { | <i>Proposed by Mr. L. De Soyza.</i>    |
| sinhe, Mohandiram Kandy  | { | <i>Seconded by Rev. Mr. Alwis.</i>     |

Read a letter from the Colonial Secretary, transmitting by order of His Excellency the Governor, a copy of Magnetical and Meteorological observations, made at the Cape of Good Hope Observatory, printed by order of Her Majesty's Government.

It appeared, on reference to the title page, that the work had been forwarded from England by order of the Government to the Governor of Ceylon, to be presented to such Literary or Scientific Institution in the Island as to His Excellency should seem fit, and that His Excellency had himself addressed it to this Society.

It was unanimously resolved, that the Society do, through their Secretary, convey to His Excellency Sir G. W. Anderson, their best thanks for the donation thus handsomely made to their Library.

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*Presented by the Board of Regents of the Smithsonian Institution.*

Vol. II. Smithsonian Contributions to Knowledge.

Fourth Annual Report of the Board of Regents of the Smithsonian Institution, for the year 1849.

Report of the Smithsonian Institution, on the discovery of the Planet Neptune, by Benjamin Apthorp Gould, jun.

Notices of Public Libraries in the United States of America, by Charles C. Jewett, Librarian of the Smithsonian Institution.

Proceedings of the American Association for the Advancement of Science—Fourth meeting, August 1850.

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With reference to the Singhalese numerals, sent to the Society by Mr. A. O. Brodie from Anoorajapoorra, laid before the last Meeting, and entrusted to Mr. L. De Soyza for examination and report; Mr. De Soyza stated, that having in the course of his inquiries into the subject met with some interesting facts, he proposed embodying them in a short paper, which he trusted would be ready by the next Meeting.

Mr. Gogerly then read a paper on Budhism.

The Rev. C. Alwis moved that the paper then read be sent to the Reading Committee for report; the Rev. J. Kats seconding the motion, it was carried.

The Secretary representing that a vacancy existed in that Committee, occasioned by the removal of Captain Neill to Kandy, it was resolved that the Rev. C. Alwis be requested to fill the said vacancy. Mr. Alwis accepted the proposal.

Mr. Layard exhibited the Society's shells, and the additions he had made to them, arranged in some slight order; but stated he had not consulted the members of the Committee on Science on the final arrangement or disposition of them, therefore made no report. The Meeting then adjourned.

E. L. LAYARD,  
*Hony. Secy.*

## GENERAL MEETING, HELD 2ND OCTOBER, 1852.

*Present :—*Lieut.-Colonel WILSON in the Chair.

Rev. J. Kats, D. J. Gogerly, C. Alwis, Messrs. J. Dalziel, M. Coomarasamy, J. De Alwis, L. De Soyza, H. Dudley, C.R.R., C. Lorensz ; Lieut. Schaw, Dr. Lamprey, Dr. Misso, R. Dawson, Esq., Treasurer, and E. L. Layard, Esq., Secretary.

Read letters from Mr. Justice Starke and Dr. Hoffmann, expressive of regret at not being able to attend the Meeting. Read and confirmed the Minutes of last Meeting.

Read letter from J. N. Mooyaart, Esq., signed Chairman of the Jaffna District Committee, enclosing Minutes of Meeting held in Jaffna on the 18th September, 1852.

The recommendation of the Managing Committee on the subject being put to the vote and lost:—

It was moved by the Rev. D. J. Gogerly, seconded by Mr. E. L. Layard, and carried unanimously—

“ That no Members be allowed to expend any part of the Society’s funds, except on the special grant of a General Meeting, and that all contributions and subscriptions paid at out-stations, be as speedily as possible remitted to the Treasurer.

Moved by Mr. E. L. Layard, “ That the Vice-President, the Rev. D. J. Gogerly, and H. Dudley, Esq., be requested to act as a Sub-Committee for the purpose of drawing up Rules for the guidance of the District Committees.”—Lost.

Moved by the Rev. D. J. Gogerly, and seconded by Dr. Misso, “ That the Managing Committee do report in detail to the next General Meeting, on the formation of the District Committees.”—Carried.

With reference to the recommendation of the Managing Committee, “ That the engagement of a Peon to distribute the Society’s Notices, &c., upon a salary of 5s. per mensem” be adopted,—It was resolved that the recommendation be adopted.

The Managing Committee report the death of Capt. W. F. Smith Neill, the Society’s late Secretary, and recommend that the following expression of regret be entered upon the

Minutes of the Society, and conveyed by the Secretary to his family.

“That this Meeting do record their sense of the loss this Society has sustained by the premature and lamented death of their late Secretary, Capt. W. F. Smith Neill, R. A. On his removal from Colombo by Military arrangements, he ceased to act as the Secretary of the Society; but wherever he was stationed, his youthful aspirations, the literary and scientific turn of his mind, and his anticipations of future fame, were calculated to be of benefit. Stirring up the indolent, shaming the negligent, and infusing into Society an impulse which, with a growing maturity of experience, might have led to valuable results; this Society, and the limited community of a literary character of this place, can ill afford the loss of such Members as Capt. Neill.”

Proposed by Mr. Alwis, seconded by Mr. Coomarasamy, “That this recommendation of the Managing Committee be agreed to and entered on the Society’s Minutes.”—Carried unanimously.

Moved by Mr. E. L. Layard, “That the sum of £5 be granted for the purchase of instruments and materials for the use of the Museum, and that the Managing Committee be authorised to employ a person as Taxidermist and Librarian, at the rate of £3 per mensem, until the next Anniversary Meeting.” Seconded by Rev. D. J. Gogerly, supported by Mr. J. De Alwis.—Carried.

Moved by Mr. Dalziel, seconded by Mr. E. L. Layard, “That a copy of the Rules of the Society, signed by the President and the Secretary, be suspended in some conspicuous place in the Society’s Rooms, and that any alterations or additions be from time to time inserted as they occur, and signed as before.”—Carried.

Moved by the Rev. D. J. Gogerly, and seconded by Lieut.-Colonel Wilson, “That the Secretary do convey to His Excellency Sir G. W. Anderson the thanks of this Society for the kind and timely assistance afforded to it, by permitting the publication of its Journals at the Government Press.”—Carried by acclamation.



The Secretary reported the resignation of R. E. Lewis, Esq., which causing a vacancy in the Managing Committee, Mr. E. L. Layard moved, and Lieut.-Col. Wilson seconded the motion, that H. Dudley Esq., C.R.R., be requested to fill the vacancy.—Carried.

Mr. Dudley acceding to the request, his name was entered on the Managing Committee.

With reference to an extract of a letter from Lieut. Henderson, C.R.R., read by the Secretary, it was moved by Lieut.-Col. Wilson, and seconded by Mr. H. Dudley, “ That the Secretary be directed to return to Lieut. Henderson his communication on the foot prints in the rock at Kurnegalle, with a request that that Gentleman would be so good as to draw up a new paper, embodying any fresh matter he may be able to communicate on a subject so deeply interesting to the Society.”—Carried.

Moved by Dr. Lamprey, and seconded by Mr. E. L. Layard, “ That with reference to the Circulars from the Society of Arts on the new Industrial Exhibition, laid on the table at a former Meeting, the Ceylon Branch of the Royal Asiatic Society take the matter into its consideration, in order to carry out the objects of the Society of Arts, so far as Ceylon is concerned; and that a Committee be named to carry out these views.”—Carried.

Pursuant to notice, Mr. E. L. Layard brought forward his motion on the propriety of out-station Members voting on questions before General or Special Meetings.

After much conversation and discussion, the sense of the Meeting being decided on a restricted view of the case, Mr. Layard withdrew his motion, and the Secretary was desired to record on the Minutes, that the sense of this Meeting is decided on the point, that out-station Members have the privilege of proposing and seconding gentlemen for admission as Members, provided they communicate their wishes in writing.

Moved by Dr. Lamprey, and seconded by Mr. E. L. Layard, "That the Photographic apparatus now on sale at Messrs. Middleton and Co's establishment, be purchased for a sum not exceeding £5."—Carried.

Moved by Dr. Lamprey, and seconded by Lieut. Schaw, "That an Electro-typing apparatus be purchased for a sum not exceeding £5."—Carried.

The Chairman stated, he regretted that his speedy departure to England would compel him to resign his connection with the Society; but added, that if he could advance the interests of the Society in any way in England, he should be most happy to do so.

Moved by Mr. Dudley, and seconded by Lieut. Schaw, "That this Meeting do record the expression of their regret at the departure of Col. Wilson from the Island, and that he be elected an Honorary Member of the Society."—Carried by acclamation.

Colonel Wilson returned thanks.

G. F. Arndt, Esq., proposed by J. N. Mooyaart, Esq., and seconded by J. De Alwis, Esq., was then elected a Member of the Society.

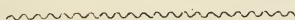
The following Donations were then laid on the table :

1. Journal of the Statistical Society of London.
2. The Sidath Sangarawa, by Mr. Alwis the author.
3. The Lanka Nidhana, from the Editor.
4. The Lankabhiwardia, from the Editor.

The thanks of the Society were voted to the donors.

The thanks of the Meeting being then voted to the Chairman, the Meeting adjourned.

E. L. LAYARD,  
*Secretary.*



## GENERAL MEETING, HELD 27TH NOVEMBER, 1852.

*Present :—*The Hon'ble Mr. Justice STARKE, Vice-President, in the Chair.

The Rev. J. D. Palm, Rev. J. Kats, Rev. G. R. Muttukistna, Rev. C. Alwis, Dr. Misso, Messrs. Simon Casie Chitty, Muttu Coomarasamy, L. De Soyza, J. Dalziel, J. Casie Chitty, R. Dawson, Treasurer, E. L. Layard, Secretary.

Read and confirmed Minutes of last Meeting.

The Secretary reporting that the Minute and Correspondence books, and all the Meteorological Instruments belonging to the Society, had been sent to England with the late Secretary's (Captain Neill's) effects; it was resolved, that the Secretary do communicate with Captain Neill's friends, and endeavour to recover them.

The Secretary read the following recommendation from the Committee of Management.

“That the Committee do recommend that the year be divided into two parts, ending 30th June and 31st December respectively—that all persons elected Members of the Society before the 30th June, should pay their year's subscription and entrance fee; and that persons elected after that date should not be called upon for their subscription for the current year, but only for their entrance fee.”

This recommendation being put from the Chair was approved of:—ordered accordingly.

Read a letter from Dr. Kelaart (marked A.)

Read a letter from Mr. De Soyza, and its enclosure, (marked B.)

Read an extract from a letter from Mr. Skeen relative to printing matters, (marked C). With reference thereto the Secretary was requested to proceed with the publication of the Society's Journal.

Moved by Mr. E. L. Layard, seconded by Mr. Simon Casie Chitty, “ That the Committee of Management be requested to prepare a Schedule of expenditure of the funds of the So-

ciety in the hands of the Treasurer at the end of the year, for the more advantageous expenditure of the same:—this Schedule not to be departed from except in cases of urgent necessity.”

After much discussion, the Vice-President, seconded by the Rev. J. D. Palm, moved as an amendment, that the proposition be referred to the Managing Committee for Report.

The original motion and amendment being put from the Chair, the amendment was carried by a majority of one.

Moved by Mr. E. L. Layard, and seconded by the Vice-President, that the “Annals and Magazine of Natural History,” be added to the list of Periodicals taken by the Society:—carried.

Moved by Mr. M. Coomarasamy, that the following works be purchased by the Society.

Historical sketch of Sanscrit literature, with copious Bibliographical notes from the German of Adelung, 3s.

Bija Ganitar, or the Algebra of the Hindus, translated by Edward Strachey, 10s. 6d.

Fragmens du Mahabharatta traduits en Francais, sur la texte Sanscrit de Calcutta, par M. Paver, 6s.

The Ramayana in the original Sanscrit, with an English prose translation, and notes by W. Carey and J. Marshman.

Essai sur le Pali, par E. Burnouf et Ch. Laessen, 14s.

Madras Scientific Journal.

Ordered, that the list be submitted to the Oriental Committee for report.

The following gentlemen were then ballotted for and elected Members of the Society.

|                       |   |                                            |
|-----------------------|---|--------------------------------------------|
| Hew Stewart, Esq. .   | { | <i>Proposed by Mr. M. Coomarasamy.</i>     |
|                       | } | <i>Seconded by Mr. Simon C. Chitty.</i>    |
| W. Skeen, Esq. .      | { | <i>Proposed by Mr. E. L. Layard.</i>       |
|                       | } | <i>Seconded by Dr. Misso.</i>              |
| J. Casie Chetty, Esq. | { | <i>Proposed by Rev. G. R. Muttukistna.</i> |
|                       | } | <i>Seconded by Mr. Coomarasamy.</i>        |
| Rev. S. Nicholas .    | { | <i>Proposed by Rev. G. R. Muttukistna.</i> |
|                       | } | <i>Seconded by Mr. E. L. Layard.</i>       |

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*Library.*—The following donations were then laid on the table.

Nos. 2, 3, 4, 5, 6, of *Journal of the Eastern Archipelago*—*Presented by the Editor.*

Nos. 1, 2, 3, 4, of the *Journal of the Asiatic Society of Bengal* for the current year—*From the Asiatic Society of Bengal.*

Meteorological Observations made at Hobart Town—*Presented by His Excellency Sir George W. Anderson.*

The Secretary was ordered to convey the thanks of this Society to the several donors.

*Purchased.*—No. 31, Vol. 8, of the *Journal of the Geological Society of London.*

*Museum.*—The Secretary reported the following donations :—

- 2 Varieties of fresh water Fishes.
- 18 Do. Marine.
- 2 Do. Snakes.
- 2 Centipedes.
- 1 Scorpion.
- 4 Varieties of Lizards.
- 1 Crustacean—*Presented by Mr. E. L. Layard.*
- 2 Varieties of Snakes.
- 1 Tree Frog.
- 2 Varieties of Lizards.
- 4 Do. Coleoptera—*Procured by the Taxidermist.*
- A quantity of Bottles presented by Dr. Misso.

The Secretary reported the purchase of a new stand for the reception of specimens in bottles.

Mr. E. L. Layard exhibited a specimen of Sea Island Cotton, grown in the Colonna Corle, Western Province. It was announced to be of pretty good fibre and of middling strength, but its colour had been entirely spoilt.

The Secretary announced that the following papers were ready for perusal.

On some of the Ancient Capitals of Ceylon—By Woodford Birch, Esq., Kornegalle.

On Native Ranks and Titles—By the Hon. Mr. Justice Starke, V. P.

Ornithology of Ceylon, Part I.—Accipetres. Diurnal and Nocturnal Birds of Prey—By Dr. Kelaart and Edgar L. Layard, Esq.

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The President moved, that as it was growing late, this Meeting do adjourn till Saturday next at 1 o'clock, p. m., for the purpose of reading the papers now before it.

Mr. Simon C. Chetty seconded the motion.

Mr. E. L. Layard opposed the motion, on the ground that Meetings in the day-time interfered with official duties, and if they were frequent he should feel it incumbent upon him to resign the honour of being the Society's Secretary. He moved, as an amendment, that the reading of papers be postponed till the Evening Meetings.

Mr. Dawson seconded the amendment.

A considerable discussion now ensued, and the original motion and the amendment being put from the Chair, the latter was carried by a majority of one.

Mr. Dawson kindly placing his house at the disposal of the Members for the next Evening Meeting, it was resolved to adjourn this meeting till Wednesday next at 8 o'clock, p.m., at Mr. Dawson's residence; and the thanks of the Meeting having been voted to the Chair, it adjourned accordingly.

E. L. LAYARD,  
*Hony. Secy.*

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A.

*Kaduganava, 22d November, 1852.*

*To the Secretary of the Asiatic Society of Ceylon.*

MY DEAR SIR,

It gives me great pleasure to find you the successor of so worthy a man as the late Secretary, whose untimely death no one could deplore more sincerely than I do; and it is to be hoped that your period of office will be a longer one, and that before it is terminated you will have established for the Society what is now wanted, viz. a Museum of all the Zoological productions of the Island. Calcutta, Madras, and Bombay, have each a Museum, *Ceylon none*, or only apologies for one. The Society alone could not support an institution of the kind; the aid of Government is required; and surely the Legislative Council will not hesitate to vote £100 a year for so laudable a purpose.

I regret that my health has not permitted me to complete the first part of our conjoint paper on the Ornithology of Ceylon. But if the Society will receive a small portion of it as an instalment of what is to come, I promise to have the rest done in time to appear in the next Number of the Journal. My work is nearly ready for delivery. Since it was completed, I have come up here for the benefit of my health. Although the Estate is not very prolific of Coffee, its soil has yielded not less than four species of *Uropeltidæ*, or rough tails (*Dapat Nayas*), one the very remarkable species with keeled scales to the shield of the tail, *Siluboura Zeylonicus*, Cuv. R. A. ii. 76. The three others are not described in Grey's Catalogue, nor do they belong to any of the three divisions of *Uropeltidæ* given by Mr. Gray. I have proposed new genera for them. One of the three is already described in my work, from specimens collected at Trincomalie. The two others are new to me; one, a very elegant species, I propose calling after an old friend, *Uropeltis Trevelyani*, it is about 14 inches long, and 1 inch in circumference. Black above, margin of scales pale. White beneath, with longitudinal series of black spots, formed of central spots on each scale. A line of triangular white spots, with their apices pointed upwards along each side; vent and lower part of tail white, which is carried on to the upper part. Tail short, obliquely truncated, and nearly covered with a conical granular shield. Vent shields 1—2. The young is of a bluish or bluish black. Found about three feet under ground in ant-holes.

The other species, which I propose naming after our distinguished friend Mr. Blyth, is 16 inches long; circumference 1 3-10th inch. Head 4-10th inch. Dark yellowish brown above, with darker brown spots on the anterior third of scales. Paler beneath. Sides of nape and neck waved with angular spots of yellowish hue, yellow spots on each side of vent. Rostrum yellow. Tail thick, slightly truncated, conical, upper part of termination covered with a small subtriangular granular shield, lower surface smooth, covered with broad scales. Vent shields 1—2. This species too is found in the same locality, but on softer ground, near rivulets.

Singular that I have not been able to get any specimens of *Typhlops*, the *Argyrophis Bramicus* must be found in the paddy fields at Colombo. This is the only species of this genus hitherto seen in the Island. India produces many, and as many no doubt exist in Ceylon, if people will only bring all they meet with in the marshes. I am not collecting any birds, and I have not seen any which I have not previously got. The most numerous species here at present are two kinds of finches, *Amadina undulata* and *A. Malabarica*, *Zosterops palpebrosus*, *Pycnonotus Hemorrhinus*, and *P. nigricapilla*; *Palæornis cyanocephalus*, and your beau-

tiful new species, *P. Calthropæ*. *Psittacus Asiaticus* is also abundant. *Copsychus saularis* and *Malacocercus griseus* are also plentiful.

I have described a new species of house lizard found here, *Gymnodactylus Kandianus*, much smaller than the common house lizard of Colombo, *Hemidactylus frenatus*, of which we have here a very large variety, I presume, unless it turns out to be the much coveted *H. Leschenaultii*. The new *Gecko*, above alluded to, is a *diurnal species*, with round pupils. The pupils of every other species known in the Island are vertical (like cat's eyes.) Here we see a very curious adaptation of the visual organs to the habits of the animal. I have also added lately *Piripia Peronii* to my list of *Gechotidæ*; it is easily known by its clawless thumbs. They are very abundant on every house in the town of Kandy and Kaduganava. I hope you will induce other Members of the Society to communicate in a familiar manner any Zoological or Botanical notes they may make, so that every circumstance, however trivial and unimportant it may seem, may prove interesting to the *future* if not to the *present* Members of this Society. "Nihil est aliud magnum quam multa minuta."

Believe me,

Very sincerely your's,

E. F. KELAART.

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P.S.—Since writing the above, I have spent a few days at Dr. Marshall's, Allagalla, where I have obtained a species of *Nessia*, probably identical with *N. Burtonii* of Gray, of which there appears to be only *one* specimen in the European cabinets, and that, too, at Fort Pitt Museum, doubtless sent there many years ago, by some Army Medical Officer serving in Ceylon, if it proves now that my specimen is of the same species; of this, however, I have some doubts. You will observe that Gray founded the genus *NESSIA* from this solitary specimen in Fort Pitt, and named it after Staff Surgeon Burton, who was then in charge of the Museum.

The specimen from Allagalla (3000 ft.) is vermiform in appearance, about 5 inches long, with 4 small legs, having 3 sub-equal small toes on each. Dark rufous brown above and spotted with darker brown on the anterior part of each scale. Dark grey beneath, clouded and spotted. Found in vegetable mould on a Coffee plantation. From the same interesting locality, I have a specimen of *Argyrophis Bramicus*, (young,) brown above with a broad pale whitish line beneath. The crenulated subterminal edge of the rostral and nasal shields, became very perceptible after the specimen was immersed in spirits for some days. In the collection you have sent me for examination, I find a *Typhlops*, in which the head is



partly destroyed. The other little spotted creature, of an olive brown colour, is evidently the young of a species of *Aconitas*, which is not described in Gray's Catalogue; if new, I shall have much pleasure in naming it *Aconitas Layardi*. The only other species of the same genus in the British Museum is *A. meleagris* from the Cape of Good Hope. In form the genus *Aconitas* is very like *Nessia*, without the limbs, or external opening to the ear.

E. F. K.

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B.

*To the Secretary of the Ceylon Branch of the Royal Asiatic Society.*

SIR,

I have deferred returning Mr. Brodie's letter on the subject of Singhalese Numerals, in the expectation of procuring a copy of an ancient Singhalese work, which I had been given to understand exists on the subject, and of submitting a translation of it to the Society; but being disappointed in this expectation, I hasten to return the letter, with many apologies for detaining it so long with me.

I have, however, little or nothing of importance to add to Mr. Brodie's explanation of the system of Singhalese Numerals, which appears to be correct. These numerals may be found in Chater's Singhalese Grammar, Prinsep's Comparative table of Alphabets, and in a recent work on Singhalese Grammar published by a learned Member of our Society.

In reference, however, to that part of Mr. Brodie's letter, in which he speaks of the difficulty of carrying on any arithmetical operation by means of these numerals, and inquires how the "Native Astrologers make their calculations," and whether "they do calculate at all?" I venture to submit a few remarks, which I hope may not altogether prove devoid of interest.

Mr. Brodie is quite correct in saying, that "the commonest arithmetical processes become almost impossible under this system;" but it must not hence be inferred that the native astrologers make no calculations. I believe it is well known that the natives do make calculations, not only in Astrology, but in Astronomy, which cannot be done without a considerable knowledge of the science of numbers, as is evident from the fact of their being able to predict the eclipses of the sun and moon, and determine the positions of the planets; though of course on principles less accurate and less perfect than those of Modern Europe.

For the purpose of these calculations, however, they do not employ the numerals in question, but either use some small shells or grains of paddy (by means of which an arithmetical operation is easily carried on), or another series of numerals called "*Katapayadi ganana*," in which numbers are expressed much in the same way as in European systems of notation.

The latter system serves the double purpose of a system of numerals and of artificial memory, closely resembling Dr. Grey's *Memoria Technica*.

It is called කවචසාදීගණනා, from the first series of letters representing the numeral one. The following letters represent the following numbers.

|             |    |
|-------------|----|
| කවචය.....   | 1. |
| බඩළුර ..... | 2. |
| හඬබල .....  | 3. |
| කඩහව.....   | 4. |
| බණ්ඩු ..... | 5. |
| වහළු .....  | 6. |
| ඡවස .....   | 7. |
| ඡදහ .....   | 8. |
| කබල .....   | 9. |
| කෑන .....   | 0. |

By means of these letters an artificial word may be formed precisely in the same manner as is done in Dr. Grey's system of Mnemonics. Thus the present year of the Buddhist era 2395, may be expressed මොලි ගොනු. The Saka era 1774 විවිසත, the only difference between this system and that of Dr. Grey being, that in the one figures are read from right to left, and in the other from left to right.

There is another highly curious way of denoting numbers by means of different objects of nature. This is called භූතසංඛ්‍යාව, and from its apparently primitive and hieroglyphical character, I fancy may be traced to a period antecedent to the discovery of alphabetical writing. Some idea of the principles upon which this system is founded, may be formed from the following examples, which occur in ancient Sanscrit and Singha-lese works; thus

|                             |   |                                                                        |
|-----------------------------|---|------------------------------------------------------------------------|
| මෙරු (Meru) . . . . .       | { | represents 1 (there is but one Meru mountain in the world.)            |
| නේත්‍ර (eyes) . . . . .     | — | represents 2.                                                          |
| ශිව (Shiva) . . . . .       | — | „ 3. (Shiva has 3 eyes.)                                               |
| වේද (Veda) . . . . .        | — | „ 4. (There are 4 Vedas.)                                              |
| සාර (sara) darts . . . . .  | { | „ 5. (there are 5 darts of Cupid.)                                     |
| රස (rasa) tastes . . . . .  | — | represents 6. (there are 6 tastes.)                                    |
| කොළ (seila) rocks . . . . . | { | „ 7. (there are 7 principal rocks in the native systems of Cosmogony.) |

|                              |                                                                                        |
|------------------------------|----------------------------------------------------------------------------------------|
| නාග (naga) . . . . .         | { represents 8. (the reason why (Na-<br>ga) represents this No. is not ap-<br>parent.) |
| ග්‍රහ (graha) . . . . .      | —represents 9. (there are 9 planets.)                                                  |
| මාර්තාඨ (marthanda) Sun. {   | „ 12. (he passes through<br>the 12 signs of the Zodiac.)                               |
| අකාස (ākāsa) space . . . . . | —represents 0.                                                                         |

There is another series of numerals in use among the Singhalese, called “Lit-illakkān” “Almanac Numerals;”—they are as follows:

|              |     |
|--------------|-----|
| ෧ . . . . .  | 1.  |
| ඌ . . . . .  | 2.  |
| ඹ . . . . .  | 3.  |
| ජ . . . . .  | 4.  |
| ඳ . . . . .  | 5.  |
| ආ . . . . .  | 6.  |
| උ . . . . .  | 7.  |
| ඌ . . . . .  | 8.  |
| ඹ . . . . .  | 9.  |
| ෧෦ . . . . . | 10. |
| ෧෧ . . . . . | 11. |
| ෧෨ . . . . . | 12. |
| ෧෪ . . . . . | 14. |
| ෧෯ . . . . . | 19. |
| ෨෦ . . . . . | 20. |
| ෩෦ . . . . . | 30. |

These numerals do not extend beyond the number 60, the number of *payas* in a day according to the Singhalese division of time.

I remain, Sir,  
Your most obedient servant,  
L. DE ZOYSA.

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Anooradhapoorā, 15th July, 1852.

SIR,

I have the pleasure to enclose a list of the Singhalese Numerals up to ten thousand. It may be that these are known to many Members of the Society, but they are certainly almost obsolete at the present day, and I had so much difficulty in obtaining them, that I think it possible that some one may be saved trouble by having this table before him.





|    | 0  | 1   | 2   | 3   | 4   |
|----|----|-----|-----|-----|-----|
|    | 0  | ෧   | ෨   | ෩   | ෪   |
| 10 | ශා | ශා෧ | ශා෨ | ශා෩ | ශා෪ |
| 20 | සි | සි෧ | සි෨ | සි෩ | සි෪ |
| 30 | ලි | ලි෧ | ලි෨ | ලි෩ | ලි෪ |
| 40 | පා | පා෧ | පා෨ | පා෩ | පා෪ |
| 50 | සි | සි෧ | සි෨ | සි෩ | සි෪ |
| 60 | ආ  | ආ෧  | ආ෨  | ආ෩  | ආ෪  |
| 70 | භූ | භූ෧ | භූ෨ | භූ෩ | භූ෪ |
| 80 | වි | වි෧ | වි෨ | වි෩ | වි෪ |
| 90 | සි | සි෧ | සි෨ | සි෩ | සි෪ |

# NUMERALS.

| 5      | 6      | 7      | 8      | 9     |
|--------|--------|--------|--------|-------|
| ൫      | ൬      | ൭      | ൮      | ൯     |
| അയ്യം  | അറ     | അറു    | അയ്യ   | അത    |
| പത്തു  | പതി    | പത്തു  | പത്തു  | പത്ത  |
| മൂന്നു | മൂന്നു | മൂന്നു | മൂന്നു | മൂന്ന |
| നാലു   | നാലു   | നാലു   | നാലു   | നാല   |
| അഞ്ചു  | അഞ്ചു  | അഞ്ചു  | അഞ്ചു  | അഞ്ച  |
| ആറു    | ആറു    | ആറു    | ആറു    | ആറ    |
| ഏഴു    | ഏഴു    | ഏഴു    | ഏഴു    | ഏഴ    |
| എട്ടു  | എട്ടു  | എട്ടു  | എട്ടു  | എട്ട  |
| ഒമ്പതു | ഒമ്പതു | ഒമ്പതു | ഒമ്പതു | ഒമ്പ  |
| പത്തു  | പത്തു  | പത്തു  | പത്തു  | പത്ത  |
| അയ്യം  | അയ്യം  | അയ്യം  | അയ്യം  | അയ്യ  |
| പത്തു  | പത്തു  | പത്തു  | പത്തു  | പത്ത  |
| മൂന്നു | മൂന്നു | മൂന്നു | മൂന്നു | മൂന്ന |
| നാലു   | നാലു   | നാലു   | നാലു   | നാല   |
| അഞ്ചു  | അഞ്ചു  | അഞ്ചു  | അഞ്ചു  | അഞ്ച  |
| ആറു    | ആറു    | ആറു    | ആറു    | ആറ    |
| ഏഴു    | ഏഴു    | ഏഴു    | ഏഴു    | ഏഴ    |
| എട്ടു  | എട്ടു  | എട്ടു  | എട്ടു  | എട്ട  |
| ഒമ്പതു | ഒമ്പതു | ഒമ്പതു | ഒമ്പതു | ഒമ്പ  |

അയ്യം 10,000



As will be observed, the numerals follow a decimal notation; they do not however take value according to position, nor yet are there any coefficients to answer the same end, there is simple juxtaposition of the isolated numbers and nothing more. Thus 1852 would be written thus:

|     |          |       |         |       |     |         |
|-----|----------|-------|---------|-------|-----|---------|
| ௧   | ௮        | ௮     | ௮       | ௮     | ௮   | that is |
| one | thousand | eight | hundred | fifty | two |         |

a separate sign for each word.

Of course the commonest arithmetical processes become almost impossible under such a system, and mental calculation must be resorted to. It would be interesting to know how the native astrologers make their calculations, that is, if they do calculate at all: and also, the affinity which may exist between the numerals of the Singhalese and other allied tribes, such as some of the hill people on the Continent of India; and lastly, whether these signs are, in fact, the letters of any language.

I am not aware that there is any sign equivalent to our 0, nor does it appear distinctly that the signs for the multiples of ten are compounded of the sign for ten and that for its multiplicator.

I have the honor to be,

Sir,

Your most obedient servant,

A. OSWALD BRODIE.

*The Secretary of the  
Royal Asiatic Society,  
Colombo.*

#### ANNUAL GENERAL MEETING, HELD 5TH MARCH, 1853.

*Present:*—Rev. D. J. GOGERLY in the Chair.

R. Dawson, Esq., Rev. C. Alwis, Mr. L. De Zoysa, Mr. J. Alwis, Dr. J. B. Misso, Mr. M. Coomarasamy, Captain Dudley, C. R. R., and Dr. Lamprey, 15th Regiment.

THE following Report of the Committee by the Hon'ble Justice Starke, acting Secretary, was read and adopted.

#### *Report.*

“YOUR Committee, in making their Report at this time, have to renew their expressions of regret at the early and lamented decease of the former Secretary of your Society,



and the retirement of another, since the last Annual Meeting. Such events necessarily affect the movements of a Society like this ; and they, with other circumstances, have concurred to give an appearance of less efficiency to the proceedings of the Society during the past year than we had any reason to expect. On the contrary, our anticipations were of the most favourable kind.

But notwithstanding all this, your Committee cannot doubt either the importance or the progress of the Society, both absolutely and relatively.

The funds of the Society have been accumulating, and are at present larger in amount than at any former period ; and in the course of the past year, a very considerable addition has been made to the list of Members, while the donations to the Library and Museum tend at once to enrich our stores with objects of permanent value, and to evince a continued confidence in your Society, as the proper depository of all that may conduce to illustrate the condition or develop the resources of the Island. And your Committee, observing the contributions in Science made by Members of your Society elsewhere, cannot doubt that with better means for the reception, examination, and arrangement of donations, such would be very largely increased.

And here your Committee would express a hope, that His Excellency the Governor, who by his donations to the Library, and the leave so readily granted by him to have the Journal again printed at the Government Press, has manifested his patronage, will favour the Society by directing arrangements which will ensure to us a freer use of the room than we latterly have had. This would allow an extended accommodation for the Library and Museum, as well as for the Meetings of Members ; and they confidently anticipate, that on a representation of the matter, such an arrangement would be made.

Your Committee therefore consider, that their attention should be continued to this subject, with a view to such ex-

tended accommodation, and they would at the same time suggest, that a Curator of the Museum should now be appointed, whose duty it shall be to superintend the reception of all articles in that department transmitted to the Society, and to have the same speedily submitted to examination, and reported on, and suitably arranged; the Librarian continuing his attention to the Books, Manuscripts, Coins, and Antiquities of the Society.

The increasing number and value of the articles in the Library and Museum, as well as the different character of study and skill required in the several departments of Science and Literature, render such separation of duties desirable, and now requisite, for the proper care and advancement of the departments.

The Curator of the Museum will thus be a permanent office-bearer of the Society, distinct from the Librarian, and elected annually with the other office-bearers.

The present Taxidermist was appointed at the Meeting of 20th October last, on trial for three months, at £3 per mensem, and he still continues. Your Committee think his fitness should now be settled, and they recommend that the matter be referred to the Committee, with powers for appointment, or for further trial, or for the trial of any other, as they in conjunction with the Curator of the Museum, shall see fit.

Adverting also to the state of the Library, your Committee consider authority should be given to procure additional cases for the increasing number of the books; and as some inconvenience has been felt in regard to ship and other charges for letters and packages, and for the calling in of books from out-stations, your Committee are of opinion that the Treasurer should be authorized to defray all necessary charges in this respect, under the sanction and direction of the Committee; it being always distinctly understood that the carriage of books to Members, and the due return of borrowed books, is at the expense of the parties.

Moreover, as nothing definite has yet been done in regard to the five issued Vols. of Reeve's *Iconica Conchologica*, mentioned at a late meeting of the Committee as for sale and in good order, your Committee are of opinion that the subject should be again referred to them for consideration: so as in this as in other cases, a favourable opportunity of adding to the Library books of acknowledged value should not be lost.

Your Committee would further propose that the General Rules and Regulations of the Society, and the Rules of the Library, should, together with a Catalogue of the books and various articles contained in the Library and Museum, be printed in a concise form and separately from the Journal, for the information of Members and others, and that the stores of the Society may be made as available as possible, as well as deficiencies seen and supplied.

And here your Committee are led to observe, with reference to another Society in Colombo, that they are not in the least conflicting Societies; they differ altogether in their constitution, in their purposes, and in their mode of operation.

The design of this Society is to institute and promote inquiries into the History, Religion, Literature, Arts and Social Condition of the present and former inhabitants of this Island, with its Geology and Mineralogy, its Climate and Meteorology, its Botany and Zoology. The object of the Colombo Athenæum is wholly different; and they pursue their respective objects in quite a different way. The Athenæum is not limited as to place, nor restrained as to its subjects; and in its endeavours to unite in the Lectures given, the interest which may arise from oral delivery, from the play of fancy, or the resources of intellect, in illustration, and the more substantial course of views, diagrams, and experiments, it seeks to convey information with amusement, to take us up the hill of knowledge and to the heights of science, otherwise than by the old way of a laborious and difficult ascent, and make learning pleasant to the soul not merely when attained but in the very process of acquiring it.



The two Societies may therefore go on, not only without rivalry but without jealousy; and all may contribute to literary and social progress.

Since the last Quarterly Meeting the following additional numbers of the Journal of the Indian Archipelago have been received, vizt. for July and August (one No.) in December last, and for September and October recently.

The Rev. B. Boake has also favoured the Society by presenting to the Library Vol. 3 of the Transactions of the Royal Asiatic Society, and a volume of Specimens of the Popular Poetry of Persia, collected and translated by A. Chodzko, Esq.

A communication was also received in December last from W. C. Ondaatje, Esq., Badulla, with the Articles mentioned in a Memorandum of Vegetable products of Ceylon, presented by him to the Society, as follows, viz.

“1. Cinnamon suet. Oil from the seeds of the Cinnamon, collected at Badulla.

2. Oil from what I think the *Daphnidium*, *Cubeba*, *Nees.*, *Laurus Cubeba*, *Laur.*

3. Ceylon Gamboge Oil.

4. Oil from Ceylon Oak, *Schleicheia trijuga*.

5. Fibrous Sack, prepared from the *Liber* or *endothaleum* of a tree described in my “Observations,” (on the Vegetable Products of Ceylon.)

6. Specimen of Tinnevely Senna, cultivated at Putlam by me.

7. Wood Oil or Wood Tar extracted from the *Sethia Indica*, collected at Putlam, together with a dried specimen of the tree.

8. Root of the *Rubia cordifolia* which was discovered by me on the 8th December, 1852, at Badulla.”—*Badulla, 15th December, 1852.*

In reference to No. 5 of the preceding list, your Committee would draw the attention of the Curator of the Museum, by whom the articles will be carefully examined, to a “specimen of the wood of the *Riti Gaha*, and a bag made of the bark as used by the natives, from E. R. Power, Esq.,” and laid before the Society 1st December, 1849.

Your Committee recommend that a Local Committee be now appointed for Jaffna, the more effectually to carry



out the objects and advance the interests of the Society at that important station, by collecting information on the spot, on the several subjects within the sphere of the Society's operations, and forwarding the same with suggestions, to the Secretary of the Society at Colombo,—such Committee having, however, no power or authority to collect or receive money otherwise than in conformity with the Rules and Regulations of the Society, nor to incur any expense without the previous sanction of the General Committee of the Society. Other Local Committees will also fall to be appointed at subsequent meetings of the Society, as circumstances appear to require.

Your Committee further recommend, that Capt. Chapman's letters, of date February and March 1852, be referred to the Oriental Committee for their consideration and report, so that an answer to those interesting and valuable letters may be despatched at the earliest opportunity. The same Committee should also be instructed to collect together the figures, sculptured slabs, and inscriptions or copies of such, belonging to the Society, as also the plan of the ruins of Pollaneuera near Trincomalie, presented by J. N. Mooyaart, Esq., and make a Report thereon.

And as several valuable specimens of the woods of Ceylon have at different times been presented to the Society, your Committee recommend that a Committee should be appointed to collect these together and report on their number, description, character and economical uses, with suggestions in regard to their future custody and inspection.

From the Treasurer's statement which is annexed, of date 5th February, there is a balance in favour of the Society of £88 12s. 3d., independent of the arrears yet to be collected and the subscriptions for 1853 now due.

Your Committee have at length the satisfaction of laying upon the Table a portion of the second Volume of the Society's Journal. There was reason to suppose it would have been out before the close of last year; but in this your Com-

mittee were disappointed, and even now there are several pages in print, which, as they require revision, have been postponed. As however, it has been considered desirable to have some part at least in the hands of the Members, your Committee have required its appearance in its present limited form, rather than consent to the publication being longer delayed. Your Committee are happy to say no inconvenience in binding up the Volume will thence arise; as by the arrangement now adopted the paging will be continuous from the commencement of the volume to its termination, whatever may be the number of parts of which it is composed, or the times of their publication."

The Treasurer read the following statement:—

TREASURER'S STATEMENT.

The accounts for the last year are closed, and shew the receipts to the 31st December, to be

|                                   |      |    |   |
|-----------------------------------|------|----|---|
| From the ex-Treasurer .....       | £32  | 3  | 1 |
| From Government on account of     |      |    |   |
| the Great Exhibition .....        | 6    | 7  | 8 |
| Collections during the year ..... | 108  | 16 | 0 |
|                                   | £147 | 6  | 9 |
| Expenditure during the year ..... | 58   | 14 | 6 |
| Balance on 31st December 1852...  | £88  | 12 | 3 |

The funds in hand at the end of the year exceed the expenditure during the period the present Treasurer has been in office by £29. 17s. 9d.

The number of Members on the list on 1st January 1853 is seventy-nine, whose subscriptions are now due; and in addition arrears to the amount of upwards of £50 are yet expected to be collected. Should these arrears be all got in, and no loss experienced in the current year's collections, the amount available for expenditure during the year will be £221. 11s. 3d.

ROBERT DAWSON,

Colombo, 6th March, 1853.

Treasurer, R. A. S. C. B.

Two receipts enclosed, Nos. 100 and 182, being for the subscriptions of H. Mooyaart, Esq., and J. N. Mooyaart, Esq., are stated to have been paid to the Provincial Committee at Jaffna, amount £2. 12s. 6d.

R. D.

The Office-bearers and Committee, with the Patron and Vice Patron of the Society for the year, were then nominated and appointed as follows :—

*Patron.*

His Excellency the Governor of Ceylon.

*Vice-Patrons.*

The Hon. Sir Anthony Oliphant, C. B., Chief Justice,  
The Right Rev. the Bishop of Colombo.

*President.*

The Hon. C. J. MacCarthy, Esq.

*Vice-President.*

The Rev. D. J. Gogerly.

*Secretary.*

J. Lamprey, M. B., 15th Regiment.

*Treasurer.*

Robert Dawson, Esq.

*Librarian.*

The Hon. Mr. Justice Starke.

*Joint Curators of the Museum, and of the Scientific Instruments  
belonging to the Society.*

Major Lushington, C. B., 37th Regiment.

J. C. Hoffman, M. D., Staff Assistant Surgeon.

## COMMITTEE.

The Hon. H. C. Selby, Esq.

The Hon. J. Caulfeild, Esq.

Captain Steuart.

The Rev. Dr. Kessen.

Lieut. Schaw, R. E.

Dr. J. B. Misso.

The following special Committees were then appointed.

## ORIENTAL COMMITTEE.

James De Alwis, Esq., *Convener.*

M. Coomarasamy, Esq. ; Revd. J. G. Kats ; Rev. G. R. Muttukistna ; and L. De Zoysa, Esq. ; with power to add to their number.

## JAFFNA COMMITTEE.

J. N. Mooyaart, Esq. *Chairman.*

E. S. Whitehouse, Esq., and H. F. Muttukistna, Esq., with power to add to their number; being always ordinary Members of the Society.

## THE WOODS COMMITTEE.

The Rev. C. Alwis, and Dr. Misso; with power to add to their number.

---

The following Gentlemen were then proposed and elected members of the Society:—

|                            |                                      |
|----------------------------|--------------------------------------|
| Major Cole, 15th Regiment. | } <i>Proposed by R. Dawson, Esq.</i> |
| Percy Alvin, Esq. .        |                                      |
| Lieut. Philpotts. . .      | } <i>Proposed by Dr. Lamprey.</i>    |
|                            |                                      |

---

Mr. Dawson drew the attention of the Meeting to the Society's Journal for the past year, which was laid on the Table, and stated that its curtailed form was owing to the proofs of some of the papers which were intended for publication not being as yet sufficiently corrected for the Press, and that consequently, a considerable portion remained in the hands of the Printer. Under existing circumstances, it was deemed better to issue the Journal in its present incomplete condition rather than entail further delay. The remainder, as soon as it will be printed off, may either be issued immediately or kept back and bound up in the forthcoming number; in either case the numbering of the pages will be continuous with the portion now laid on the table. This delay was more to be regretted, as it prevents the immediate appearance of several interesting papers, which, together with those of Mr. Gogerly and Mr. Brodie, would have made the volume of 1853, a very interesting and valuable number. Mr. Dawson concluded by stating that in conformity with the



Rules of the Society, which entitled ordinary members to two copies of the Society's Journal, the Members present would receive each two copies of the part now published and laid on the Table.

It was then proposed by Dr. Lamprey and seconded by Mr. Comarasamy, That a vote of special thanks be given to Mr. Ondaatje for his extremely interesting contributions to the Society, and that he be requested to give an account of the mode of preparing the several products he has contributed, and also what medical or other properties those products are commonly supposed to be possessed of, by the Singhalese; and further, that he be requested to continue to devote himself to researches in the Vegetable Products of Ceylon.

It was also proposed by Dr. Lamprey and seconded by Mr. Dawson, That examples of as many of the Vegetable products of Ceylon as can be procurable, and which are not generally known, be sent to some eminent Professors of Materia Medica and Chemistry in Europe, for their analysis and examination, as the best means of ascertaining and making known their utility.

Dr. Lamprey then stated, that before separating he wished to say a few words to the Meeting about a move that has already been in contemplation, and which has been alluded to in the able Report just read, namely, the establishing the Society in some building more appropriate to their Meetings, Museum and Library, than the limited space they now occupy; but being unprepared with a specific plan and estimate of a building, which he, Dr. Lamprey, was in hopes to have laid before the present Meeting, he must only defer it to another occasion; in the mean time, the matter would receive every assistance from Lieut. Schaw of the Royal Engineers, and he doubted not but that for a few hundred pounds very convenient and suitable rooms could be erected. It was considered that this sum could be raised by uniting the funds of

the Athenæum with those of the Asiatic Society, and completing the amount by a public subscription. The advantages of the project would be highly beneficial to both Societies, and the public would benefit largely likewise; it being also in contemplation to erect a Chemical laboratory, to be attached to the building, the utility of which would soon be made manifest either in furnishing a means for carefully analysing such valuable products as those contributed by Mr. Ondaatje to the Society, or as forming a basis for establishing a School of Chemistry and Natural Philosophy for general instruction. In conclusion, he thought the better plan of bringing the subject before the Society would be, by reading a paper on it at some Evening meeting.

The business of the Meeting having ended, a vote of thanks was given to the Chairman, and the Meeting separated.

J. LAMPREY, M.B.

*Hony. Secy.*

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COMMITTEE MEETING, HELD 4TH APRIL, 1853.

*Present*:—The Hon'ble Justice STARKE, in the Chair; Dr. Misso, Dr. Lamprey.

The first subject taken into consideration was the propriety of purchasing a Waterlow's Lithographic Press, now in the possession of Messrs. Wilson Ritchie and Co., and offered for sale at its original cost, £14. 16s., to be used in Lithographing the numerous Rock inscriptions and drawings which have accumulated among the Society's papers; also for describing the Inscriptions on a collection of interesting Coins in the Society's Museum, and for illustrating the Journal generally, for which it appears to be admirably adapted.

The Committee having duly considered the subject, deemed it desirable, on account of the great expense attending the printing of illustrations in England, and the want of such a

press in the Government or any other Printing establishment in Ceylon, that the Society should be in possession of a means of publishing in their Journal the illustrations already in their possession, as well as those that may be contributed hereafter, agree in the recommendation, and instruct the Secretary to purchase the Lithographic Press on the most advantageous terms, and authorize the Treasurer to discharge the amount accordingly.

It being stated that some of the proceedings of the past Meetings of the Society, now in the course of publication, were illustrated with wood-cuts when published in a Newspaper of the Colony, it was desirable to know whether it would be better to procure the wood-cuts from the Editor on terms, or to engrave them anew, the expense of which might be greater than the sum asked for.

It was agreed to leave the matter in the hands of Mr. Skeen, and authorize the Treasurer to pay the amount specified.

The Secretary having informed the Meeting of the recent receipt of a letter marked A. of the proceedings, together with some books from the Smithsonian Institution of America, it was agreed to send a complete series of the Society's Journal in return, to be accompanied with a letter of thanks expressing the deep interest that the Society entertains for the Institution, and the anxious wish it has to keep up a correspondence by an interchange of publications.

It was agreed to send a series of the Journal to the Editor of the Journal of the Eastern Archipelago, together with a letter of thanks for his donations of the Numbers to the Society.

Also, that copies of the Journal should be sent to the Royal Asiatic Society.

The Secretary having read Mr. Mooyaart's letter, marked B. of the proceedings, he was requested, in acknowledging its receipt, to draw his attention to the appointment of the Local Committees and particularly to the relative paragraph in the

Report of the Annual Meeting. And as regards the other matters contained in the letter, they were to be reserved for consideration at another Meeting.

Mr. Ondaatje's letter, marked C. of the proceedings, having been read and laid on the table, the Secretary was requested to acknowledge the same in a letter of thanks.

The proceedings of the Meeting here terminated.

J. LAMPREY,  
*Hon'y. Secy.*

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A.

*Smithsonian Institution, Washington, United States of America,  
June 21st, 1852.*

SIR,

On behalf of the Smithsonian Institution, we this day forward, through the agent specified, one package, containing the works mentioned in the accompanying list, intended as presents from the Smithsonian Institution, and the other parties indicated, to the Asiatic Society of Ceylon.

It is earnestly requested that an acknowledgment be made through our agent, immediately on the arrival of these works, as no further transmission will be made on the part of the Institution until this is received. A special acknowledgment is also desired for each of the other parties. The Institution, when desired, will act as the medium of communication between the Learned Bodies of Europe and America, as heretofore, and supply such especial desiderata as may be at its disposal.

In return, the Smithsonian Institution desires to receive as full series as possible of all publications of Learned Societies, of Universities, Libraries, and Foreign Governments, Periodicals, and indeed, anything else of a Scientific or Literary nature.

Very respectfully, your obedient servant,

JOSEPH HENRY,  
*Secretary of the Smithsonian Institution.*

---

*List of Books.*

Smithsonian Contributions to Knowledge, Vol. III., 4to., (1852,) pp. 564, and 35 plates.

Smithsonian Contributions to Knowledge, Vol. IV., 4to., 1852, pp. 416.

Fifth Annual Report of the Board of Regents of the Smithsonian Institution, 8vo., pp. (1851.)



Smithsonian Report on Recent Improvements in the Chemical Arts.  
By Booth and Morfit, 8vo., pp. 216.

Directions for Collecting Specimens of Natural History, 8vo., pp. 24.  
Registry of Periodical Phenomena.

List of Works published by the Smithsonian Institution.

List of Foreign Institutions with which the Smithsonian Institution is  
in Correspondence.

Abstract of the 7th Census of the United States.

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B.

*Kaigalle, March 26th, 1853.*

DEAR SIR,

I regret having been prevented from attending the General Meeting of the Asiatic Society on the 5th instant, as I might have<sup>d</sup> been able to communicate more satisfactory information respecting the Provincial Committee at Jaffna, than seems to have been afforded to the Meeting. If my correspondence, as Chairman of that Committee, with the lamented Captain Neill, and subsequently with his successor, be forthcoming, you will be acquainted with all the proceedings of that Committee. Since Captain Neill's demise, the Jaffna Committee was kept perfectly in the dark respecting the views of the Auxiliary Society at Colombo. Had it been made acquainted with the sentiments of the latter Institution, the Jaffna Committee might have chalked out for itself an eligible sphere of usefulness. On reference to the last communication I addressed to Mr. Layard in the month of June, you will perceive, that on my quitting that station, Mr. Byrne undertook the charge of President, to which nomination I could not obtain the concurrence of the Committee, as no Meeting took place, consequent on the non-attendance of the requisite number of Members to form a quorum. These circumstances, I notice, are omitted in the proceedings published in the Observer of the 24th.

With a degree of encouragement and co-operation on the part of the Colombo Committee, I am disposed to think that of Jaffna would prove a useful Auxiliary, in exploring valuable materials of information relative to the Northern part of the Island. The disposal by the Local Committee of the funds raised on the spot, seems desirable, as certain disbursements are unavoidable, where a working body is trying to be useful. It is upon this principle, that the Parent Society in London recognizes the exercise of this privilege by its Auxiliaries. In the anticipation that the Colombo Committee would concur in a similar arrangement, that of Jaffna has incurred some expense in the preparation for forming a Museum. This proceeding seems not to meet the approval of the Colombo Institution, inasmuch as it is not disposed to sanction the expenditure at the out-station of the subscriptions obtained on the spot. To restrict a working Committee in the disposal of the funds at its disposal

from local contributions, without the previous sanction of the General Committee, seems calculated to cramp the operations of both Institutions. In what light this restriction may be viewed at Jaffna remains to be seen. A more liberal course is likely to promote far better the objects of the Asiatic Society, as joint action in any locality is obviously preferable to individual exertions.

I shall feel obliged by your favouring me at your convenience with a copy of the Parts of the Number of the Journal already published. Were a suitable number of copies of the Proceedings, and of other papers which are intended for publication, to be at once struck off and circulated amongst the Members, they would be more interested in the General Proceedings of the Society. Were these publications to be conducted on an uniform plan and the pages numbered, the sheets might easily be bound at the expense of each subscriber, when the volume is completed. By this expedient, the Members generally would be *en courant* with the proceedings of the Colombo Committee.

The late Capt. Neill favoured me with a printed copy containing 90 very interesting and important queries. Such papers, circulated both in English and the Native languages amongst persons who might be disposed to furnish information on such topics, would elicit communications which might prove valuable.

I remain, &c.

J. N. MOOYAART.

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C.      *Badulla, 31st March, 1853.*

SIR,

I beg to forward herewith, (under cover to the Hon'ble the Colonial Secretary), a few specimens of Vegetable products enumerated in the annexed Memorandum, and to acquaint you that I will have much pleasure in sending you a copy of my pamphlet, wherein the mode of preparation and uses of the various articles already presented to your Society are fully described.

Allow me to draw your attention to the "Kino," which is the produce of the *Pterocarpus Marsupium*, Roxb., and indigenous to the Patnas around Badulla. It grows luxuriantly on the Lemon grass hills, and yields the gum in great abundance. It is now believed to be the species which produces the genuine Gum Kino of commerce.

I hope shortly to be able to submit to you a full account of this tree, and the mode of extracting the gum, (*gum-resin*).

I remain, &c.

W. C. ONDAATJE.

## Memorandum referred to.

1. Seeds of the Ceylon Sack tree.
2. Ceylon Madder Lake.—Specimens dyed with the Ceylon Madder.
3. Gum Kino, extracted from the *Pterocarpus Marsupium*, Roxb., growing on the hills (Patnas) around Badulla.
4. Ceylon Gamboge, extracted from the *Hebradendum gambogioides*, at Badulla.
5. Resin from the *Vateria indica*, from Bintenne.
6. Fibre from the *Hibiscus Cannabinus*, collected at Putlam.
7. Fibre from the *Abelmoschus Moschatus*, collected at Badulla.

Badulla, 4th April, 1853.

SIR,

With reference to a quantity of Gum Kino forwarded to you on the 31st March last, I beg leave to state that the tree which produces it is the *Pterocarpus Marsupium*, Roxb., figured in his *Coromandel Plants*, II. t. 116, Fl. Ind. III. p. 234. It is indigenous to Ceylon also, being found on the Patnas around Badulla and the neighbouring country. By making longitudinal incisions in the bark, I have succeeded in collecting a large quantity of the gum-resin from several trees here. The substance thus obtained, as you will observe, is of a dark ruby colour, brittle, and highly astringent. From the trials of it in the way of clinical application, I consider the Ceylon Kino to be equal to that of the shops in its therapeutic effects; but the Singhalese neither extract nor use this valuable substance. The tree grows on the most sterile hills, covered with Lemon grass, and may be propagated by "cuttings" without much difficulty.

I need not tell you that it is now believed by the most eminent Pharmacologists, that this species produces the *genuine Gum Kino* of commerce.

I must not omit to add, that this tree was not known to Moon under its correct name of *Pterocarpus Marsupium*, Roxb., as he has inserted it in his Catalogue under a wrong species (*P. bilobus*) without any reference, although this Botanist was possessed of Roxburgh's splendid drawings of the *Coromandel Plants*. It also appears, from the absence of those marks which serve to indicate the economic properties of plants, that Moon was not aware that the tree was capable of yielding so valuable a product.

I remain, &c.,

Dr. Lamprey,

W. C. ONDAATJE.

Hon. Secy., Ceylon Asiatic Society.

5 FEB 1857







**New Publications.**

**SIDATH SANGARAWA**, a Grammar of the Singhalese Language, translated into English, with Introduction, Notes, and Appendices. By **JAMES DE ALWIS**, Member of the Ceylon Branch of the Royal Asiatic Society. Colombo, 1852.

**PRODROMUS FAUNÆ ZEYLANICÆ**, being contributions to the Zoology of Ceylon. By **E. F. KELAART**, M. D., Edin., F. L. S., F. G. S., Staff Surgeon to the Forces. Ceylon, 1852. 8vo., cloth; price 10s. 6d.

## JOURNAL

OF THE

## CEYLON BRANCH

OF THE

## ROYAL ASIATIC SOCIETY:

EDITED BY

THE SECRETARY.

1855. *Feb.*

## CONTENTS:

|                                                                                                                  | Page. |
|------------------------------------------------------------------------------------------------------------------|-------|
| Analysis of the great Historical Poem of the Moors, entitled Seerah. By S. C. Chitty, Esq. ( <i>concluded.</i> ) | 97    |
| Description of New or little known species of Reptiles found in Ceylon. By E. F. Kelaart, M.D., F.L.S., &c.      | 102   |
| The Laws of the Buddhist Priesthood. By the Rev. D. J. Gogerly ( <i>to be continued.</i> )                       | 117   |
| Ceylon Ornithology. By E. F. Kelaart, M.D., F.L.S., &c.                                                          | 143   |
| Some account of the Rodiyas, with a specimen of their Language. By Simon Casie Chitty, Esq.                      | 171   |
| Rock Inscriptions in the North-Western Province. By A. O. Brodie, Esq.                                           | 181   |

## APPENDIX:

|                                                                             |            |
|-----------------------------------------------------------------------------|------------|
| Proceedings of Meetings...                                                  | lxiii.—cv. |
| Plan of the Temple of Chittreweylader Cowille. By C. S. Vanderstraaten Esq. | cvi.       |
| Rules and Regulations                                                       | cvii.      |
| Rules of the Library and Museum                                             | cx.        |
| Catalogue of the Books                                                      | cxvi.      |
| Ethnographical Collections.—Coins                                           | cxvii.     |
| Museum                                                                      | cxix.      |

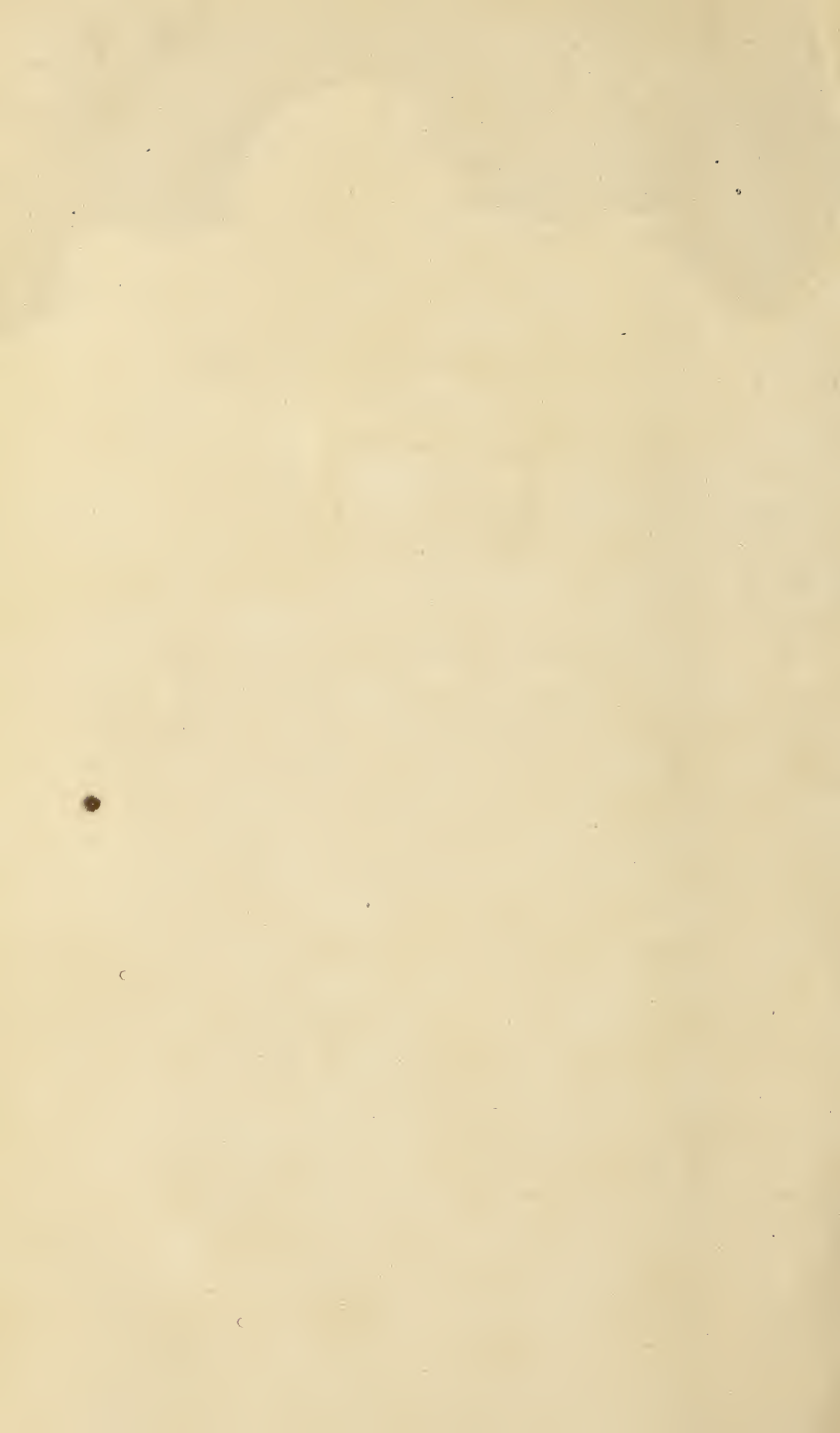
\* \* It is requested that communications may be sent to the Secretary, under cover to the Hon'ble the Colonial Secretary.

†† Parties desirous of having the Journal transmitted to them by Tappal, bearing Postage, or otherwise, will have the goodness to intimate their wishes to the Secretary.

COLOMBO:

W. SKEEN, GOVERNMENT PRINTER, CEYLON.

MDCCCLV.



and wife ; his reception there at the house of Abdul Alib, a Koreish, who afterwards raised an outcry against him, and caused him to be pelted with stones ; and his flight to the mountains, where he was ministered to by angels.

The eighteenth chapter, consisting of twelve stanzas, relates to Attas ibn Kabia, a Christian of Nineveh, who having gone to Mohammed's place of retreat, and heard him discourse about the prophet Jonas, believed on him.

The nineteenth chapter, consisting of forty-three stanzas, relates to the profession of Islam by certain of the Genii, who heard Mohammed read the Koran, after the evening prayer, in the valley of al Nakkla, during the time of his retreat to Tayif.

The twentieth chapter, consisting of thirty stanzas, treats of Kama, grandson of Iblis, who had his toes shackled together by Ali, and was afterwards released at the intercession of Mohammed.

The twenty-first chapter, consisting of eighteen stanzas, gives an account of an entertainment given by Mohammed, at which he wrought a miracle by multiplying the loaves.

III.—The Hijarat Kanda is divided into the following forty-seven chapters :

The first chapter, consisting of sixty-five stanzas, relates to the propagation of Islamism in Medina, through the instrumentality of certain inhabitants of that city, who having been on a pilgrimage to Mecca, had had an interview with Mohammed, and had sworn fidelity to him.

The second chapter, consisting of fifty-five stanzas, treats of the oath which the Medinese took to be faithful to Mohammed, and defend him from all attempts of Abu jahil and his partisans.

The third chapter, consisting of one hundred and fourteen stanzas, relates to the proceedings of a council held by the Koreish, whereat it was determined to kill Mohammed, and the flight of Mohammed from Mecca to Medina, eluding the close and vigorous pursuit of his adversaries.



The fourth chapter, consisting of forty-six stanzas, states that Abu Bekr being bitten by a snake as he was watching by the side of Mohammed in his retreat, the latter cured him by applying his spittle to the bite.

The fifth chapter, consisting of fifty stanzas, treats of Surakat, who pursued Mohammed at his flight, by desire of Abu jahil, but was obliged to give up his undertaking, in consequence of the feet of the horse on which he rode having stuck fast to the ground and so prevented him from proceeding.

The sixth chapter, consisting of twenty-six stanzas, relates to the conversion of a shepherdess, named Umme Mahubat, at whose cottage Mohammed had put up in his flight, and wrought a miracle by causing a barren ewe to yield milk.

The seventh chapter, consisting of sixty-six stanzas, contains an account of Mohammed's entry into Medina, and his magnificent reception by the people of that city.

The eighth chapter, consisting of eighty-four stanzas, relates to a Jew, named Kabukha, who became a convert to Mohammed's doctrines by accidentally discovering in the scriptures the passage which predicted his mission.

The ninth chapter, consisting of fifteen stanzas, relates to a miracle wrought by Mohammed, by feeding thirty guests with the food prepared only for two, and thereby converting them to his faith.

The tenth chapter, consisting of twenty-five stanzas, gives an account of the conversion of Uhuban, a shepherd, which was occasioned by a tiger telling him, on his expressing his surprise at hearing it speak, that this was less a cause for just surprise than the unbelief of the people.

The eleventh chapter, consisting of sixty-one stanzas, contains an account of Salman the Persian, who in his younger years embraced Christianity; but during his travels in Syria, having been informed by the learned men there, that a prophet was expected to arise in Arabia, who should establish the religion of al Forkhan, repaired thither, and meeting with

Mohammed, soon discovered him to be the person he sought, and believed on him.

The twelfth chapter, consisting of twelve stanzas, relates to the circumstance of Mohammed and his followers turning their faces towards the Kaba of Mecca when they prayed, instead of the temple of Jerusalem as they hitherto did.

The thirteenth chapter, consisting of twenty-nine stanzas, relates to the story of a wolf, which came to the Kaba, and in the hearing of the Koreish who were assembled there, declared that Mohammed was an incarnation of the divine ray (Noor) and that he was sent by God into the world to establish the true faith.

The fourteenth chapter, consisting of forty-seven stanzas, treats of the expedition of Baddhan against the tribe of Kana and the Koreish, who submitted.

The fifteenth chapter, consisting of two hundred and twenty stanzas, is occupied with an extravagant account of the nuptials of Fatima, daughter of Mohammed, with her cousin Ali.

The sixteenth chapter, consisting of fifteen stanzas, relates to the expedition of Zeebul-bahar.

The seventeenth chapter, consisting of twenty stanzas, treats of the battle of Boath.

The eighteenth chapter, consisting of forty-one stanzas, states that Mohammed, hearing that a rich caravan belonging to the Koreish was on its way to Syria, marched with his troops to intercept and plunder it, but it passed the place before his arrival, and he returned to Medina, leaving only a part of his troops to wait its return from Syria.

The nineteenth chapter, consisting of fifteen stanzas, describes the attack and plunder of the caravan by Mohammed's troops in the valley of Nakhula, half way between Mecca and Tayif.

The twentieth chapter, consisting of two hundred and fifty-six stanzas, contains an account of the victory gained by Mohammed over the Meccans headed by Abu Safian, in the valley of Badr.

The twenty-first chapter, consisting of fifty-seven stanzas, notices the hostility of the Jews of the tribe of Kainoka to the propagation of Islam, and their reduction and expulsion from the country by Mohammed.

The twenty-second chapter, consisting of twelve stanzas, relates to the reduction of the tribe of Bani Solemu, which resided at Hudri and the plunder of their goods by Mohammed.

The twenty-third chapter, consisting of twelve stanzas, contains an account of Mohammed's expedition to Nasud; the reduction and conversion of the tribe of Ghatfan, which lived there; and the plunder of a caravan of Meccans trading at Irak.

The twenty-fourth chapter, consisting of forty stanzas, relates to the expedition of Khaibar, and the destruction of Abirabik.

The twenty-fifth chapter, consisting of twenty stanzas, notices the birth of Hassein.

The twenty-sixth chapter, consisting of eleven stanzas, treats of an entertainment given to Mohammed at the house of Abu Talha, where he performed a miracle by feeding eighty fellow guests with three loaves.

The twenty-seventh chapter, consisting of two hundred and sixty-eight stanzas, contains an account of the battle of Ohud, wherein Mohammed was very near losing his life, and his uncle Hamsa was slain.

The twenty-eighth chapter, consisting of twenty-four stanzas, relates to the interview between Mohammed and Mahbat at Amru; the latter's advice to Abu Sofian to desist hostilities against Mohammed, which he disdainfully rejected, and the capture and execution of Asa, a spy.

The twenty-ninth chapter, consisting of seventy-one stanzas, gives an account of Kaab ibn al Ashraf, a Jew, who was a most bitter enemy to Mohammed, and opposed the establishment of his new religion to the utmost of his power.

The thirtieth chapter, consisting of seventeen stanzas, relates to the siege and capture of the fortress of the Jews of



the tribe of al Nadr, by Mohammed, who allowed them to depart to Syria and Khaibar, leaving all their goods and arms.

The thirty-first chapter, consisting of eighteen stanzas, treats of Mohammed's expedition to Bedr to meet the hostile Koreish, according to their challenge.

The thirty-second chapter, consisting of twenty stanzas, notices the birth of Hussein.

The thirty-third chapter, consisting of one hundred and seven stanzas, relates to the expedition of Mohammed against the tribe of Ghatfan.

The thirty-fourth chapter, consisting of ten stanzas, relates that Mohammed caused the date trees of Saibr to yield an abundant crop, in order to enable him to satisfy some Jewish creditor.

The thirty-fifth chapter, consisting of sixty-one stanzas, relates to the expedition of Mohammed against the tribe of Mustalie and his conquest over them.

The thirty-sixth chapter, consisting of eighty-three stanzas, relates to the expedition of Mohammed against the tribe of Kendah.

The thirty-seventh chapter, consisting of one hundred and eighty-three stanzas, relates that the forces of the Koreish and the tribe of Ghaftan, confederated with the Jews of al Nadhir and Koreidha, besieged Medina, but were driven away by a piercing cold east wind.

The thirty-eighth chapter, consisting of fifty-six stanzas, relates to the destruction of the tribe of Bani Koreila.

The thirty-ninth chapter, consisting of nine stanzas, notices the institution of Haji, and the profession of Islamism by Loomr and the rest of the tribe of Sahud at Honein.

The fortieth chapter, consisting of twenty-nine stanzas, describes the marriage of Mohammed with Zeinab.

The forty-first chapter, consisting of twenty-five stanzas, relates to the miraculous speaking of a camel.

The forty-second chapter, consisting of twenty-one stanzas,



relates to Mohammed's causing it to rain at the entreaty of Salykkhn.

The forty-third chapter, consisting of nineteen stanzas, states the restoration of the sight of a blind man by Mohammed.

The forty-fourth chapter, consisting of eighteen stanzas, relates to the revealing of the 58th chapter of the Koran, at the instance of Khawla, wife of Aws ibn Al Samat, who being divorced by her husband by saying "Thou art to me as my mother," came to ask Mohammed's opinion whether they were necessarily obliged to a separation.

The forty-fifth chapter, consisting of one hundred and thirteen stanzas, relates to Mohammed's expedition to Umra.

The forty-sixth chapter, consisting of one hundred stanzas, treats of the hostilities of Salma.

The forty-seventh chapter, consisting of seventeen stanzas, gives an account of the tribe of Urani.

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*Description of New or little known species of Reptiles found in  
Ceylon, by E. F. KELAART, M.D., F.L.S.*

ORDER. SAURA.

TRIBE. GEISSOSAURA.

FAM. ACONTIAS, (ACONTIADÆ.)

Head small, shielded. Muzzle conical. Rostral rather large, cup-shaped, internasal short, frontal large, frontoparietal none, interparietal triangular, moderate. Eyes distinct. Eyelids, lower well developed, upper small or wanting. Nostrils in the middle of the side of the rostral shield, with a slit to its hinder edge. Tongue scaly, imbricate, nicked at

the point. Ears very small or hidden. Femoral pores none. Body cylindrical. Limbs 4, very short, or none. Scales smooth.—*Gray*.

GENUS. *NESSIA*. *Gray*.

Muzzle conical. Ears very small, dotlike. Body cylindrical, elongate, sides rounded. Scales smooth. Legs 4, very short, far apart. Toes 3-3, subequal, clawed.

*NESSIA BURTONI?* *Gray*.

Dark rufous-brown above, and spotted longitudinally with darker brown spots. Dark grey beneath, clouded and indistinctly spotted. Tail cylindrical, rounded at the end, and coloured and spotted like the body. Limbs 4, very small, each with 3 subequal toes.

Length  $5\frac{1}{2}$  inches.

*Habitat*. Allagalla (3000 feet.)

The only specimen which we have examined is one obtained from vegetable soil in a Coffee Estate under the superintendence of Dr. Marshall.\* We are informed that this reptile is common at Ambegammoa.

If our identification is correct, it would appear probable that the only specimen in Europe, found in the Army Medical Officers' Museum at Fort Pitt, was sent from Ceylon. The specimen was named after Staff Surgeon Burton, who was the Curator of the Museum when Dr. Gray visited that establishment.

GENUS. *ACONTIAS*. *Cuvier*.

Head conical. Nostrils lateral. Internasal broad, 6 sided, frontal large, 6 sided, frontonasals and frontoparietals none; interparietals small, triangular, parietal moderate. Tongue flat, scaly, nicked at the tip. Teeth conical, blunt. Palate not toothed, with a longitudinal groove. Eyes very small. Upper eyelid wanting, lower short, scaly, opaque. Ears hidden under the skin. Body cylindrical, elongate. Scales

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\* We have since received several smaller specimens from Kaduganwa.

smooth. Limbs none, exserted. Tail cylindrical, short rounded at the end.—*Gray.*

ACONTIAS LAYARDI. *n. s., nobis.*

Light olive, and spotted longitudinally with brown spots, paler beneath.

Length of young 4 inches.

*Habitat.* Soil of the Cinnamon Gardens of Colombo.

The form of this reptile is distinguished from that of *Nessia*, above described, by the absence of limbs; in other respects it is very like the outline characters of *Nessia*. Mr. Layard procured us the specimens (apparently young) of this curious lizard.

The only other species described in Gray's Catalogue, is one from the Cape of Good Hope.

Mr. Blyth writes that he has described an allied Genus, from Rangoon, by the name of *OPHISEPS*.

FAM. UROPELTIDÆ.

ROUGH TAILS. DAPAT-NAYA, *Sing.*

Head conical, compressed, shelving and acute in front, flat above, behind. Crown covered with regular shields. Rostral produced, moderate, convex, horny, subtriangular, erect, produced, and acute behind. Nostrils roundish, lateral, simple, in the middle of the front of an erect subtriangular band-like nasal. Internasal none, frontonasal subtriangular, truncated below, contiguous above, frontal and frontoparietal distinct. Nape scaly. Labial shields  $\frac{1}{2}$  distinct. Eyes distinct, lateral, in the middle of the front of an erect eye-shield, and covered by the shield without any eyelids. Eyebrow shield none. Tongue elongate, flat, forked at the tip. Body cylindrical. Scales 6 sided, smooth, those of the hinder part and above the tail sometimes 2-keeled. Vent with three scales in front. Tail cylindrical, obliquely truncated above.

This family is intermediate between the Lizards and the Snakes; following Cuvier and others, I was induced to refer it to the latter order, and therefore did not insert it in the Synopsis

of the Families : but on re-examination and comparison with the various modifications presented by the genera of Typhlopsidæ, I have been induced to place it in the order of Lizards. Cuvier seems to have been in doubt, for though he placed the genus with the Snakes, he also regarded the species as a section of the Typhlopses. Schlegel names the group Pseudo Typhlops.—(*Gray's Synopsis.*)

This curiously formed family of Reptiles is known in the Island as *Dapat Nayas*, or double headed snakes. The natives consider them poisonous, but our experience of their habits makes us believe that they are perfectly harmless, and that they are timid creatures, seldom making their appearance aboveground; living chiefly in ant-hills or dunghills, sometimes also several feet deep in rich loamy soil. They feed on ants, small earth-worms and larvæ of insects.

It appears from Dr. Gray's Catalogue, that in the Museums of Europe there are only three species, and of these three only one is from Ceylon, viz., *Siluboura Ceylonicus*,\* many specimens of which we have found in the Kandyan Hills since our work on the Fauna of Ceylon was published. We have also, since the publication of that work, collected four other species, making in all six distinct undescribed or new species of Rough Tails (*Uropeltidæ*) in the Island of Ceylon, which we shall now describe in a connected form.

Dr. Gray subdivides the family into three groups, and we have added a fourth, to admit of two species, only one of which we have described in the Prodrômus.

#### GENUS. RHINOPHIS. *Hempr.*

Tail obliquely truncated, upper part rather convex, covered with a small oblong shield, lower edge rounded, simple, rather produced. Head acute, tapering in front. Vent shields in one marginal row.

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\* *Vide Prodrômus Faunæ Zeylanicæ.*



RHINOPHIS BLYTHII. *n. s., nobis.*

Dark yellowish brown above, with darker brown spots on the anterior third of scales. Paler beneath. Rostrum yellow. Sides of nape and neck waved with angular marks of a yellowish hue; yellow spots on each side of vent. Tail thick, slightly truncated, conical, upper part near termination has a small subtriangular nearly smooth shield, lower surface covered with broad scales. Vent shields 1-2.

Length 16 inches, circumference of the middle of body 1. 3-10 inches. Tail and neck rather thicker.

*Habitat.* Mountains of Ceylon.—Three specimens found 3 or 4 feet below the surface soil of Coffee plantations.

GENUS. UROPELTIS, (part). *Cuvier.*

Tail obliquely truncated, flattish, and covered with a flat roundish radiating granular shield, lower edge rounded, the under side of tail with 6 series of small scales.

UROPELTIS SAFFRAGAMUS. *n. s., nobis.*

Head dark olive brown, the rest of the upper surface of a blackish brown colour, with bluish bronze reflections. Beneath white. A pale white spot on each side of neck near the head. Tail deeply truncated and nearly covered with a large flat circular blackish granular shield, white and rounded beneath, and lower part covered with five series of small scales, the central series broader than the lateral ones. Vent shields 1-2. The neck and forepart of the body much thicker.

Length 9 inches.

*Habitat.* District of Saffragam, near Adam's Peak.

The only specimen of this species, which we have as yet seen, is one sent to us by Mr. Barnes De Zilva from Ratnapoora.

UROPELTIS GRANDIS. *n. s., nobis.*

Above dark brown with a bluish metallic lustre, anterior part of each scale with a blackish spot. Beneath of a pale yellow colour, spotted brown on the anterior part of scale. Head of a light olive brown colour. Tail short, abruptly

truncated; the truncated surface entirely covered with a large circular, granular shield. Vent scales 1-2.

Total length superiorly, 1 foot 7 inches. Inferiorly, 1 foot 8 inches. Tail shield nearly the size of a shilling piece. Head 8-10 inch in length.—Greatest circumference  $2\frac{3}{4}$  inches, near the neck. *Habitat.* Southern Province.

The only specimen we have seen of this very large Rough Tail, is one procured by Mr. Balkhuysen of the Colonial Medical Service, from Kerinday near Matura.

*UROPELTIS PARDALIS. n. s., nobis.*

Head small, dark olive. Upper parts black with beautiful bluish bronze reflections, irregularly spotted white. Beneath yellowish white, marked with large and small black spots, variously shaped; some pale eyed. Tail very short, obliquely truncated and with a large flat orbicular granular shield. Length,  $6\frac{1}{4}$  inches; circumference  $\frac{3}{4}$  inch.

*Habitat.* Matura. We are indebted to the Rev. Mr. Ondaatje for the only specimen we have examined of this species. The black spots on the lower parts occupy more than one scale, generally two or three contiguous scales; and they are placed without any order in various directions. The chin and throat immaculate.

GENUS. *DAPATNAYA. n. g.*

Tail obliquely truncated, upper part and tip covered with a large semiconical granular shield. Vent shields 1-2.

*DAPATNAYA LANKADIVANA. n. s., nobis.*

Above dark brown, beneath paler. Scales with pale margins. Head yellowish in some. Rostrum yellow. Shield of tail sloping down to the lower surface. Vent scales yellow; in some the spot extends beyond the vent.

Length, from 1 to 2 feet.

Thickness nearly the same throughout, about 1 inch.

*Habitat.* Common at Trincomalie, and in the Kandyan Province. Found 2 or 3 feet under ground, and in ant-hills. The young is of a dark olive brown colour.

DAPATNAYA TREVELYANII. *n. s., nobis.*

Black above, margin of scales pale. White beneath, with longitudinal series of black spots, formed of central spots on each scale. A line of triangular white spots, with their apices directed upwards, along each side. Vent white. A white line rising from this spot runs over the tail, and another whitish line extends forwards from the vent for about  $\frac{3}{4}$  inch. Tail short, and nearly covered with a white semi-conical granular shield, tip ridged, a little produced.

Length from 12 to 18 inches; nearly of the same thickness throughout, about 1 inch.

*Habitat.* Kandyan Hills, 3 or 4 feet under ground, and in the soil near the roots of Coffee trees and Cane.

Some of the young are of a bluish colour, others are spotted on the back.

## TRIBE. NYCTISAURA.

### FAM. GECKOTIDÆ.

#### BOLTALIA.

Toes free, ovate and dilated towards the end, with two series of straight narrow nearly transverse closely adpressed plates beneath, divided by a deep narrow groove, last joint compressed, free, rather exserted, clawed. Thumb dilated, and with a compressed last joint, like the toes, but clawless. Back with granular scales and a few scattered larger granules. Sides simple. Tail rather depressed, tapering, ringed, with a central series of broad scales beneath.

#### BOLTALIA SUBLÆVIS. *Gray.*

Above dark rufous brown; beneath sulphureous yellow, sometimes clouded with black. Back granular, with two or more longitudinal lines of larger granules on each side. Scales of chin large. Tail armed with adpressed spines in rings. Femoral pores in male only, from 16 to 20.

Length  $5\frac{1}{2}$  inches.

*Habitat.* The Central and Southern Provinces.

This Gecko we obtained in great abundance in Galle; we

have also seen a few at Kaduganava, after the publication of the Prodrusus. It is rarely seen on the walls of houses, generally on trees, and on the roofs of houses. The rufous brown colour changes at times into a dark grey, mottled with black. When immersed in spirits the rufous brown colour is entirely lost.

This Gecko has been mistaken for *Hemidactylus Leschenaultii*, and also, for a large variety of *H. frenatus*, but the clawless compressed last joint of the thumb will distinguish this Lizard from others. From *Peripia Peronii* it is sufficiently removed by its granular back and armed tail. This Lizard cannot be confounded with *Hemidactylus Coctæi*. It has very little resemblance to it, and the thumb of *H. Coctæi* is clawed. (*Vide* Prodrusus Faunæ Zeylanicæ.)

## ORDER. BATRACHIA.

### SUB-ORDER I. SALIENTIA.

FAM. RANIDÆ. *Frogs.* ATTY KITTA. *Sing.*

GENUS. RANA. *Linn.*

Skin smooth, hinder extremities very long, formed for leaping; toes palmated, teeth in the upper jaw, and in the palate.

RANA KANDIANA. *n. s., nobis.*

Beautiful grass green above, beneath orange red; inside of limbs slightly vermiculated with yellow. Skin of upper parts rather rough, coriaceous; a white granular ridge on each side. Length  $3\frac{1}{2}$  inches.

*Habitat.* Kaduganava, Kandyan Province.

We have only seen two specimens of this rare frog.

FAM. HYLIDÆ. *Tree Frogs.* GHAS ATTY KITTA. *Sing.*

GENUS. LIMNODYTES. *Dum. et Bib.*

Tongue long, narrowed in front, widened, forked, free behind; the teeth on the vomer forming two groups, between



the internal openings of the nostrils; tympanum distinct; Eustachian tubes middling, fore fingers free; toes completely or partly webbed; subdigital disks slightly dilated; process of the first os cuneiforme blunt, very minute; males with vocal sacs; sacral transversal processes not dilated.

LIMNODYTES MUTABILIS. *n. s., nobis.*

Upper parts very changeable; generally, of a bright green above and yellow beneath; a red line on the outer edge of limbs; sometimes of a dark chesnut on the upper parts, and variegated with yellow and green on the sides and limbs.—Of a more slender form than the common tree Frogs *Polypedates cruciger*, and *P. Leucomystax*. About 2 inches long.

*Habitat.* Cinnamon gardens; Cotta near Colombo. If not mistaken, we have also seen this elegant frog at Nuwera Ellia. In spirits the colours fade into a pale leaden hue; the red streak on the limbs disappears last.

LIMNODYTES MACULATA. *n. s., nobis.*

Brown, spotted and streaked with black or dark brown; beneath pale, seldom spotted. About  $1\frac{1}{4}$  inch long.

*Habitat.* Galle, Southern Province.

We believe this species to be generally distributed, but have before mistaken it for the young of *Polypedates Leucomystax*.

FAM. BUFONIDÆ. *Toads.* GAMEDEA, *Sing.*

GENUS. ENGYSTOMA. *Gray.*

No tympanum nor parotid visible externally; an oval body; the head and mouth very small, and feet but slightly palmated.

ENGYSTOMA RUBRUM. *n. s., Jerdon.*

*Synon.* Engystoma cinnamomea. *m. s.*

Cinnamon red, spotted black; limbs also spotted; belly whitish. Length (young)  $1\frac{1}{2}$  inch.

*Habitat.* Southern India (?) Ceylon.—

Galle, 17th May, 1853.

*Synopsis of Ceylon Reptiles, by E. F. KELAART, M.D.*

In presenting to the Asiatic Society a more complete Synopsis of Ceylon Reptiles, which the continued kindness of friends in various parts of the Island has enabled me to form, I have much pleasure in expressing my best thanks to the Members of the Asiatic Society of Ceylon, and to Sir George Anderson, Dr. Fergusson, P.M.O. and the Hon'ble Mr. MacCarthy, Colonial Secretary, for the facilities they have afforded me in my further researches in the Natural productions of the Island.

The joint labours of Mr. Edgar Layard and myself have nearly completed the examination of the Mammals, Birds, Shells, Reptiles and Insects of this Island. The fresh water Fishes are now engaging my attention, and any specimens of this Class will be thankfully received. Dr. Schmarda, Professor of Zoology of the University of Prague, is now on a visit to the Island for the chief purpose of examining the Infusoriæ, and Professor Harvey of Trinity College, Dublin, is also, we believe, at present engaged in examining into the Echinodermata and Crustacea of the Island, so that it may be hoped, it will not be very long before the neglected Fauna of Ceylon is completely worked out.

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*Synopsis of Ceylon Reptiles.*

ORDER. SAURA. *Lizards.*

SUB-ORDER. I. LEPTOGLOSSÆ.

*Slender-tongued Lizards.*

FAM: MONITORIDÆ. *Monitors.*

- |                                 |                                 |
|---------------------------------|---------------------------------|
| 1 Monitor Dracæna, Gray.        | Guana. Talla Goya, Sing.        |
| 2 Hydrosaurus Salvator, Wagler. | Water Guana. Cabara Goya, Sing. |

FAM: SCINCIDÆ. *The Scincs.*

- |                         |                      |
|-------------------------|----------------------|
| 3 Riopa punctata, Gray. | Puchee Bramin, Port. |
|-------------------------|----------------------|

- 4 Riopa Hardwicki, *Gray.* Puchee Bramin, *Port.*  
 5 Mabouia elegans. (?) *Gray.* do.  
 6 Taliqua rufescens, *Gray.* Large do.

## FAM: ACONTIADÆ.

- 7 Nessia Burtoni. (?) *Gray.* Ground Bramin.  
 8 Acontias (?) Layardi, *n. s., nobis.* Layard's do.

FAM: TYPHLOPSIDÆ. *Typhlops.*

- 9 Argyrophis Bramicus, *Daud.* Slow worm.

—————2 varieties.

FAM: UROPELTIDÆ. *Rough tails, or False snakes.*Dapatnaya, *Sing.*

- 10 Uropeltis grandis, *n. s., nobis.*  
 11 Uropeltis Pardalis, *n. s., nobis.*  
 12 Uropeltis Saffragamus, *n. s., nobis.*  
 13 Rhinophis Blythii, *n. s., nobis.*  
 14 Dapatnaya Lankadivana, *n. s., nobis.*  
 15 Dapatnaya Trevelyanii, *n. s., nobis.*  
 16 Siluboura Ceylonicus, *Gray.*

## SUB-ORDER II. PACHYGLOSSÆ.

*Thick-tongued Lizards.*FAM: GECKOTIDÆ. *The Geckoes.*Cheechas, *Port.* Hoona, *Sing.*

- 17 Hemidactylus trihedrus, *Lesson.* The triangular tubercled Gecko.  
 18 Hemidactylus maculatus, *Dum.* The spotted do.  
*et Bib.*

- 19 Hemidactylus Pieresii, *n. s., nobis.* Pieres' Gecko.  
 20 Hemidactylus Coctœi, *Dum. et Bib.* Cocto's do.  
 21 Hemidactylus frenatus, *Schlegel.* The streaked Gecko.  
 22 Hemidactylus Leschenaultii, (?) Leschenault's do.

*Dum. et Bib.*

- 23 Boltalia sublaevis, *Gray.* The Boltalia.

- 24 *Peripia Peronii*, *Dum. et Bib.* Peron's Gecko.  
 25 *Gymnodactylus* (?) *Kandianus*, The diurnal Gecko.  
*n. s., nobis.*

FAM: AGAMIDÆ. *The Agamas.*

Blood-suckers, *Vulg.* KattooSah, *Sing.*

- 26 *Sitana Ponticereana*, *Cuvier.* The Sitana.  
 27 *Lyriocephalus scutatus*, *Wagler.* Lyre-headed Lizard.  
 28 *Ceratophora Stoddartii*, *Gray.* The needle-nosed Lizard.  
 29 *Salea Jerdonii*, *Gray.* Dr. Jerdon's Salea.  
 30 *Calotes Ophiomachus*, *Gray.* Red headed Green Lizard.  
 31 *Calotes Rouxi*, *Gray. Blyth.* } Green Lizard.  
 vel *C. Viridis*, *Gray. apud nos.* }  
 32 *Calotes mystaceus*, *Dum. et Bib.* Red spotted Green Lizard.  
 33 *Calotes versicolor*, *Dum. et Bib.* The common Blood-sucker.

FAM: CHAMELEONIDÆ. *Chameleons.*

- 34 *Chameleo vulgaris*, *Daud.* The true Chameleon.

ORDER. OPHIDIA. *Serpents.*

Cobras, *Port.* Saroopeya, Satta, *Sing.*

*Innocuous Serpents.*

FAM: BOIDÆ.

BURROWING.

- 35 *Cylindrophis maculata*, *Wagler.* The red and black netted Snake.

TERRESTRIAL.

- 36 *Python molurus*, *Gray.* The Rock Snake.

FAM: COLUBERIDÆ. *Bonaparte.*

TERRESTRIAL.

- 37 *Calamaria Scytale* ?  
 38 *Lycodon*, 2 or more species.  
 39 *Xenodon purpurascens*, *Schlegel.* var.  
 40 *Coluber Korros*, *Reinwardt.*



## ARBORIAL.

- 41 *Dipsas multimaculata* (?) *Schlegel*.  
 42 *Dryinus Prasinus*, *Reinwardt*. The Whip Snake.  
     *D. nasutus* 2 or more varieties.  
 43 *Leptopthis pictus*, *Gmelin*.  
 44 *Leptopthis ornatus*, *Shaw*.  
 45 *Leptopthis* sp.

AQUATIC. Deye Naya, *Sing*.

- 46 *Tropidonotus umbratus*, *Daudin*. (var.) Large blackish water Snake.  
 47 *Tropidonotus stollatus*, *Linn*. The speckled do.  
 48 *Tropidonotus schistosus*, *Daud*. The olive brown do.  
 49 *Cerberus cinereus*, *Cuvier*. The black do.

## Venomous Serpents.

FAM: VIPERIDÆ. *Vipers*.

## TERRESTRIAL.

- 50 *Bungarus candidus*, *Linn*.  
 51 *Naya lutescens*, *Daudin*. var. Cobra de Capello.  
     ——var. *Nigra*.

## ARBORIAL.

- 52 *Trigonocephalus Hypnale*, *Wagler*. Caravilla.  
 53 *Trimesurus gramineus*, *Shaw*. The green Caravilla.  
 54 *Trimesurus Ceylonensis* (?) *Gray*. *apud Gray*.  
 55 *Megaera trigonecephala*, *Wagler*. Palāgolla.  
 56 *Daboia elegans*, *Gray*.  
 57 *Daboia Russellii*, *Gray*. } Polanga.

N.B.—There are about six or eight more Ceylon Snakes, which have not yet been identified.

ORDER. CHELONIA. *Tortoises*.

Cowdoo, *Port*. Ibba, *Sing*.

## FAM: TESTUDINIDÆ.

- 58 *Testuda Indica*, *Gmelin*. The large land Tortoise.  
 59 *Testuda stellata*, *Schweig*. The yellow starred do.

FAM: EMYDIDÆ.

- |    |                                                      |                                           |
|----|------------------------------------------------------|-------------------------------------------|
| 60 | <i>Emys trijuga</i> , var. <i>Schweig.</i>           | Marsh Tortoise.                           |
| 61 | <i>Emys Seba</i> , <i>Gray</i> , <i>apud Blyth</i> . | do.                                       |
| 62 | <i>Emyda punctata</i> . <i>Gray</i> .                | River Tortoise. Keeree Ibba. <i>Sing.</i> |

FAM: CHELONIDÆ.

- 63 *Caretta imbricata*, *Gray*. Sea Turtle. Kokoeloo koosoomba, *Sing.*  
64 *Chelonia virgata*, *Schweig.* Edible do. Gal koosoomba, *Sing.*

ORDER. EMYDOSAURI. *Crocodiles.*

- Lagartoo, Port.      Kimboola, Sing.
- 65 Crocodilus porosus, Schweig. { The Indian river Crocodile.  
Allie Kimboola, Sing.
- 66 Crocodilus palustris, Lesson, male. { Marsh Crocodile.  
Halle Kimboola. Sing.
- Crocodilus Bombifrons*, female. apud Blyth.

AMPHIBIA.

ORDER. BATRACHIA, *Frogs.*

- Madookoo, *Port.*      Attykitta, *Sing.*

FAM: RANIDÆ, *Water Frogs.*

- |    |                                              |                              |
|----|----------------------------------------------|------------------------------|
| 67 | <i>Rana cutipora</i> , <i>Dum. et Bib.</i>   | Large green bull Frog.       |
| 68 | <i>Rana Malabarica</i> , <i>Dum. et Bib.</i> | The green spotted bull Frog. |
| 69 | <i>Rana Bengalensis</i> , <i>Gray.</i>       | The small green do.          |
| 70 | <i>Rana Tigrina</i> , <i>Daudin.</i>         | The golden Frog.             |
| 71 | <i>Rana Newera Elliana</i> , <i>nobis.</i>   | The blackish Frog.           |
| 72 | <i>Rana Kandiana</i> , <i>nobis.</i>         | The red bellied Frog.        |
| 73 | <i>Rana Leschenaultii</i> (?) <i>Dum. et</i> | Leschenault's Frog.          |
|    | <i>Bib. apud Blyth.</i>                      |                              |

FAM: HYLIDÆ. *Tree Frogs.*Ghas Gemba. Attykitta, *Sing.*

74 Polypedates leucomystax, }  
*Gravenhorst.* } The common tree Frog.

75 Polypedates cruciger, *Blyth.* The cross-backed do.

76 Polypedates stellata, *nobis.* The white spotted green tree Frog.

77 Limnodytes mutabilis, *nobis.* The changeable tree Frog.

78 Limnodytes maculata, *nobis.* The brown spotted do.

FAM: BUFONIDÆ. *Toads.*Gemmadea, *Sing.*

79 Bufo melanostictus, *Schneider.* The common house Toad.

80 Engystoma marmorata, *Gray.* The green spotted do.

81 Engystoma cinnamomea, *nobis.* The red do.

## ORDER. PSEUDOPHIDIA.

## FAM: CÆCILIIDÆ.

82 Ichthyophis glutinosus, *Gray.* The glutinous Slow worm.

N. B.—Mr. Blyth in his last Report, J.A.S.B. No. 4 of 1853, enumerates among the Reptiles we sent him, the following new species, *Limnodytes lividus*, *L. macularis*, *Engystoma rubrum*, Jerdon. *Pyxicephalus Fodiens*, Jerdon, and *Rana robusta*.

## THE LAWS OF THE BUDHIST PRIESTHOOD.

(*Continued from p. 26.*)

Some of the pupils neglected to perform their duty to their preceptors. This being reported to Budha, he decreed :

19. It is not proper, priests, that the pupil should not perform his duty to his preceptor. He who does not perform his duty is guilty of Dukkata.

They still remained disobedient, upon which Budha decreed :

20. I permit, priests, that the disobedient shall be suspended (from his position as pupil residing with his preceptor.)

And thus shall he be suspended : the preceptor may declare by words, or intimate by signs, " I suspend you," or he may say " Return not to this place : " or " Take away your robes and bowl : " or " I have no need of your services." Should he declare this by words or intimate it by signs, the pupil is suspended, but not otherwise.

A pupil thus suspended did not seek reconciliation. Budha decreed :

21. I direct, priests, that forgiveness be solicited.

The pupil still declined to seek reconciliation. This was reported to Budha, who decreed :

22. Priests, he who is suspended shall not be without seeking forgiveness. He who does not seek forgiveness is guilty of Dukkata.

Some preceptors, upon forgiveness being solicited, refused to be reconciled. This was reported to Budha, who decreed :

23. Priests, I direct that forgiveness be granted.

Notwithstanding this direction, some of the preceptors would not forgive ; and the pupils left the priesthood, or joined themselves to other religious communities. Upon this Budha decreed :

24. Priests, it is not proper to refuse forgiveness when it is solicited. He who refuses to forgive is guilty of Dukkata.

Some preceptors suspended the obedient, and permitted the disobedient to remain without suspension. This being reported to Budha, he decreed :



25. Priests, it is improper to suspend those who perform their duty. He who does so is guilty of Dukkata. It is improper, priests, not to suspend those who neglect their duty. He who does not place such under suspension is guilty of Dukkata.

Five reasons are assigned why a pupil may be placed under suspension : If he does not manifest proper affection, attachment, and respect to his preceptor ; or if he be without modesty of deportment, or neglect his studies. Under these circumstances if the preceptor suspends him he acts correctly, but if he neglect to suspend him he is culpable.

There were at that time priests of more than ten years standing who were unwise and unlearned, and who yet received other priests as pupils. In consequence of this, in some instances, the preceptor was ignorant and the pupil learned, and much discontent arose : both people and priests complaining of its impropriety. This being brought to the notice of Budha, he investigated the circumstances, reprovved the offenders, and decreed :

26. Priests, a person who is unwise and incompetent shall not receive a resident pupil. I permit wise and competent priests, of ten or more years standing, to receive resident pupils.

Some of the superiors (upajjhāyo) and preceptors (āchariyo) of the priests having left their former place of residence, and others having left the priesthood or joined other fraternities, and some having died, the priests did not know how far they were released from the duty of attending upon them. The subject was brought to the notice of Budha, who decreed :

27. Priests, for these five reasons a priest is released from the duty of living with his upajjhāyo (superior). If the superior remove to another place ; if he leave the priesthood ; if he die ; if he join some other fraternity ; or if he give leave of absence. For any of these reasons a priest is released from the duty of living with his superior.

Priests, for these six reasons a priest is released from the

duty of living with his preceptors (āchariyo). If the preceptor remove to another place: if he leave the priesthood; if he die; if he join some other fraternity; if he give leave of absence; or if the pupil return to the residence of his superior. For any of these reasons a priest is relieved from the duty of living with his preceptor.

Budha then defined the qualifications necessary to be possessed by those who became superiors, preceptors, or who have sāmaneros (novices) under them.

1. He should be perfect in moral virtue (i. e. without need of further instruction or advice respecting virtue), in meditation, in wisdom, in deliverance from desire, and in the knowledge resulting from that deliverance: he must also be able to establish others in the same virtues and excellencies.

As there are qualities possessed only by the Rahats, or those delivered from the bonds of existence, and as for many centuries no priest has attained to this perfection, the above rule is not binding at the present time, but the following qualifications are still required: He must be orthodox, modest and grave in his deportment, diligent, wise, able to instruct his pupils and resolve their doubts, well acquainted with the rules of ecclesiastical discipline, free from ecclesiastical censure, and of ten or more years standing in the priesthood.

One who had been a member of another body of teachers, became a Buddhist priest: but disputing the doctrines taught by his superior, he left the priesthood and returned to the society to which he formerly belonged. Afterwards he came back and requested ordination again as a Buddhist priest. The case being brought before Budha, he decreed:

28. Priests, if any one who has been a member of another body of teachers, shall become a priest, and disputing the doctrines taught by his superior, unite himself again to the body to which he formerly belonged: should he return he must not be re-admitted to Upasampadā.

Should any one, formerly a member of another body of teachers, have a desire to embrace this doctrine and discipline, to become a priest and receive Upasampadā, he shall be received on probation for four months. The permission shall be granted as follows :

First, having caused the head and beard to be shaven and a yellow garment to be put on, the candidate shall remove his garment from one shoulder, worship the feet of the priests, and kneeling down say, with uplifted hands, I take refuge in Budha, I take refuge in Damma (his doctrine), I take refuge in the Sangho (the priesthood). A second time I take refuge in Budha, I take refuge in Damma, I take refuge in the Sangho. A third time I take refuge in Budha, I take refuge in Damma, I take refuge in the Sangho.

Then, priests, the candidate shall come to the Sangho, remove his garment from one shoulder, worship the feet of the priests, and kneeling down say with uplifted hands, Lords! I, N., have been a member of such a body of teachers. I desire to receive this doctrine and discipline, and to obtain Upasampadā. Lords! I request four months' probation: a second and a third time he is to make this request.

A fluent and learned priest shall then make this known to the Sangho, saying, Hear me, my Lord the Sangho, such a person, formerly a member of another body of teachers, desires to receive this doctrine and discipline, and to obtain Upasampadā. He requests to be admitted to a probation of four months. If it be a convenient time for the Sangho, the Sangho will admit this person, formerly a member of another body of teachers, to a probation of four months. This is the proposition.

Hear me, my Lord the Sangho, this person, formerly a member of another body of teachers, desires to receive this doctrine and discipline and to obtain Upasampadā: he requests to be admitted to a probation of four months. The Sangho grants a probation of four months to this person, formerly a

member of another body of teachers. If any venerable one consents to grant four months probation to this person, formerly a member of another body of teachers, let him remain silent. If he do not consent let him speak. Probation for four months is given by the Sangho to this person, formerly a member of another body of teachers. The Sangho consents and therefore is silent, and thus I receive it.

Budha then explains the reason of this proceeding, arising from the habits of these teachers of other bodies; namely, that they visit the houses for alms at unseasonable hours, (when the women may be sleeping with their persons exposed :) that they resort for alms to places where there are prostitutes, widows and grown up girls, or where there are catamites, or female ascetics; that they are loud and obstreperous in conversation; not careful in the things they ought to be engaged in, are indolent, inquisitive, not under controul, dull in understanding, lose their temper when their doctrines are controverted, and speak against Budha, his doctrines and the priests. He then states that if they continue thus, they ought not to receive Upasampadā at the end of their probation.

He also directs, that if the person who seeks to be admitted on probation be a naked ascetic, the Upajjāyo shall supply him with garments and see to his being shaved. That if an ascetic with clotted hair, a worshipper of fire, seek admission to the priesthood, he may be admitted without probation, as their doctrines are correct respecting the results of moral conduct. And that any one who is of the Sākya race is to have the same privilege, although he may have been a member of any other body of teachers; and that he concedes this to them as being of the same race with himself.

At one period great sickness prevailed in Magadha, especially leprosy (කුට්ඨාන kutt'han), ulcers (ගාන්ධො ගාන්ධො gando, eruptions of various kinds), dry itch (කිලාසො), consumption (කොසො), and epilepsy (අපමාන); these were named the five diseases. A number of persons sought the aid of the king's physician, offering him the whole of their property, and even to become



his slaves, if he would undertake their cure. The physician replied, that he could not possibly attend to them, his duty to the king, to the royal household, to Budha and his priests, who were placed under his care by the king, occupying the whole of his time. Upon this some of the men determined to join the priesthood that they might obtain the aid of the royal physician. They accordingly went to the priests, were admitted, and received ordination. Being priests the physician prescribed for them, and they were restored to health. After this they left the priesthood. The physician meeting one of them recognized him and said, Were you not a priest? He acknowledged it, and stated that he had been a priest solely to obtain his aid as a physician, and that upon being cured he had left the priesthood. The physician was much displeased, and complained to Budha, requesting him to prohibit persons having these diseases being admitted into the priesthood. Budha soothed his mind with religious discourse, and upon his departure decreed:

29. Priests, it is not proper to admit into the priesthood any person who is affected with the five diseases. He who admits such a person into the priesthood is guilty of Dukkata.

Disturbances having occurred in the provinces, the king of Magadha ordered his troops to quell them. Some of the celebrated warriors thought, If we go delighting in war, we shall commit sin and bring much demerit upon ourselves; by what means shall we escape so as to avoid committing sin and be able to perform good works. The priests are good and virtuous men: if we join the priesthood our object will be accomplished. They accordingly went to the priests, were admitted into the priesthood and received Upasampadā. When the commander of the forces enquired where such and such soldiers were, he was informed that they had become priests. Upon learning this he was much displeased, and reported the case to the king Bimbisāro, stating that such persons ought to be capitally punished, together with those who had admitted them into the priesthood.

King Bimbisāro upon this waited on Budha and said, There are in my kingdom persons destitute of faith and strongly disposed to injure the priests, it will be well for them not to admit into the priesthood any person belonging to the king's forces. When the king was gone, Budha called the priests together, stated the case, and decreed :

30. Priests, no person in the king's pay shall be made a priest. He who admits such a person into the priesthood is guilty of Dukkata.

The noted thief Anguli Malo was admitted into the priesthood. The people seeing him were alarmed and terrified, and fled away to other places. The people generally gave utterance to their extreme dissatisfaction, and the priests reported it to Budha, who decreed :

31. Priests, no outlawed felon shall be admitted into the priesthood : he who admits him is guilty of Dukkata.

The king of Magadha had commanded that no violence should be offered to any of the priests of Budha, as they were holy and virtuous men. On one occasion a thief had been cast into prison : but he breaking out of prison escaped and obtained admission into the priesthood. He was afterwards recognized, but when some persons went to apprehend him they were reminded of the king's command. The people murmured and said, These sons of Sākya are privileged to do what they will with impunity. Why do they admit to the priesthood thieves who have broken out of prison. Upon being informed of this, Budha decreed :

32. Priests, no thief who has broken out of prison shall be admitted into the priesthood : he who admits him is guilty of Dukkata.

Under similar circumstances the following laws were made by Budha.

33. No proclaimed thief shall be admitted into the priesthood : he who admits him is guilty of Dukkata.

34. No person who has been flogged by a judicial sentence shall be admitted into the priesthood : he who admits him is guilty of Dukkata.

35. No person who has been branded by a judicial sentence shall be admitted into the priesthood : he who admits him is guilty of *Dukkata*.

36. No person who is in debt shall be admitted into the priesthood : he who admits him is guilty of *Dukkata*.

37. No slave shall be admitted into the priesthood : he who admits him is guilty of *Dukkata*.

A lad of the goldsmith trade quarrelled with his parents, and going to the Monastery was made a *Sāmanero* priest. His parents came to the Monastery and enquired of the priests if they had seen such a lad there. They, not being aware of the circumstance, stated that they had not seen him. After further search the boy was found, having been admitted as a novice. The parents loudly complained, affirming that the priests were shameless liars. From this it appears that priests were accustomed to ordain novices on their individual responsibility, without any reference to a Chapter of the Order regularly assembled. The case was reported to Budha, who, to prevent such irregularities, decreed :

38. I direct, priests, that the shaving of the head shall be notified to the Sangho.

(In consequence of this law, whenever a lad is to be received into the priesthood as a novice, the Sangho is to be assembled and the circumstances stated to the meeting, prior to the head of the candidate being shaved.)

There were in Rajagaha 17 children who were friends, Upāli being the principal one. His parents thought much of a profession for him by which he might obtain a livelihood after their death. They thought of his being a scribe, but remembered that writing tires the fingers : then they thought of his being an accountant, but that would be injurious to his chest : were he to become a painter that would try his eyes. They then reflected, that the sons of Sākya were virtuous men ; that they were well fed and comfortably lodged, and that it would be desirable to make him a priest. Upāli heard his parents speaking on the subject, and being pleased with



the plan went to his young friends and proposed that they all should become priests. The children replied, If you, Upali, become a priest we also will become priests; and each child requested his parents' permission to join the priesthood. The whole of the parents were pleased with the proposal of the children, and took them to the priests who ordained them as novices and gave them Upasampadā. In the night the children became restless and cried for gruel, and for something to eat, and the priests endeavoured to quiet them without success. Bagawa heard the noise, and enquired the reason of it. Ananda informed him of the circumstances; upon which he assembled the priests, and enquired if they had admitted persons to Upasampadā whom they knew to be under twenty years of age. They acknowledged that they had done so: upon which he reproved them, stating that lads under twenty years of age were not able to endure the hardships connected with being priests, and decreed:

39. Priests, it is not proper to admit to Upasampadā a man who is known to be less than twenty years of age. Whoever admits such a person to Upasampadā is guilty of Dukkata.

A whole family died of an epidemic disease, excepting the father and a male child. They both became priests (the father Upasampadā, the child Sāmanero) and went out together to collect food. When any thing was given to the priest, the child being near him said, Father, give me some! Father, give me some! The people observing this, murmured and said, These sons of Sākya are incontinent. This child has been begotten on a priestess. The other priests, hearing this, reported the case to Budha, who decreed:

40. Priests, it is not proper that a child under five years of age should be admitted into the priesthood: he who admits him is guilty of Dukkata.

A pious and faithful family who ministered to Ananda was cut off by the pestilence, only two male children, under five years of age, being left. These children having been



accustomed to see the priests and minister to them, wept because they did not see them as usual. Ananda was desirous of preserving the children and admitting them into the priesthood, but they were under the prescribed age. He mentioned the case to Budha, who enquired if the children were able to drive away the crows. He replied that they were able. Upon this, Budha assembled the priests, and said :

41. Priests, I permit children under five years of age to be admitted into the priesthood, if they be able to drive away the crows.

The priest Upanando had two Samaneros, who living together polluted each other. The circumstance becoming known, Budha decreed :

42. Priests, two Samaneros shall not be under one person. He who receives two Samaneros is guilty of Dukkata.

Bagawa spent the entire year in Rajagaha, and the inhabitants complained that the place was darkened with the number of priests. Upon this being reported to Budha, he determined to visit Dakkhinigiri, and sent Ananda to inform the priests that as many of them as were inclined might accompany him. They replied, Bagawa has commanded us to remain near our superiors and preceptors ten years. If they go, we will accompany them, otherwise we cannot go. In consequence of this Bagawa had few attendants, and upon his return he decreed :

43. Priests, I direct that fluent speaking and well informed priests shall remain as pupils five years. They who are not fluent speaking shall remain as pupils so long as they live.

The qualifications requisite to free a priest of five years' standing from remaining a pupil are; that he be modest and reverent in his deportment; diligent, intelligent, free from ecclesiastical censure, orthodox, learned, wise, well acquainted with ecclesiastical laws, and able distinctly, clearly; and in proper order, to recite the two Pratimokshas.

Bagawa having resided in Rajagaha as long as he thought it advisable, left that place to visit his native city Kapila

Watt'hun, and arriving there abode in a Nigrodha grove. The mother of Rāhula (Goutama's wife prior to his becoming a priest,) said to Rāhula, Your father is come, go and ask for your inheritance. Then Prince Rāhula went to Budha, and standing before him said, Pleasant is your shadow, Samana. Budha then rose from his seat and departed; but Rāhula followed him saying, Samana, give me my inheritance! Samana, give me my inheritance! Then Budha called Sāriputta and said, Sāriputta, admit Prince Rāhula into the priesthood. Sāriputta enquired in what manner he should ordain him: upon which Budha assembled the priests, and said:

44. Priests, I direct that a Samanero shall be ordained by thrice repeating the Saranas. And thus shall he be ordained. First, let the head and beard be shaved, yellow robes put on, and one shoulder being bared, let (the candidate) worship the feet of the priests, kneel down and with joined hands say, I take refuge in Budha, I take refuge in the doctrine, I take refuge in the priesthood. A second time I take refuge in Budha, a second time I take refuge in the doctrine, a second time I take refuge in the priesthood. A third time I take refuge in Budha, a third time I take refuge in the doctrine, a third time I take refuge in the priesthood. I direct priests, that by this thrice repeating the Saranas, a Samanero shall be ordained.

Sariputta accordingly ordained Prince Rāhula a priest.

The king Suddhodano, Budha's father, came to him and having worshipped him sat down and said, I have to solicit a boon. He then stated that he experienced much sorrow when Goutama became a priest: that this was much increased when Ananda joined the priesthood, and that the ordination of Rāhula, whom he loved with the most tender affection, was like tearing off the skin and crushing the bones and marrow; and requested that in future no person should be admitted into the priesthood, unless he had first obtained the consent of his parents. Budha consoled his father by explaining his doctrines to him, and when the king retired, he assembled his priests, and said:

45. Priests, no person should be received into the priesthood who has not previously received the consent of his parents. He who receives him is guilty of Dukkata.

Afterwards Budha left Kapila Watt'hu and going to Sawatti resided at Jetawany. At that time a family who ministered to Sāriputta brought one of their sons to him and requested that he would receive him as a Samanero. Sāriputta, although desirous to meet their wishes, remembered that Budha had prohibited any priest having more than one Sāmanero under his charge, and he already had Rāhula. He stated the circumstance to Budha, who decreed :

46. I permit, priests, that an eloquent and well informed priest may have two Samaneros under his care, or as many as he is able to advise and instruct.

The Samaneros then desired to know what precepts they were to observe, and upon its being reported to Budha, he decreed :

47. I direct, priests, that Samaneros shall be taught these ten precepts, and obey them: To abstain from destroying life: to abstain from theft: to abstain from incontinence: to abstain from lying: to abstain from intoxicating liquors: to abstain from taking food after mid-day: to abstain from dancing, singing, playing on musical instruments and theatrical representations: to abstain from the use of flowers, garlands, perfumes and cosmetics: to abstain from the use of high or large couches; and to abstain from receiving gold or silver. I direct priests, that Samaneros shall be taught these ten precepts, and be subject to them.

Some Samaneros became careless, and disrespectful and disobedient to the priests. This being reported to Budha, he decreed :

48. Priests, I direct that Samaneros guilty of the five acts following, shall be subject to Penal Discipline (දඩකම්ම danda kamman) namely, if they strive to diminish the prosperity of the priests; to render them uncomfortable; to remove them from their dwellings; if they speak insolently and



abusively to the priests; or if they excite dissensions between priests; I direct, priests, that for any of these five offences a Samanero shall be placed under penal discipline.

The priests were doubtful how this discipline should be exercised: upon which Budha decreed :

49. I direct, priests, that they shall be placed under an interdict, ( *अन्विष्टो* a restraint or prohibition respecting the performance of certain actions or being in certain places.)

Some priests prohibited Samaneros from being in any part of the grounds belonging to the Monastery. In consequence of which some of them ceased to be priests, while others joined other religious bodies. This was reported to Budha, who decreed :

50. It is not proper, priests, to prohibit an entrance into the entire grounds connected with the priest's residence: whoever does so is guilty of Dukkata. I permit priests, that entrance into the place where the Upādya lives, or to which he returns, may be interdicted.

Some priests placed an interdict on the door of the mouth (i. e. prohibited the Samanero from eating or drinking), and when persons brought conjee and rice for the use of the priests, they invited the Samaneros to partake thereof. They replied, We cannot, friends: we are prohibited by the priests. The people were much dissatisfied with this conduct. The circumstance was brought to the notice of Budha, who decreed :

51. It is not proper, priests, to prohibit (the Samaneros) from eating. He who does so is guilty of Dukkata.

Some of the six class priests, (that is, a fraternity of six principal priests, who had many disciples and adherents among the junior priests) placed Samaneros under an interdict without the authority or privity of the Samaneros' Upādya: and when the Upādya sought for them, saying, Where are our Samaneros, we do not see them; they were informed that the six class priests had put them under an interdict. They complained to Budha, who decreed :

52. It is not proper, priests, to put (a Samanero) under an



interdict without the concurrence of the Upādyo: whoever does so is guilty of Dukkata.

Some of the six class priests enticed the Samaneros to leave their own Upādyas and wait upon them, so that those Upādyas had to bring water, &c., and wait on themselves. This was reported to Budha, who decreed :

53. It is not proper, priests, to entice the attendants of other priests; whoever does so is guilty of Dukkata.

A Samanero seduced a priestess. The priests complained to Budha, who decreed :

54. I direct, priests, that a Samanero who is guilty of the ten following crimes shall be expelled the priesthood. If he destroy life; if he take that which is not given to him; if he be incontinent; if he speak lies; if he drink intoxicating liquors; if he speak evil of Budha; if he speak evil of the doctrine; if he speak evil of the priests; if he be heterodox; if he debauch a priestess. I direct, priests, to expel from the priesthood (නාසေතු *nāsetun* to kill, destroy) a Samanero guilty of any of these ten crimes.

A eunuch was admitted into the priesthood, but continued to act as a catamite. Budha decreed :

55. Priests, if a eunuch have not received Upasampadā it should not be given to him: or if he have received Upasampadā he shall be expelled.

A person of an ancient family who had been educated in luxury became exceedingly poor, and did not know how to obtain a subsistence: being quite unfit for business of any kind, seeing that the priests fared well, he determined to shave his head and assume the priestly garb. He accordingly put on the yellow robes, took a begging bowl in his hand and going to a Monastery represented himself to be a priest of Budha, but he was soon detected, being unacquainted with the rules of the priesthood. The case being investigated by Upāli was reported to Budha, who decreed :

56. If a person fraudulently dwell with the priests (he not having been admitted as a Samanero) if he have not received

Upasampadā he shall not receive it: or if he have received Upasampadā he shall be expelled.

57. A person who has left the priesthood and joined another religious fraternity, if he have not received Upasampadā shall not receive it: or if he have received Upasampadā he shall be expelled.

[The next law is introduced by a tale respecting a Nāgo. These are represented as immense snakes of the Cobra Capella tribe, but of miraculous power, and altogether distinct from the common snake species: they have a peculiar residence of their own where they possess immense riches. They can assume the human form, intermarry with the human race and have children by them: yet their natural form is serpentine. Buddhist legends abound with tales respecting them.]

A Nāgo was entirely disgusted with being of a serpentine race, and thought, How can I speedily escape from this state, and become a human being. He reflected on the purity and holiness of the Buddhist priests, and concluded that if he could be received into the priesthood and receive Upasampadā his object would be accomplished. He therefore assumed the form of a young man, and going to a Monastery requested admission into the priesthood. He was admitted and afterwards received Upasampadā, and lived with another priest in a room at the extremity of the Monastery. It is said, that the Nāgas can only retain the human form while they exercise consciousness, but if they fall so soundly asleep as to be unconscious, the serpentine form is developed. The priest who lived in the room with the Nāgo rose very early and went into the open air; upon his departure the Nāgo fell into a sound sleep, and his natural form being developed, his body filled the entire room and part of it extended beyond the window. The priest who had gone out being desirous of returning to his room, opening the door saw this immense snake and shrieked with terror. The whole Monastery was alarmed, and the Nāgo awaking assumed the human form.

Upon being questioned he stated who he was, and his reason for wishing to become a priest. The priests informed Budha of the circumstance, who convened an assembly of the priests, and told the Nāgo that his desire to become a priest could not be accomplished; but that if he religiously observed the Uposatha (Poya) days he would escape from the serpentine race and soon be born as a human being. Budha then decreed:

58. An animal, priests, who has not obtained Upasampada shall not receive it: or if he have obtained Upasampada he shall be expelled.

A young man had killed his mother, and being tortured with remorse, hoped by becoming a priest to escape from the consequences of his crime. He accordingly applied for admission, but the case of the Nāgo having taught the priests caution, he was examined by Upāli and the case was reported to Budha, who decreed:

59. Priests, a matricide who has not obtained Upasampada shall not receive it: or if he have received Upasampada he shall be expelled:

[The following laws are introduced by a slight notice of the reason of their being enacted, in a manner similar to the preceding: these introductions are omitted, as they contain nothing of interest.]

60. A parricide, priests, who has not obtained Upasampada shall not receive it: or if he have obtained Upasampada he shall be expelled.

61. Priests, he who has killed a Rahat, if he have not obtained Upasampada, he shall not receive it: if he have obtained Upasampada he shall be expelled.

62. Priests, he who has violated a priestess, if he have not obtained Upasampada he shall not receive it: if he have obtained Upasampada he shall be expelled.

63. Priests, he who promotes schism among the priests, if he have not obtained Upasampada he shall not receive it: if he have obtained Upasampada he shall be expelled.

64. Priests, he who draws blood from the person of Budha,



if he have not obtained Upasampada shall not receive it : or if he have obtained Upasampada he shall be expelled.

Some persons who were without an Upādyā received Upasampada. Upon this being reported to Budha, he decreed :

65. Priests, Upasampada shall not be given to one who has not an Upādyā : he who gives Upasampada to such is guilty of Dukkata.

Some gave Upasampada to persons who took the whole Sangho as Upādyā : upon which Budha decreed.

66. Priests, Upasampada shall not be given to any one who has the Sangho as an Upādyā : he who gives the Upasampada is guilty of Dukkata.

Some gave Upasampada to persons who took a number of priests, less than a Sangho, as Upādyā. This being reported to Budha, he decreed :

67. Priests, Upasampada shall not be given to any one having a number of priests less than a Sangho as Upādyā ; he who gives the Upasampada is guilty of Dukkata.

Some persons received Upasampada having improper persons as Upādyā. This being reported to Budha, he decreed :

68. Priests, Upasampada shall not be given to any persons having for Upādyā a eunuch ; one furtively living with the priests (an imposter) ; one who has united himself to another fraternity ; one who is an animal ; a matricide ; a parricide ; a murderer of a Rahat ; a violater of a priestess ; a schismatic ; one who has drawn blood from the person of Budha ; or one who is an hermaphrodite. He who gives the Upasampada is guilty of Dukkata.

Some persons were admitted to Upasampada who had not been furnished with the bowl, robes, and other articles which a priest should possess, in consequence of which Budha decreed :

69. Priests, Upasampada shall not be given to a person who is without a bowl : he who gives the Upasampada is guilty of Dukkata.

70. Priests, Upasampada shall not be given to a person



who is not provided with the robes : he who gives the Upasampada is guilty of Dukkata.

71. Priests, Upasampada shall not be given to a person who is not provided both with a bowl and the robes : he who gives the Upasampada is guilty of Dukkata.

72. Priests, Upasampada shall not be given to a person who has a borrowed bowl : he who gives the Upasampada is guilty of Dukkata.

73. Priests, Upasampada shall not be given to a person who has borrowed robes : he who gives the Upasampada is guilty of Dukkata.

74. Priests, Upasampada shall not be given to a person whose bowl and robes are borrowed, he who gives the Upasampada is guilty of Dukkata.

The priests admitted to Upasampada persons who were maimed, deformed, diseased, or of known bad character : these circumstances having been reported to Budha, he decreed :

75. Priests, no person shall be admitted to Upasampada, whose feet or hands, or feet and hands, have been amputated ; whose nose or ears, or nose and ears have been cut off ; whose finger or thumb has been amputated ; whose tendons have been cut (so as to produce lameness) ; whose fingers are joined together (so that they cannot be separated from each other) ; who is hump-backed ; who is a dwarf, or who has a swelling in the neck ; who has been branded, flogged, or outlawed ; who has a swollen leg ; an evil disease ; an offensive personal odour ; who is blind with one eye ; deformed ; lame ; who is a paralytic ; maimed ; decrepid ; blind with both eyes ; dumb ; deaf ; blind and dumb ; blind and deaf ; deaf and dumb ; or blind, deaf and dumb : he who gives the Upasampada is guilty of Dukkata.

The six class priests received as resident pupils priests who were of irregular conduct ("shameless" priests) Budha ordained :

76. Priests, Nissayo (the privilege of residence as a pupil) shall not be given to shameless persons : he who gives it is guilty of Dukkata.

Some priests went to reside as pupils with priests of irregular life and these soon became shameless and wicked priests : Budha decreed :

77. Priests, no one shall reside as a pupil with a shameless priest : he who does so is guilty of Dukkata.

The priests then enquired, how they could ascertain that the priests, whether preceptors or pupils, were irregular in their conduct. Budha decreed :

78. Priests, I permit a residence of four or five days until the character of the priest is ascertained.

A junior priest travelling through Kosul thought, Bagawa has decreed that junior priests shall live with their preceptors. I am a junior priest, and am alone on my journey, what ought I to do? The case was reported to Budha, who decreed :

79. Priests, I permit that when a priest on a journey cannot be with a preceptor, he may reside apart from him.

Two priests were travelling through Kosul, and one was detained on the road by sickness. He, being a junior, ought to reside under the inspection of a preceptor, and he was doubtful what he ought to do : Budha decreed :

80. Priests, I permit a sick priest, who cannot be under the inspection of a preceptor, to remain alone (without inspection.)

A junior priest who attended on the above mentioned sick priest, also reflected that he himself was a priest, who, according to the precepts of Budha, ought to live under the inspection of a preceptor. He enquired what he ought to do : Budha decreed :

81. Priests, I permit that a priest, ministering to a sick priest, may remain without being under inspection, if he cannot be with a preceptor.

A priest residing in a wilderness found it conducive to his spiritual welfare to remain there : but he was one who ought to live under the direction of a preceptor. He remembered the precept, and was doubtful respecting the course he ought to adopt. The case being reported to Budha, he decreed :

82. Priests, if a residence in a wilderness appears to be for the welfare of a priest, and if he have no preceptor there with whom he may live, he may continue without being under inspection, saying within himself, Whenever a suitable person arrives I will dwell with him.

Maha Kàssapa was Upadya to a person who sought to obtain Upasampada, and he sent a messenger to Ananda requesting him to come and recite the formulary. Ananda thought, I cannot presume to pronounce the name (his proper name when he was a layman) of the Tero : I reverence the Tero. The case was submitted to Budha, who decreed:

83. Priests, I permit the Gotra (of the Upadya) to be used in reciting the formulary.

[That is, instead of saying N desires to receive Upasampada under Pipili as his Upadya, he may use the name given when he became priest, and say, N desires to receive Upasampada under Maha Kàssapa as Upadya. The object was to avoid pronouncing the proper name of the Upadya, which would be regarded as claiming an equality with him.]

There were two candidates for Upasampada having Maha Kàssapa as their Upadya : a contest arose respecting the one to be first ordained, as he would be the senior, the privileges of seniority being considerable. Budha decreed:

84. Priests, I permit two persons to be named in the same formulary.

That is, both names to be joined : as M and N desire to receive Upasampada, &c., by which means they would stand on an equality.

There were several candidates for Upasampada under different Upadyas: they contended who should be ordained first, and the Upadyas thought they might all be included in the same formulary. The case was reported to Budha, who decreed:

85. Priests, I permit two or three to be included in one formulary, if they have the same Upadya, but not if the Upadyas be different.

When Kumara Kassapa received Upasampada, his age was computed from his conception in the womb of his mother, so that he had not lived twenty years from the time of his having been brought forth from the womb. As Budha had decreed that no person should receive Upasampada who was not twenty years of age, he became doubtful respecting the validity of his ordination. The case was submitted to Budha, who said:

Priests, whenever the first thought or first perception is produced in the womb of the mother, then there is Jati (birth, or commencement of life.)

86. Priests, I permit Upasampada to be given twenty years after conception in the womb.

Some priests were seen afflicted with ulcers, and other diseases. The case was reported to Budha, who decreed :

87. I direct, priests, that when Upasampada is to be given, enquiry shall be made respecting the 13 disqualifications for ordination: and the enquiry shall be in this manner: Have you any of these diseases, leprosy, ulcers, dry itch, consumption, epilepsy? Are you a human being? Are you a male? A free-man? Out of debt? Are you not in the king's service (a soldier, &c.)? Have you the permission of your parents? Are you full twenty years of age? Have you the bowl and robes complete? What is your name? What is the name of your Upadya?

The candidates for Upasampada were questioned at the time of ordination respecting the disqualifications before recited, but they were timid and abashed, and unable to give suitable answers. Budha decreed:

88. Priests, I direct that the candidates shall first be instructed, and afterwards questioned respecting the disqualifications.

The candidates were instructed on these points in the midst of the Sangho, but from timidity and bashfulness they could not give suitable answers. Budha decreed :

89. Priests, I direct that the instruction shall be given apart, but that they be questioned respecting the disquali-



fications in the midst of the Sangho: and in this form they shall be instructed. First, the candidate is to obtain an Upadya: after an Upadya has been obtained he must be informed respecting the bowl and robes: This is thy bowl; this is thy Sanghati, this thy Uttarasangho: this thy Antarawasako (names of the three robes). Go, and stand in that place.

Unlearned and unskilful priests gave the preparatory instructions, in consequence of which the candidates were timid and bashful, and could not answer correctly. Budha decreed:

90. Priests, an unlearned and unskilful person shall not give the preparatory instructions: if he do so, he is guilty of Dukkata. I direct, priests, that a person learned and skilful shall give the instructions.

Persons who had not been appointed by the Sangho gave the preparatory instructions. Budha decreed:

91. Priests, a person who has not been appointed (by the Sangho) shall not give the instructions: if he instruct he is guilty of Dukkata. I direct, priests, that instruction shall be given by a person appointed for that purpose. And thus, priests, shall he be appointed: the appointment may be by a self-nomination, or by the nomination of another person. How is the appointment to be by a self-nomination? A learned and skilful priest shall thus address the Sangho, Hear me, Lord Sangho! M seeks Upasampada under N as his superior. If it be a convenient time for the Sangho, I will instruct M. Thus he nominates himself. How should one person nominate another? A learned and skilful priest shall thus address the Sangho: Hear me, Lord Sangho! M seeks Upasampada under N as his superior. If it be a convenient time for the Sangho, A will instruct M. Thus one person nominates another. Then the priest thus nominated is to go to the candidate and say, M, attend. This is a season for you to speak the truth and state things as they are. When you are questioned in the Sangho, if you know the thing to be so, say It is. If

you know it is not so, say It is not. Do not be timid or bashful. They will thus question you, Have you any of these diseases: leprosy, ulcers, dry itch, consumption, epilepsy? Are you a human being? Are you a male? Are you a free man? Are you out of debt? Are you in the king's service? Have you the permission of your parents? Are you fully twenty years of age? Have you the bowl and robes complete? What is your name? What is the name of your Upadya? Then separating, the person who has given the instruction shall come first, and addressing the Sangho, say, Hear me, Lord Sangho! this M seeks Upasampada under N as his superior: he has been instructed by me: if it be a convenient time for the Sangho, M will approach. He will then say, Come! and the candidate having removed his robe from one shoulder, and worshipped the feet of the priests, shall kneel down, and with uplifted hands he shall request Upasampada, saying, Lord Sangho, I request Upasampada. Compassionate me, Lord Sangho, and raise me up. A second time, Lord Sangho, I request Upasampada. Compassionate me, Lord Sangho, and raise me up. A third time, Lord Sangho, I request Upasampada. Compassionate me, Lord Sangho, and raise me up. A learned and skilful priest shall then announce it to the Sangho, saying, Hear me, Lord Sangho! this M requests Upasampada, having N as his Upadya: if it be a convenient time for the Sangho, I will question M respecting the disqualifications. M, attend! this is a season for you to speak the truth, and state things as they are. I question you respecting that which you know: if it be so, say It is. If it be not so, say It is not. Have you any of these diseases: leprosy, ulcers, dry itch, consumption, epilepsy? Are you a human being? Are you a male? Are you a free man? Are you out of debt? Are you in the king's service? Have you the permission of your parents? Are you fully twenty years of age? Have you the bowl and robes complete? What is your name? What is the name of your Upadya? A learned and skilful priest will

then address the Sangho, saying, Hear me, Lord Sangho! M seeks Upasampada, having N for his Upadya: he is free from the disqualifications, and has the bowl and robes complete. M seeks Upasampada from the Sangho, having N for his Upadya. If it be a convenient time the Sangho will grant Upasampada to M, having N for his Upadya: this is announced. Hear me, Lord Sangho! this M seeks Upasampada, having N for his Upadya: he is free from the disqualifications, and has the bowl and robes complete. This M requests the Sangho to grant him Upasampada, having N for Upadya. The Sangho grants Upasampada to M, having N for his Upadya. Any venerable one who consents to the giving Upasampada to M, having N for his Upadya, will remain silent: he who dissents will speak. I state the same a second time: Hear me, Lord Sangho! &c. I state the same a third time, Hear me, Lord Sangho! &c. M receives Upasampada from the Sangho, having N. for his Upadya. The Sangho assents, and therefore is silent; and thus I receive it. Instruction shall then be given respecting the measuring the shadow (of the sun); the several seasons, the divisions of the day, and concerning the uses of the whole of these. Also information must be given respecting the four principles on which the priesthood is founded: viz. 1: The priesthood is for the purpose of living upon food collected as alms. This is that to which you are to attend as long as you live. 2: The priesthood is for the purpose of wearing garments made of cast away cloth. This is that to which you are to attend so long as you live. 3: The priesthood is for the purpose of residing at the foot of a tree. To this you are to attend so long as you live. 4: The priesthood is for the purpose of using as medicine the urine of horned cattle. To this you are to attend so long as you live. [To each of these the extras (අතිරෙකලාଭනා) are added, for which see p. 24.]

The new priests, after receiving Upasampada, were dismissed

separately, without being instructed in the four obligations incumbent on them. One of them was met by the woman who had been his wife, and yielded to her solicitations. The case was reported to Budha, who decreed :

92. Priests, I direct that when Upasampada has been given, the four acts improper to be done by a priest shall be explained to him. 1: The ordained priest shall not have sexual intercourse even with an animal: he who has sexual intercourse ceases to be a priest, a son of Sakya. As when a man is decapitated the body is no longer capable of life, so the priest having this intercourse is no longer a priest, a son of Sakya. This act is unlawful so long as you live. 2: The ordained priest shall not take, with a dishonest intention, any thing which is not given to him, not even a blade of grass. If any priest with a dishonest intention shall take a pāda, or the value of a pāda, or more than a pāda, which is not given to him, he ceases to be a priest, a son of Sakya. As a seared leaf separated from its stalk is no longer capable of vegetating, even so a priest who, with a dishonest intention takes a pada, or the value of a pada, or more than a pada, which is not given to him, ceases to be a priest, a son of Sakya. This act is unlawful so long as you live. 3: The ordained priest shall not willingly take away the life of any being, not even of an insect. Any priest who shall wilfully destroy human life, even by causing abortion, ceases to be a priest, a son of Sakya. As a large rock split into two cannot again be united, even so a priest who wilfully destroys the life of a human being, ceases to be a priest, a son of Sakya. This act is unlawful so long as you live. 4: An ordained priest shall not boast of high spiritual attainments, even if it be by saying, I delight in solitude. Any priest who with an evil design and boasting, shall untruly and falsely profess to have high spiritual attainments, whether abstract meditation (සමාධි jhanan), freedom from the passions (විමොක්ඛි wimokkhan), unbroken tranquillity (සමාධි samadhin), attainment either of the paths to



Nirwana or to the results of those paths, ceases to be a priest, a son of Sakya. Even as the palm tree when its top is cut off cannot flourish again, so the priest who with an evil design and boasting, shall untruly and falsely profess to have high spiritual attainments, ceases to be a priest, a son of Sakya. This act is unlawful so long as you live.

A priest who had been guilty of a fault and placed under discipline, would not acknowledge himself guilty, but left the priesthood. Afterwards he repented and sought to be re-admitted. The case was reported to Budha, who decreed:

93. If any priest, guilty of a fault, has been placed under discipline, does not acknowledge his fault but leaves the priesthood: if he afterwards seeks re-admission he must be thus addressed: Do you acknowledge your fault? If he say, I do, he may be made a priest (Samanero), but if he do not acknowledge his fault, he shall not be made priest. After he has been made a priest, he must be asked again if he will acknowledge his fault and submit to discipline. If he promise this, he may receive Upasampada. After receiving Upasampada he is to submit to the discipline required for his former offence. If he do this, it is well: if not he shall again be placed under the discipline of non-intercourse.

*End of the Maha Khandako, or Chapter respecting Ordination.*

*( To be continued. )*



## CEYLON ORNITHOLOGY,

By E. F. KELAART, ESQ., M.D., *Staff Surgeon.*

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IN order to place before the Ceylon student of Natural History a systematic account of the Genera of Birds, I have extracted for their use descriptions of the Genera of Ceylon Birds from the celebrated work of GRAY and MITCHELL, which from its costly character is beyond the reach of many.

My descriptions of Ceylon Birds formed originally part of a work contemplated by Mr. Layard and myself: the former undertaking to write an account of the habits of the birds. But owing to Mr. Layard's unexpected departure from Ceylon in search of health, we are not able to work together. Therefore, I can only promise to bring before the public, descriptions of birds which I have either seen or examined. But with a view of making the paper more complete, I shall add from authentic sources descriptions of other birds, of which I have not at present any specimens to describe from.

It will also be my endeavour to describe the habits of some of the birds which have come within the limited field of my own observation, trusting that at no distant time some Field Naturalist will finish the work now begun.

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*Gray's Genera of Birds adapted to Ceylon Ornithology.*

## ORDER. I. ACCIPETRES.

This order embraces the Birds of Prey; they have the *bill* of various length and form, more or less compressed, with the *culmen* suddenly hooked at the tip, and acute: the base more or less covered with a *cere*, in which are pierced the variously formed nostrils; the *wings* lengthened and pointed; the *feet*

strong, with *tarsi* moderate, generally rounded and covered with scales of different shapes; the *toes* three before and one behind, all armed with strong *claws*, and their soles invariably rough.

The first Sub-Order

### ACCIPETRES DIURNI, or *Diurnal Birds of Prey*,

are distinguished from those that pursue their food in the twilight or at night, by the lateral position of their *eyes*: the base of the upper mandible covered for nearly half its length with a prominent *cere*, in which the nostrils are placed: the *tarsi* moderate, scaled, and rarely covered with plumes.

FAM: FALCONIDÆ.

SUB-FAM: AQUILINÆ, or EAGLES.

GENUS. AQUILA. *Mæhr*.

*Bill* strong at the base, and with the apical portion of the *culmen* much curved to the tip, which is greatly hooked and acute: the sides much compressed, and the lateral margins festooned; the *nostrils* placed at the *cere*, large, and rather oblique. *Wings* lengthened and acute, with the fourth and fifth quills equal and longest. *Tail* long and wedge-shaped, or rounded at the end. *Tarsi* rather longer than the middle toe, robust, and entirely clothed to the base of the toes with feathers. *Toes* moderate, strong, lateral ones unequal, and all armed with strong, curved, acute claws: the inner the strongest.

GENUS. SPIZAETUS. *Vieill*.

*Bill* moderate, the *culmen* straight at the base, and much arched to the tip, which is acute and compressed, and the lateral margins festooned; the *nostrils* large and rather rounded. *Wings* moderate, reaching to half the length of the tail, with the fourth and fifth quills equal and longest. *Tail* long and slightly rounded at the end. *Tarsi* slender, much longer than the middle toe, and plumed to the base of the toes. *Toes* long, strong, the inner one much longer than the outer, which is

united to the middle one by a membrane: all covered above with small scales except at the apex, where there are a few transverse ones, and each toe armed with a long, strong, curved and acute claw.

GENUS. CIRCAËTUS. Vieill.

*Bill* moderate, *culmen* at the base straight, and much curved to the tip, which is hooked and acute, the lateral margins festooned; the *nostrils* large, oblique, and suboval. *Wings* lengthened and acute, with the third and fourth quills equal and longest. *Tail* long and even. *Tarsi* much longer than the middle toe, feathered below the knee, and entirely reticulated. *Toes* short, strong, and covered with small scales, except at the tips; the outer united to the middle by a membrane; the *claws* long, curved, and acute.

GENUS. HALIAËTUS. Sav.

*Bill* large, *culmen* straight at the base, and curved to the tip, which is hooked and acute, the sides compressed, the lateral margins slightly festooned, and the lores naked; the *nostrils* moderate, linear, and oblique. *Wings* lengthened and acute, with the third, fourth, and fifth quills nearly equal and longest. *Tail* moderate and rounded, *Tarsi* short, strong, covered in front with transverse narrow scales, and with small irregular ones posteriorly, and on the sides. *Toes* long, mostly covered above with transverse scales; the claws long, curved, and acute.

GENUS. PONTOAËTUS. Kaup.

The characters of *Haliaëtus*, except that the *tarsi* are covered in front with transverse scales, posteriorly with large irregularly placed scales, and on the inner side with small ones. *Toes* almost entirely covered above with transverse scales.



GENUS. HALIASTUR. *Selby.*

Most of the characters are similar to those of *Haliaëtus*; but the *tarsi* are covered in front with large obliquely placed scales, posteriorly with large irregular scales, and the sides with small ones.

## SUB-FAM: FALCONINÆ, TRUE FALCONS.

GENUS. FALCO. *Linn.*

*Bill* short, strong, with the *culmen* much arched from the base to the tip, which is acute: the sides compressed, the lateral margins strongly toothed near the tip; the *nostrils* placed in a short cere, naked and rounded, with a central tubercle. *Wings* lengthened and acute, with the second and third quills the longest, and the first and second notched near the tip. *Tail* long and rounded. *Tarsi* short and strong, covered with small irregular scales, and the tibial feathers covering the knee. *Toes* lengthened and strong, the lateral ones unequal; the hind toe long, armed as well as the inner with a strong, hooked, acute claw.

GENUS. HYPOTRIORCHIS. *Boie.*

The characters in common with *Falco*; but the *tarsi* more or less lengthened, somewhat slender, and covered in front with large hexagonal scales. *Toes* very long and slender.

GENUS. TINNUNCULUS. *Vieill.*

The forms agree with those of *Falco*. But the *tarsi* are more or less lengthened, strong, and covered in front with large transverse hexagonal scales. *Toes* moderate and strong.

## SUB-FAM: MILVINÆ, or KITES.

GENUS. BAZA. *Hodgson.*

*Bill* moderate, elevated at the base, which is broad, the sides compressed, the *culmen* much arched, and the lateral

margins furnished with two small teeth near the tip, the lower mandible also furnished with small teeth near the tip; *lores* clothed with small feathers; the *nostrils* placed in the *cere*, in the form of an oblique slit. *Wings* lengthened, nearly reaching to the end of the tail, with the third and fourth quills the longest. *Tail* long and broad. *Tarsi* thick and very short, longer than the middle toe; basal half plumed, and the other part covered with small scales. *Toes* thick, free at their base, the inner longer than the outer; the claws small and acute.

GENUS. MILVUS. *Cuv.*

*Bill* laterally compressed, the *culmen* straight at the base, and then much curved to the tip, which is acute, the lateral margins somewhat straight; the *nostrils* oval, and placed rather obliquely in the *cere*. *Wings* very long, with the third and fourth quills the longest. *Tail* very long, broad, rounded, or more or less forked at the end. *Tarsi* very short, partly plumed from the base, and the rest covered with scales. *Toes* rather short, with the outer united at its base to the middle one, the *claws* long and curved.

GENUS. ELANUS. *Sav.*

*Bill* short, very broad at the base, and compressed towards the tip, which is hooked and acute; the *nostrils* large and suboval. *Wings* very long, pointed, and reaching beyond the tail, with the second quill the longest. *Tail* long, and slightly emarginated. *Tarsi* short, nearly the length of the middle toe, with the basal part plumed, and the other covered with reticulated scales. *Toes* moderate, broad, and free at the base, with the outer much shorter than the inner toe; the *claws* strong and curved.

SUB FAM: ACCIPITRINÆ, or SPARROW HAWKS.

GENUS. ASTUR. *Lacep.*

*Bill* short, broad at the base, and with the sides gradually

compressed to the tip; the *culmen* elevated, and much arched to the tip, which is acute, and the lateral margins festooned in the middle; the *nostrils* large and suboval, and placed in the basal cere. *Wings* long, reaching to the middle of the tail, with the third, fourth, and fifth quills nearly equal, and longest. *Tail* long and broad. *Tarsi* rather longer than the middle toe; the anterior and posterior sides covered with broad transverse scales. *Toes* more or less lengthened, strong, and padded beneath each joint; the lateral toes unequal; the inner and hinder ones equally long and strong, and armed with long, strong, and curved claws.

GENUS. ACCIPITER. *Kriss.*

*Bill* very short with the *culmen* much arched to the tip, which is acute; the sides much compressed, and the lateral margins festooned; the *nostrils* placed anteriorly in the cere, large and suboval, partly concealed by the projecting hairs of the lores. *Wings* moderate, with the fourth and fifth quills nearly equal, and longest. *Tail* long, ample, and nearly square at the end. *Tarsi* longer than the middle toe, covered in front with nearly obsolete scales. *Toes* more or less lengthened, and padded beneath the joints; the lateral ones unequal, and the inner and hind toes equal in length, and both with a strong curved claw.

SUB-FAM: CIRCINÆ, or HARRIERS.

GENUS. CIRCUS. *Lacep.*

*Bill* moderate, elevated at the base of the culmen and arched to the tip, which is hooked; the sides compressed, and the lateral margins festooned; the *nostrils* large, oval, and partly concealed by the curved hairs of the bases. *Wings* long, with the third and fourth quills nearly equal and longest. *Tail* long and rounded on the sides. *Tarsi* long, slender, and compressed, the outer side covered with transverse scales, and the inner with small scales. *Toes* moderate, with the

outer one longer than the inner; the *claws* long, slender and acute.

## SUB-ORDER. ACCIPITRES NOCTURNI.

### *Nocturnal Birds of Prey.*

FAM: STRIGIDÆ, or OWLS.

SUB-FAM: SURNINÆ, or HAWK OWLS.

GENUS. *ATHENE. Boie.*

*Bill* short, partly concealed by the projecting plumes, the sides compressed, the *culmen* much arched to the tip, which is hooked and acute; the *nostrils* basal, lateral and hidden by the frontal plumes. *Wings* rather long and rounded, with the third and fourth quills the longest. *Tail* moderate and nearly even. *Tarsi* longer than the middle toe, and covered with plumes. *Toes* short, and covered with scattered hairs; the *claws* long, arched and acute.

SUB-FAM: BUBONINÆ, or HORNED OWLS.

GENUS. *EPHIALTES, Keys, and Bl*

*Bill* moderate, the base concealed and broad, the sides compressed, with the *culmen* flattened at the base, and curved to the tip, which is hooked; the lateral margins curved; the *nostrils* rounded, placed in the forepart of the cere, and covered by the basal plumes. *Wings* long, with the second, third and fourth quills nearly equal and longest. *Tail* short, and more or less even. *Tarsi* rather long, and covered with short plumes to the base of the toes. *Toes* long, covered with small scales at the base, and with three or four transverse scales at the tip; the *claws* moderate, strong and curved.

GENUS. *KETUPA. Less.*

*Bill* large, broad at the base, compressed towards the tip, which is hooked, the lateral margins slightly arched; the



*nostrils* lateral, placed in the anterior part of the cere, and hidden by the projecting plumes. *Wings* moderate, with the third and fourth quills equal and longest. *Tail* short, and nearly even at the end. *Tarsi* rather long, covered at the base with down, and towards the tips with minute scales. *Toes* moderate, strong, covered with small scales, except at the tips which are furnished with three or four transverse scales, the lateral toes unequal, the *claws* long, strong and curved.

SUB-FAM: SYRNIINÆ, or OWLETS.

GENUS. SYRNIUM. Sav.

*Bill* moderate, strong, with the base broad, and concealed by the frontal plumes; the sides compressed, and the culmen arched to the tip, which is hooked; the *nostrils* basal, lateral, and medial, with the opening large and oval. *Wings* long and rounded, with the fourth and fifth quills equal and longest. *Tail* long, broad, and more or less rounded. *Tarsi* short, strong, thick, and densely clothed with plumes. *Toes* moderate, densely plumed to the end of each toe, the *claws* long, acute, and slightly curved.

SUB FAM: STRIGINÆ, or OWLS.

GENUS. STRIX. Linn.

*Bill* long, mostly concealed at the base by the projecting plumes; the sides much compressed, and the culmen arched to the tip, which is acute and hooked; the *nostrils* large, partly covered by a membrane, with the opening oval, and slightly hidden by the hairs. *Wings* very long, with the second quill the longest. *Tail* short and generally even. *Tarsi* much longer than the middle toe, slender and covered with short soft plumes. *Toes* long, and covered with scattered hairs; the lateral ones unequal, the outer much shorter than the inner; the hind toe short and thick; the *claws* long, curved and acute.

## DESCRIPTION OF BIRDS OF CEYLON,

By E. F. KELAART, M. D.

## ORDER. ACCIPITRES.

## SUB-ORDER. ACCIPITRES DIURNI.

*Diurnal Birds of Prey.*

## FAM: FALCONIDÆ.

## a. AQUILINÆ.

AQUILA BONELLII, *Temm.* The Genoese Eagle.*Syn.* *Aquila intermedia, Bonelli.**Aquila fasciata, Vicill.**Nisaëtus grandis, Hodgson.*

Uniform dark brown above, white beneath with dark brown longitudinal streaks on the chin, throat and breast; upper part of inner web of primaries streaked and spotted with white. Tail slaty blue with darker transversal bands, tip palish; under tail coverts white, irregularly barred with rufous brown. Thighs barred with rufous brown. Bill horn colour, cere yellow, tarsi yellow, claws black.

The only specimen of this Eagle examined is one found by Dr. Templeton, it measured 2 feet 3 inches; closed winged, 1 foot 6 inches. *Habitat* not known.

AQUILA PENNATA, *Gmel.* The Pennated Eagle.*Syn.* *Aquila minuta, Brehm.**Spizaëtus milvoides, Jerdon.*

Head and neck light rufous brown with dark medial streaks. Back, wings, and upper surface of tail dark brown. Under parts white, breast and lower part of neck streaked with rufous brown; shafts of feathers of a darker shade. Under wing coverts white, shafts brown, a few brown spots on the

outer ones. Upper tail coverts rufous with whitish tips and margins. Extreme tip of tail pale. Thighs and legs white, indistinctly spotted light rufous. Bill slaty blue; toes yellow; claws black. Length 1 foot 6 inches. Wing 1 foot 3 inches.

Shot at Point Pedro by Mr. Edgar Layard. This is one of our rarest indigenous birds of prey.

*AQUILA MALAYENSIS*, *Reinv.* The Black Eagle.

*Syn.* *Aquila pernigra*, *Hodgson*.

*Neopus perniger*, *Hodgson*.

*Nisaëtus?* *ovivorous*, *Jerdon*.

*Ictinaëtus Malaiensis*, *Blyth*.

Uniform black above, rather dusky below (a few white spots scattered on the body and tail of the specimen examined). Tail barred with broad brownish bands. Bill blue with black tip, cere yellow. Toes yellow, claws black. Irides brown. Occipital crest black. About 2 feet 6 inches long.

This is also a rare bird of prey in the Island. One or two only are occasionally seen on the Kandyan Hills. The specimen we have examined was procured by Mr. Charles Kelaart, at Kaduganava.

*SPIZAËTUS NIPALENSIS*, *Hodgson*, *Gray*. The Beautiful Crested Eagle.

*Syn.* *Nisaëtus Nipalensis*, crested var. young. *Hodg*.

*Nis. pulcher*, adult, *Hodg*.

*Falco orientalis?*

*Falco lanceolatus?* } *Temm. et Schlegel*.

Head and neck brown; the cheeks and chin have a triple longitudinal marking of brown. Thighs, tarsi and inferior tails coverts transversely barred with dark fawn. A graceful pendant crest, composed of plumes of a brown colour. Bill blue at the base, black at the tip; the cere greenish yellow,

the iris golden; the toes yellow, and the nails black.  
*Hodgson.\**

The above description is evidently of a young bird. An adult specimen which I sent to Mr. Blyth has been identified by that Naturalist with *Sp. Nipalensis*. This beautiful Eagle is rarely seen, and that, too, only on the Alpine parts of the Island. The only specimen I was so fortunate as to secure is now in the Museum of the Asiatic Society of Bengal. It is 30 inches long.

*SPIZAËTUS LYMNAËTUS*, var. *Horsf.* The Common Crested Eagle,

*Syn.* *Falco cirrhatius*, *Gmel.*

*Falco cristatellus*, *Temm.*

*Falco caligatus*, var. *Raffles.*

*Falco niveus*, var. *Temm.*

*Nizaëtus Nepalensis*, crestless var. *Hodgson,*

This Eagle is seen of several shades of colour and markings. Two most distinct varieties are seen in Ceylon, one much darker than the other and with a more developed crest. The darker variety may be thus described.

Hair brown above, white beneath. Head and neck of a rufous brown with narrow blackish mesial streaks. Chin, throat, and under part of body marked with broad dark rufous brown longitudinal streaks. Tail barred broadly. Under surface of alar and tail quills white and barred with dark brown. Under tail coverts rufous. Under wing coverts white and spotted dark brown. Thighs rufous and barred with pale white. Tarsi white and freckled with brown. Occipital crest black with white tips, 4 inches long. Length 1 foot 10 inches. Wing 13 inches.

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\* The whole of the under parts from the head downwards were beautifully barred rufous in the Ceylon specimen.



The above characters correspond closely with Mr. Blyth's description of a specimen of this Eagle received from Midnapore. (J. A. S. B. vol. 1845, page 175).

The paler and more numerous variety, is not unlike *Falco niveus*, *Temm.*

White predominating. Head and neck pale white or rufous with narrow mesial streaks of a more or less dark rufous colour. Base of dorsal feathers white and the tips of some of the longer ones also white. The cheeks, chin and throat immaculate. Breast and abdomen with a few rufous spots and mesial streaks. Thighs indistinctly spotted with light rufous. Tarsi white, immaculate. Occipital crest composed of white and black plumes, some of the latter also white tipped. Rather smaller than the dark variety.

There is also a crestless variety of this species, in colour resembling the last described bird.

The crested variety is rather abundant at certain seasons of the year in all the Maritime provinces and lower Kandyan Hills. It is a bold and powerful bird, attacking full grown fowls in the native villages. In the Northern provinces they are frequently seen on the topmost branches of the Banyan tree, where the nests of crows furnish them with dainty food. At Kaduganava this Eagle is often seen soaring above Dawson's monument, sometimes alighting on its summit to devour its prey; it is not however a very common bird on the Kandyan Hills. I procured only a few specimens from Kandy and Trincomalie, whereas, as many as seven were shot by Mr. Layard on one tree in the Court yard at Point Pedro.

PONTOAËTUS LEUCOGASTER, *Gmel.* The White Bellied Sea Eagle.

*Syn.* *Falco leucogaster*, *Gmel.*  
*Falco Blagrus*, *Daudin.*

*Falco dimidiatus*, *Raffles*.

*Falco albicilla*, var. *Latham*.

*Ichthyaëtus cultrungis*, *Blyth*.

*Haliaëtus sphenurus*, *Gould*.

Head, neck, and abdomen white. Back and wings ashy brown, primaries nearly black; most part of the inner web of secondaries white. Anterior two-thirds of tail dark brown, the rest white. Upper tail coverts brown, slightly tipped with white; lower white throughout; shorter lower wing coverts white, with a few ashy splashes; longer ones ashy brown. Thighs white. Tarsi and two toes yellow, claws black. Bill bluish. Length 3 feet 5 inches. Wing 1 foot 9 inches.

This is the largest of our Ceylon Birds of prey, common on the Northern Coasts, rarely seen on the South-Western parts of the Island; very abundant at the Salt lakes of Hambantotte, and the Bay of Calpentyn. Mr Layard writes, "In fact, wherever there is much shallow salt water, particularly if the receding tide leaves bare a large extent of mud, there will this Sea Eagle be found fishing in company with *Haliastur Indicus* and *Milvus Govinda*. Unlike them, however, the Fish Eagle prefers living prey to garbage, and is particularly destructive among the sea snakes, which are very abundant in the sea between Point Pedro and Point Calamanar on the opposite coast. We have frequently seen this bird capturing its prey. It keeps soaring very high, and then descends very rapidly, with its wings half closed and upraised, its legs pendant, and its body swaying to and fro, like the weight attached to a parachute. When close to the object of its pursuit, the legs are suddenly darted out, the prey seized near the head, the fall arrested, and without touching the mud or water, the noble bird soars upwards with its victim writhing in its claws. If it fails to kill the eel or snake when on high, the booty is dropped, and we have often secured a good specimen of marine snake from this mishap of the bird."

“The Sea Eagle constructs a large nest (to which it adds yearly) among the branches of some large tree, generally an aged Bo-tree (*Ficus religiosa*) is selected, and owes its security to the superstitious fears of the ignorant natives, who, in spite of all our promised reward, have invariably refused to ascend the trees, alleging that the guardian demons of the sacred tree would hurl them headlong down if they attempted to climb the tree for such profane purpose as robbing a bird's nest. We have, therefore, as our own climbing days are over, never been able to procure the eggs of this species.” [Mr. Layard in MS.]

PONTOAËTUS ICHTHYAËTUS, *Horsf.* Brown Tank Eagle.

*Syn.* Falco Ichthyaëtus, *Horsf.*

Plumage in general brownish; quills deep brown; head grey; chin whitish; neck brownish grey; breast and belly pale ferruginous brown; lower part of the latter, the vent and thighs white; tail dusky at the tip. Length 2 feet 4 inches. *Latham*,

The only specimen secured by Mr. Layard is now with Mr. Blyth.

Found in the large tanks in the Northern parts of the Island.

CIRCAËTUS CHEELA, *Latham*. The Undulated Bacha.

*Syn.* Falco cheela, *Latham* and *Gmelin*.

*Hæmatornis undulatus*, *Vig.*

*Circaëtus Nepalensis*, *Hodg.*

*Falco albidus*, *Temm.*

*Falco Bacha*, *Daudin*. (African Race.)

*Falco Bido*, *Horsf.* (Malabar Race).

Head black, occipital crest tipped white or fulvous. Back fuscus brown. Small wing coverts spotted white. Upper

tail coverts tipped white. Neck and breast dark rufous brown with palish tips. Abdomen, lower wing and tail coverts rufescent and spotted with small round white spots, (a blackish ring round some of the white spots). Wings and tail barred broadly with black and cream colour. Tip of tail feathers whitish. Thighs rufescent and spotted with white ocelli. Length 1 foot, 10 inches. Wing 1 foot, 2 inches.

Very common in the Northern parts of the Island. Rarely seen on the Kandyan Hills. There is a lighter coloured allied species found at Trincomalie which Mr. Blyth has named

#### HÆMATORNIS SPILOGASTER, *Blyth*.

In this species the tips of all the feathers of the head and neck are more broadly tipped with fulvescent white. The breast and abdomen of a lighter rufous colour, and more thickly spotted with white. Mr. Blyth in describing this new species, which I considered only a local variety of *C. Cheela*, observes, that "it is rather smaller than *H. Cheela*, (Latham, *vel undulatus*, Vigors) and remarkable for having the under parts as in the adult of that species, while the upper parts, throat and tail retain in the adult the same colouring as that of the young of *H. Cheela*, a phase of plumage which we have never seen among the multitude of Bengal specimens of *H. Cheela* examined, but which is exhibited in the two now received from different parts of Ceylon." Irides yellow.

There is another specimen in my possession which cannot be referred to either *H. Cheela* or *H. Spilogaster*, and which I shall now describe.

#### CIRCAETUS, (?) *Sp.*; probably new.

Upper parts like *H. Spilogaster*. Breast with broad dark rufous brown drops, and rufous mesial lines on the outer abdominal feathers. Ventral, lower tail coverts and thigh feathers barred with rufous. Lower wing coverts brown, and ocellated with white. Tail and wing quills as in *H. Cheela*.



Bill yellow, with blackish tip. Feet yellow. Irides golden. Length 2 feet 1 inch. Wing 1 foot. Found at Trincomalie in company with *H. Spilogaster*.

**HALIASTUR INDUS.** *Bodd.* Shiva's Fishing Eagle.

*Syn.* *Falco Indus*, *Boddaert*.

*Falco Ponticerianus*, *Gmelin*.

*Haliaëtus girrenara*, *Veillot*.

*Haliaëtus garruda*, *Lesson*.

*Milvus rotundicaudatus*, *Hodg.* (young.)

Head, neck, and breast white with narrow brown mesial streaks. Back, tail, legs, and under tail and wing coverts bright rufous chesnut. Shafts of dorsal feathers, and upper wing coverts black. Wing rufous, with the exception of the outer quills, which are blackish. Bill pale yellow at the tip. Irides pale yellow. Tarsi and toes pale yellow. Claws black. Length 1 foot 5 inches. Wing 1 foot.

This handsome Eagle is found with the common Fishing Kite (*Milvus Govinda*) in all the Maritime provinces, and very abundant at Trincomalie and Jaffna; as many as twenty or thirty are sometimes seen together. Although fish is their favourite food, they are not unfrequently seen to eat carrion, or even carry away poultry.

*SUB-FAM: FALCONIDÆ.*

**FALCO PEREGRINUS,** *Linn.* The Peregrine Falcon.

*Syn.* *Falco barbarus*, *Linn.*

*Falco communis*, *Brisson*.

*Falco calidus*, *Latham*.

*Falco lunulatus*, *Daudin*.

Upper parts ashy. Head and neck shaded with white; a black patch under the eye. Beneath white with brown or blackish streaks. Wings ashy; inner web of quills barred

with white, or rufescent white, upper wing coverts and scapularies, white or rufescent. Under wing coverts white, and barred with brown. Tail and upper tail coverts, ashy brown with white transverse bars; tip white. Bill blueish. Tarsi and toes yellow; claws black. *Female*.

Males are darker throughout and blackish on the head. Dorsal feathers spotted and barred with black.

Length 1 foot  $4\frac{1}{2}$  inches. Wing 1 foot.

This widely distributed Falcon is found in the Northern and North-Eastern Provinces. Seldom more than a pair seen at a time. They are generally found on open plains in search of birds and small reptiles.

FALCO PEREGRINATOR, *Sundeval*. The Shaheen Falcon.

*Syn.* Falco shaheen, *Jerdon*.

Falco sultaneus, *Hodgson*.

My indefatigable friend Mr. Edgar Layard obtained a specimen of this elegant Falcon in Saffragam near the foot of Adam's Peak, but which I have not had the pleasure of inspecting.

The young male of this bird is thus described by Dr. Jerdon.

*Young male.* Plumage above generally of a dark cinereous or dusky blackish hue, darkest on the head, hind neck and cheek striped; most of the feathers are narrowly edged with rufous, those on the lower part of the back and rump more broadly so. There is some rufous on the forehead, and on the back of the head where it forms a sort of crucial mark. Tail paler than the rest of the body, faintly barred with rufous, and tipped the same. Chin and throat pale rufous yellow, unspotted; cheeks of the same tint, with narrow dark stripes. The rest of the plumage beneath bright rufous or chestnut, with longitudinal dark brown markings on the centre of the body, oblong spots on the sides, and arrow-shaped markings on the lower part of the abdomen. Under

wing coverts, rufous, barred with brown; quills barred with rufous on their inner webs. Bill bluish, darker on the tip; cere and orbital skin pale yellow; irides dark brown; legs and feet yellow. Length 15 inches. Wing 11 inches. Tail  $5\frac{1}{2}$  inches. Tarsus nearly 2 inches. Centre toe and claw  $2\frac{1}{2}$  inches. Weight 1lb.

The young female "differed from the male in having the chin, throat and cheeks white, in the rufous edgings to the feathers being very indistinct, and the plumage generally being of a darker hue."

"After the first moult, the markings of the lower surface disappear, except a few on the lower part of the abdomen and leg feathers, the plumage above becomes more of a bluish tinge, and the edgings and barrings disappear; with further moultings, the shade of the plumage above becomes still lighter, and of a slaty blue, the markings beneath vanish entirely, and the rufous tint of the breast becomes paler."

This handsome Falcon "is found throughout the whole of India, from the Himalayas to the extreme south of the Peninsula. It is well known to native Falconers." In Ceylon we presume it is a rare bird, as Mr. Layard only met with one specimen during his eight years' residence in the Island.

TINNUNCULUS ALAUDARIUS, *Brisson*. The Kestrel Falcon.

*Syn.* Falco alaudarius, *Brisson*.

Falco Tinnunculus, *Linn*.

Falco fasciatus, *Reszius*.

Falco bruneus, *Bechotim*.

Falco rufescens, *Swainson*.

Falco interstinctus, *McClelland*.

Head and neck pale ash with blackish shafts. Cheek paler, a darker streak from the mouth downwards. Back and upper wing coverts cinnamon brown with triangular black spots at

the terminal edge of feathers. Wing quills brown, inner web dentilated with white. Under parts of body pale rufous, with black streaks and spots. Under wing coverts white with brown spots. Tail ashy grey with black subterminal band and white tip. Bill bluish, tip black. Irides yellow. Tarsi and toes yellow. Claws black. Length 1 foot 2 inches. Wing  $9\frac{1}{2}$  inches. The female is a more elegant bird and differently maculated.

Upper parts rufescent with dark brown streaks on the head, and blackish bars on dorsal feathers and upper wing coverts. Breast and abdomen rufescent white with brown mesial streaks. Wings dark brown or blackish above and whitish beneath; inner web of quills barred, zigzag white or rufous; lower wing coverts white with small brown spots. Tail rufous, with blackish bars, and a broad black subterminal band; tip whitish. Rather smaller than the male.

The Kestrel, a well known bird of Europe and America, is also very common in India and Ceylon. I have found it in all the Maritime provinces, and also at Kandy and Newera Ellia. They are frequently seen in pairs on open plains in search of field rats, toads, and the young of *Monitor Dracæna*. I have found the Kestrel's nest on the rocks of Trincomalie, and also on the sea-girt batteries of that old Fort,

#### HYPOTRIORCHIS CHICQUERA, *Shaw*. The Small Red-Headed Falcon.

|             |                              |                     |
|-------------|------------------------------|---------------------|
| <i>Syn.</i> | <i>Falco ruficollis, et</i>  | } <i>Swainson</i> . |
|             | <i>Falco macrodactylus.</i>  |                     |
|             | <i>Falco cirrhatus, var.</i> | } <i>Latham</i> .   |
|             | Fasciated Falcon.            |                     |

Head and upper parts of neck dark rufous, under parts of neck white. Back ashy grey. Breast, abdomen, lower tail coverts and thighs white, with dark ashy bars. Wing dark ashy brown; inner web of quills white with ashy bars. Upper



wing coverts ashy and minutely barred brown; lower wing coverts white and barred with brown. Tail ashy above with narrow transverse streaks, paler beneath. Tip whitish and a broad subterminal band. Bill yellow, with black tip. Tarsi and toes yellow; claws black.

Length  $11\frac{1}{2}$  inches. Wing  $7\frac{1}{2}$  inches. A pair of this beautiful Falcon were seen by Mr. Layard at Point Pedro, where even it is a very rare bird.

*SUB-FAM: MILVINÆ.*

ELANUS MELANOPTERUS, *Daudin.* Black-Winged White Kite.

*Syn.* Falco clamorus, *Shaw.*

Falco melanopterus, *Daudin.*

Falco vociferus, *Latham.*

Elanus cærius, *Savigny.*

Above ashy white. Beneath white. Upper wing coverts and ridge black. Tail white, middle feathers greyish. Bill black. Tarsi and toes yellow. Claws black. Irides orange, a black superciliary streak.

Length 1 foot. Wing 10 inches.

This dove-like Falcon is very rare in the Island. I have only one specimen of it from Kandy, and Mr. Layard shot only one near Jaffna.

MILVUS GOVINDA, *Sykes.* The Cheela or Govinda Kite.

*Syn.* Milvus cheele, *Jerdon.*

Milvus melanotus. *Temm.*

Hiliaëtus lineatus, *Gray.*

Falco ater? *Gmelin.*

Falco niger? *Brisson.*

Dark brown, with a rufescent shade, edge of feathers pale. Beneath with darker mesial streaks. Tail slightly forked, indistinctly barred blackish. Bill black. Tarsi and toes yellow. Claws black.

Length 1 foot 10 inches. Wing 1 foot 4 inches.

This Kite is very common in all the Maritime provinces. I have not seen it on the hills. It feeds chiefly on fish, and the fishermen with difficulty keep these rapacious birds from stealing fish from their nets. As the fishing boats draw near the shore, hundreds of these Kites are sometimes seen to hover around and manage to get a good feed, with very little exertion on their part, in spite of all the resistance the industrious fishermen can offer.

BAZA LOPHOTES, *Temm.* The Cohy Falcon.

*Syn.* Baza syama, *Hogdson.*

*Falco lophotes*, *Temm.*

*Lophotes Indicus*, *Lesson.*

Head black with a crest composed of a few long black feathers. Chin and neck black. Breast rufous, white barred. Abdomen and vent black. The whole of the upper parts black. Wing black with a greenish shade; scapularies rufous and partly white and black. Bill greenish yellow. Tarsi and toes greenish.

Length  $12\frac{1}{4}$  inches. Wing 9 inches.

The only specimen I have seen of this small black crested Falcon was a preserved one in Mr. Layard's collection, which he shot, I believe, in the Wanny district.

*SUB-FAM: ACCIPITRINÆ.*

ASTUR TRIVIRGATUS, *Temm.* The Indian Goshawk.

*Syn.* Astur cristatus, *G. R. Gray.*

Astur Indicus, *Hodgson.*

Astur palumbarius, *Jerdon.*

Spizaetus rufistinctus, *McClell.*

I do not remember seeing a specimen of this bird in Ceylon. Mr. Layard says he saw a live one at Anarajapoorra, and I believe, Mr. Blyth received a preserved specimen of this Hawk from Ceylon.

The following is the original description of McClelland's bird. (*Spizaetus rufistinctus*), which Mr. Gray makes a synonym of *Astur trivirgatus* of Temm.

Upper part of the body dark brown, with slight undulations of a deeper tint, breast and throat longitudinally striped with brown; belly and under surface of the wings white, transversely barred with brown; tarsi feathered to the lower third, each feather marked with five transverse bars, the rest shielded; the beak short, much hooked and sharp; claws and toes strong and formidable.

ACCIPITER BADIUS, *Gmel.* Brown's Sparrow Hawk.

*Syn.* Falco badius, *Gmelin.*

Falco Brownii, *Shaw.*

Falco Dussumieri, *Temm.*

Accipiter Dukkenensis, *Sykes.*

Dark rufous brown above, with pale edges to the feathers. Beneath white with brown drops. Wings darker brown on the upper surface; primaries white beneath and barred. Tail ashy and barred with black; lower tail coverts white. Thighs white and spotted slightly. (Young). In the adult, the breast is rufous and barred with white. Bill blue, tip black; irides yellow. Legs yellow. Length 14 inches.

This hawk is known in Ceylon as the "Sparrow Hawk." It is not an uncommon bird in the Kandyan hills and in the Northern Provinces.

ACCIPITER NISUS, *Linn.*

I had once a small live hawk sent from the Kandyan country, but which flew away before I had positively deter-

mined the species ; it had a close resemblance to the European Sparrow Hawk. Mr. Layard says he has not seen this hawk in the Island. To enable others to identify this bird in Ceylon the following description from Stark's Elements of Natural History is here added :

“Bluish, cinereous above ; a white spot on the neck ; white beneath, with brown undulations ; tail ashy grey, with five bars of blackish cinereous ; cere yellowish green ; feet and iris yellow. About 12 inches long.”

*SUB-FAM: CIRCINÆ.*

*CIRCUS SWAINSONII*, *A. Smith.* Swainson's Hen-Harrier.

*Syn.* *Circus pallidus*, *Sykes.*

*Circus albescens*, *Lesson.*

*Circus Dalmaticus*, *Ruppel.*

*Falco æquipar*, *Cuv., M.S.*

*Falco cyaneus*, *var. A. Lesson.*

Pale ashy above ; white beneath. Inner web of some of the primaries dark brown. Upper tail coverts white, with transverse ashy bars. Tail ashy, indistinctly barred ; outer rectrices whitish speckled and barred with ash. Bill blackish. Tarsi and toes yellow ; claws black. Length 1 foot 1 inch. Wing 1 foot 2 inches.

Generally found on the plains of the low country, and rarely in the Kandyan provinces. It feeds on small birds, frogs and lizards.

*CIRCUS CINERASCENS*, *Gould.* The Ashy Brown Harrier.

*Syn.* *Falco cinerascens*, *Mont.*

*Circus Montagui*, *Vieil.*

Ashy brown above. Under part of the neck and breast ashy, with rufous mesial streaks to the feathers of the latter.



Abdomen, under surface of tail, lower wing and tail coverts white. Upper surface of tail rufous brown and broadly barred; tip white. Thighs white, streaked. Bill blackish; irides light yellow. Tarsi and toes yellow, claws black.

Length 1 foot 6 inches. Wing 13 inches.

Females are more or less of a rufous brown on the back; they have also a nuchal ring and broader black bars on the tail, and the whole of the abdomen of a light rufous colour. Head rufescent. In young birds the upper tail coverts are white. Probably the latter characters are also present when the bird is moulting. This species in its ashy plumage is not unlike the darker varieties of *Circus Swainsonii*.

The species is common in Kandy and Trincomalie. Reptiles and birds are its chief food.

#### CIRCUS MELANOLEUCOS, *Pennant*. The White and Black Indian Harrier.

I obtained several specimens of this bird from the open plains in Minery, none of which, however, I now have for description, and therefore give its characters from Latham's work.

"Length 16 inches; bill black; irides yellow; head, throat, hind part of neck, and back black; breast, belly, thighs, and rump white; lesser wing coverts white, the middle ones black; the greater and secondary quills silvery ash colour; prime quills black. Tail pale silvery grey; legs rufous.

The female is somewhat bigger; general colour silvery grey; on the wing coverts three round black spots, and three others on the outer webs of the second quills; primaries black; sides of the belly, thighs and vent white, transversely striated with rufous red."

Like the other species of Ceylon Harriers, it is reported to feed on birds, reptiles, and small rats and squirrels.

## ORDER. ACCIPITRES.

## SUB-ORDER. ACCIPITRES NOCTURNI.

*Nocturnal Birds of Prey.*

FAM: STRIGIDÆ.

SUB-FAM: SURNINÆ.

ATHENE CASTANOTUS, *Blyth*. Ceylon Chestnut-winged  
Hawk Owl.

*Syn.* Athene Castanopterus, *apud. Blyth*.

Head, neck and breast barred with brown and rufescent white. A white spot under the ears. Back and wings bright chestnut and faintly barred with brown. Abdomen white, maculated with brown spots and streaks. Under wing coverts white, with a few brown spots. Vent and lower tail coverts white. Tail and upper tail coverts dark brown and streaked with narrow whitish bars. Thighs whitish and freckled with brown. Bill yellow. Tarsi yellow. Length  $7\frac{1}{2}$  inches. Wing 5 inches.

This Hawk-Owl was added to the Ceylon Fauna by Dr. Templeton. It feeds on small lizards and insects. Not uncommon at Colombo. I have also seen it at Newera Ellia, Galle and Kandy.

ATHENE SCUTELLATA, *Raffles*. The Hairy-legged Owl.

*Syn.* Ninox Nepalensis, *Hodgson*.

*Strix scutellata*, *Raffles*.

*Strix hirsuta*, *Temm*.

*Strix lugubris*, *Tickell*.

*Athene Malayensis*, *Eyton*.

Upper part of head and neck ashy brown; chin white. Back, scapularies and upper tail coverts rufous brown; dorsal

feathers have palish edges and white spots. Primaries have brown above, with pale rufous bars, under surface white barred. Under wing coverts fulvescent and streaked with brown. Under surface of neck and breast rufous brown, with fulvescent white edges to the feathers. Abdomen white with large rufous brown spots. Tail dark ashy brown, with broad blackish bars; tip whitish. Upper tail coverts rufous brown and spotted white; under tail coverts white. Thighs rufous. Bill bluish black, with a yellowish culmen. Irides greenish yellow. Toes yellow, curved, with yellow bristly hairs. Claws black. Length 11 inches. Wing  $5\frac{1}{2}$  inches.

Not uncommon in the Cinnamon gardens at Colombo. Feeds on insects and lizards.

*SUB-FAM: BUBONINÆ.*

*EPHIALTES LEMPIJII*, *Horsf.* The Lempiji Owl.

*Syn.* *Strix noctula*, *Reinw.*

*Scops Javanicus*, *Lesson.*

*Scops Lempiji*, *Horsf.*

Brown spotted with fulvous and black. Breast and abdomen fulvous with blackish mesial streaks and inconspicuous bars and specks. Vent whitish. Outer web of primaries barred with light fulvous, inner web clouded dusky. Tail clouded with pale fulvous brown. Tarsi pale, freckled. Bill brown; irides reddish brown. Toes brown, claws brown.

Length  $7\frac{1}{2}$  inches. Wing  $5\frac{3}{4}$  inches

Some of the specimens are less fulvescent than others, and the blackish spots more numerous, and with a more distinct black patch on the top of the head.

This is the most common of all Ceylon Owls; less common, however, in the higher parts of the Island than in the Maritime provinces. It feeds chiefly on Coleopterous insects.

EPHIALTES SCOPS, *Linn.* The Scops Eared Owl.

*Syn.* Scops pennata, *Hodgson.*

Scops Aldrovandi, *Ray.*

Scops Europeus, *Lesson.*

Rufous brown, minutely speckled and streaked with dusky brown and rufous. Lower parts paler; abdomen, vent and lower tail coverts more white spotted; small white spots on the outer web of primaries; inner web of secondaries white barred. Tail barred and speckled with white and rufous. Bill brown. Irides yellow. Toes brown; claws dark brown.

Length  $5\frac{1}{2}$  inches. Wing 4 inches.

This elegant little owl is rare in Ceylon. I met with only one specimen (alive) at Trincomalie which Mr. Blyth has seen and identified with *Scops pennata*, *Hodg.* Mr. Layard has not been so fortunate as to meet with this species, nor has he seen the next.

EPHIALTES SUNIA, *Hodgson.* The Yellowish Red Eared Owl.

*Syn.* Ephialtes scops, apud *Blyth.*

General colour, a bright ferruginous red, with black shafts to most of the plumage. It is less speckled and barred than *Scops pennata*. An albescent line on the scapularies, with black tips. Abdomen whitish yellow. Rather smaller than the last.

I have not seen this beautiful owl lower than Dimboola (4000 feet). It is not common. Mr. Layard has not met with it in Ceylon. The specimen I sent Mr. Blyth was identified by him with *Scops sunia* of Hodgson, which he still thinks is only a variety of *Ephialtes scops*, *Linn.*



KETUPA CEYLONENSIS, *Gmel.* The Large Eared Owl.

- Syn.* *Strix Ceylonensis*, *Gmel.*  
*Strix Leschenaultii*, *Temm.*  
*Strix Hardwickii*, *Gray.*  
*Strix dumeticola*, *Tickell.*  
*Cultrunguis nigripes*, *Hodgson.*

Above light ferruginous brown, with dark brown mesial streaks and pale spots on the dorsal feathers. Under part of neck whitish. Breast and abdomen light rufescent, minutely barred; each feather with a blackish longitudinal streak. Wing quills freckled and barred white and brown. Tail brown, with narrow ferruginous bars; tip rufescent. Bill blackish. Irides bright yellow. Length 1 foot 7 inches.

This large owl is very abundant in the Island, particularly in the Maritime provinces. It feeds on fish, rats, mice, &c.

## SUB-FAM: SYRNINÆ.

SYRNIUM INDRANI, *Sykes?* The Devil Bird.

I have not seen this bird alive, though it is common enough in the forests. A specimen of this was many years ago in the Museum at Colombo. Above dark brown, barred. Abdomen whitish, barred. Toes densely covered with plumage. Irides yellow. Claws black. Length about 1 foot.

## SUB-FAM: STRIGINÆ.

STRIX JAVANICA. *De Wormb.*? The Yellow Barn Owl.

- Syn.* *Strix flammeus*, *var.*  
*Strix candida*, *Tickell.*

Upper parts ochry yellow, speckled with grey, white and brown spots. Face white, margined with a rufous circle.

Under parts yellowish white and spotted with brown. Inner web of primaries indistinctly barred. Tail speckled with dark grey, and slightly streaked. Thighs white. Bill horn colour. Irides pale yellow. Tarsi and toes yellowish brown; claws pale yellow. Length 1 foot  $2\frac{1}{2}$  inches. Wing 11 inches.

Found by Mr. Layard in the old Fort at Jaffna. The above description is taken from the only specimen he procured.

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Some account of the Rodiyas, with a specimen of their language.

By SIMON CASIE CHITTY, Esq.

It is commonly believed that the Rodiyas were originally one of the Singhalese castes, who, according to one tradition, as noticed by Knox, were expelled from society for having imposed on a certain King, by substituting human flesh for venison, which it was their duty to provide for the royal table; or who, according to another tradition, as noticed by Davy, were made outcastes because they continued to indulge in eating beef after its use was prohibited; or who, according to another tradition, as noticed by Upham, were driven into the jungle on account of their leprosy, engendered by bestial practices; but the striking dissimilarity of their physical characteristics from the Singhalese, being much more robust and vigorous, at once militates against the belief that they are of the same nation, and marks them out as a distinct and peculiar race of people. My opinion of the Rodiyas therefore is, that they are either a colony of some of the wandering hordes from India, or a fragment of the aborigines of Ceylon itself, partially blended with the Singhalese females of high caste whom the kings in former times had degraded to their rank and community, not only for high treason, but also for sacrilege, as was the case with seven members of the family of Nahalle

Mudianse of Madura Korle, who had melted certain golden images of Buddha belonging to a temple.

The Rodiyas are found only in the Interior, scattered over different parts of the country; their numbers, however, are not very considerable; for according to the information within my reach, it would be too much to estimate them beyond a thousand, and it is remarkable that they are gradually decreasing, especially in the Seven Korles. They have two subdivisions amongst them, one called *Tirringa Rodi* and the other *Halpagay Rodi*, and though they both live as one people, yet there are some, who claiming their descent from a certain degraded princess, named Navaratna Valli, would not intermarry with the rest.

Nothing could have been more wretched and debasing than the condition of the Rodiyas under the Kandyan despotism, which prohibited them, not only from possessing lands, or carrying on any trade for their subsistence, lest they should arise from the mendicant state to which they were condemned, but also from dwelling in the same villages with the other people; nay, even from drawing water out of their wells, as if they were the vilest of human beings, whose very touch would be pollution. Our government, however, does not recognize these unjust and cruel prohibitions; but, nevertheless, they have still such a controlling influence over the minds of the Rodiyas from long habit, that they are never infringed, and if there be any instance to the contrary we must look for it only amongst the few who are located in the neighbourhood of Europeans.

The Rodiya villages are always remote from those of the Singhalese, who contemptuously call them *Kuppayams*, which signifies, "the habitations of outcastes." A *Kuppayam* usually contains from ten to fifteen hovels, which, however, exhibit a neat appearance, having often small plots of ground planted with betel vines and plantain trees attached to them.

In their person, as already observed, the Rodiyas are more robust and athletic than the Singhalese, and remarkable for

their bold bearing and expressive countenances; but the mendicant life which they lead has so completely cramped their physical energies that they are exceedingly averse to labour. Their women are generally handsome, which, with their winning address, has often enticed many a Singhalese youth to go and live with them in their Kuppayams, abandoning his family and connexions, and enduring with stoical indifference the reproaches and disgrace consequent upon his conduct. In their dress, the Rodiyas exhibit nothing peculiar; it is the same as that of the lower orders of the Singhalese, with the exception, that the men have no covering for their heads, and the women for the upper parts of their bodies. Some of the young girls, however, in the Central Province, do not at present allow their bosoms to be exposed, but have a gaudy handkerchief gracefully tied round them. Both the men and women let their hair grow to its full length, and tie it up behind into a knot, and the women wear a brass or tin trinket, called "*Kooroo*," and a roll of dyed palm leaf, called "*Kola*," on each ear, a string of chank or glass beads about the neck, and a brass armlet above the right elbow.

With regard to their diet, my informant, who is himself a Rodiya, from the Seven Korles, denies that they ever eat carrion, or any animals but elk, deer, pig, hare, monkey, squirrel, mongoose, civet, cat, guana, and tortoise. Mr. Jayetilleke, the intelligent Modliar of the Kornegalle Cutcherry, whom I have consulted on the subject, says, however, that they eat every thing that comes in their way, and that they relish nothing so much as dead cattle in a putrified state; and it should be remembered, that Knox also mentions the frequent contests they used to have with the weavers, in his time, for this loathsome food. The wild animals they either hunt with dogs, or shoot with bows and arrows, in the use of which they are reputed to be as expert as the Veddahs. Under the Kandyan Government they were, however, not permitted to hunt or shoot any game, and it was no doubt

owing to this circumstance that they betook themselves to feeding on animals which have died a natural death.

Marriages among the Rodiyas is not attended with many ceremonies; the day fixed having arrived, the bridegroom accompanied by his friends goes to the bride's house in the evening, taking with him a suit of apparel, and a pingo or two of cakes and plantains, which he presents to the bride. Her parents then entertain him and his friends with a repast, and he, having stayed with her that night in her house, conducts her the next day to his own. It, however, often happens amongst them for two young people to meet together, and agree between themselves to live as husband and wife without consulting their parents or observing any ceremony at all. The Rodiyas marry but one wife, though it is not uncommon with them to have two at the same time, and also for several brothers to cohabit with the same woman. Amongst a people so debased as the Rodiyas, it is probable that incestuous intercourse exists, but still, I do not think that it is practised by them to the revolting extreme described by Knox, who, perhaps, derived his information from prejudiced sources. It must, however, be observed, that prostitution is openly carried on by the Rodiya women, and their parents and husbands not only wink at it, but encourage them in their lewd propensities.

The Rodiyas always bury their dead. They never wash the corpse, but merely wrap it up in a mat, and carrying it on a pole to the jungle next adjoining the kuppayams, inter it there. On the seventh day after the burial, the friends of the deceased assemble together in his late dwelling, and partake of a repast which is prepared for them by his nearest surviving relatives.

The Rodiyas have generally the reputation of being skilled in charms and philters, but they are lamentably ignorant of medicine, and in case of illness, are therefore obliged to consult the Singhalese medical men, of whom, however, none above the Durea caste condescend to attend on the patient in his Kuppayam, but merely furnish his friends with the neces-

sary medicines on their describing the symptoms of the disease. Even the Durea medical men, I am informed, will not go further than the entrance of the Kuppayam, where the patient is brought up for them to look at him and prescribe the remedies.

The Rodiyas follow no other pursuit than strolling about the country, to beg, or tell fortunes, and manufacturing rattan baskets, and winnows, and whips, and ropes of hides and of various vegetable fibres, which they barter for grain. When they go to beg, which they chiefly do at harvest time, they may be seen in groups, both men and women, with their children; the men carrying their chatties and pots, and whatever else they possess, in baskets hanging on a pingo at one end only; it being contrary to custom for them to load their pingoes at both ends, as the other people do. On these occasions, the women sing and dance, as well as exhibit their juggling exploits, by balancing and spinning a brass plate on one finger, or tossing up a number of balls in the air, and keeping them in continual motion, without suffering them to fall on the ground: whilst the men are beating the Bummedia, a kind of drum made of an earthen vessel, covered with monkey skin. Since the British accession, however, some few of the Rodiyas in the Central Province have turned their attention to agriculture, and are cultivating, near their Kuppayams, small patches of paddy lands let to them by the Gamaralles,* who, however, instead of taking a share of the crop for the rent, receive from them an annual supply of ropes of hides, as it would be inconsistent with the notion of defilement which they connect with the touch of a Rodiya, for them to make use of the crop raised by him.

The Rodiyas rear pigs and poultry in almost all their Kuppayams, and some of them also keep cattle; but in order to distinguish their cattle from those belonging to the Singalese, they are obliged to have a cocoanut shell perforated and hung on their necks by a strap of hide.

* Proprietors.

The Rodiyas have their own headmen, called Hulawalias, and under the Kandyan Government the appointment of these headmen was in the patronage of the Koralle of the Pattoo; but it now rests with the Government Agent for the Province or his Assistants. The Kandyan Government exempted the Rodiyas from all services, except furnishing the royal stores with ropes of hides for ensnaring elephants; but at present they pay the Road Tax in common with the other classes of Her Majesty's subjects.

Under the Kandyan Government, as the Rodiyas were not permitted to enter the precincts of the Courts, they had their disputes settled by the nearest Durea headman, and if they ever ventured to resort to the Vellala chiefs for justice, they were obliged to utter aloud their complaints, standing at a distance, with uplifted hands, or remaining prostrate on the ground. They have now, however, free access to our tribunals, and no distinction is made between them and the Singhalese high caste men: they are placed at the same bar for trial, and, when sentenced to imprisonment, confined in the same gaol.

The Rodiyas profess the Buddhist religion, but they are not allowed to enter a temple, and they therefore hear the Bana standing outside the Bana Madduwa. They however, offer up propitiatory sacrifices of fowls and salt fish to the devils, called Garra Yakko and Weddi Yakko, who they believe occasion diseases, and other mischiefs, and they also have recourse to invocations by cutting limes, as practised by the Singhalese, when any member of their families is taken ill. Some years ago a few Rodiyas in the Matelle district were converted by a Baptist Missionary; but I am informed that they have since relapsed into their heathenish practices.

Amongst the vices ascribed to the Rodiyas, theft is the principal; hence the appearance of a Rodiya in the neighbourhood of a village, always inspires dread. There is no doubt that the Rodiyas are, generally speaking, thieves, for in their present abject state, there is nothing to induce them to be honest,

and a Rodiya himself confessed to me that they do occasionally steal clothes from the bleaching grounds, and stacked corn from the threshing floors.

The ordinary language of the Rodiyas is Singhalese, which they, however, speak with a quick accent, intermixed with a number of words peculiar to themselves, in order to render their speech unintelligible to strangers. Some suppose that the words in question are mere slang; but I am rather inclined to think that they are the relics of a language which was spoken by the ancestors of the Rodiyas, and since merged into the Singhalese.

The following is a list of words used by the Rodiyas.

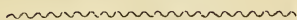
God	Bakkuru	බකුරු
Heaven	Teriangay	තෙරිසන්ගේ
Earth	Bintalauwe	බින්තලවු
Sun	Eeláyatteriangay	ඊලයත තෙරිසන්ගේ
Moon	Hápateriangay	හාපතෙරිසන්ගේ
Stars	Hápangaval	හාපන්හවල්
Light	Gigéri	ගිගිරි
Darkness	Kaluwella	කළුවෙල
Fire	Dulumu	දුළුබු
Water	Néláttu	නිලතු
Sea	Teríláttu	තෙරිලාතු
River	Níláttuwa	නිලාතුච
Tank	Níláttukattinna	නිලාතුකට්ටින
Mountain	Teriboruluangay	තෙරිබොරළුගේ
Village	Dumuna	දුමුන
Field	Panguralla	පතුරුල
Jungle	Raluwa	රළුව
Sand	} Boraluwa	බොරළුව
Dust		
Mud		
Stone		
Man	Gava	ගාව

Woman	Gavé	ගැවි
Boy	Bélenda	බිලෙන්ද,
Girl	Bélandé	බිලෙන්දි
Body	Murutté	මුරුති
Hair	Kaluwelé	කළුවැලි
Head	Kerédia	කෙරෙඩිය
Eye	Láwatté	ලාවට්ටි
Face	Irravuwa	ඉරවුව
Ears	Irravuwaanguval	ඉරවුවා ආනිගවල්
Nose	Irravuwa	ඉරවුව
Mouth	Galla	ගලල
Tongue	Gallagewanna	ගලගෙවුනු
Hand	Dagula	දගුල
Breast	Hiddulu	හිදුළු
Belly	Pekeritta	පෙකරිත
Flesh	Murutung	මුරුතුං
Milk	Hidduluangaval	හිදුළු අංගවල්
Blood	Lathu	ලතු
Spittle	Galle lathu	ගලලේ ලතු
Husband	Gádía	ගාඩියා
Wife	Gádikewenni	ගාඩි කෙටෙන්ති
Father	Hiddulu Gava	හිදුළු ගැව
Mother	Hiddulu Gaví	හිදුළු ගැවි
Grandfather	Ileyak Hiddulu Gava	ඊලෙක් හිදුළු ගැව
Grandmother	Ileyak Hiddulu Gaví	ඊලෙක් හිදුළු ගැවි
Brother	Ekangay gádiá	එක අංගේ ගාඩියා
Sister	Ekangay gádi	එක අංගේ ගාඩි
Son	Gádé bélendá	ගාඩි බිලෙන්ද,
Daughter	Gádi bélendè	ගාඩි බිලෙන්දි
Priest	Navatta	නවතා
Elephant	Palánuwa	පලානුවා
Cheetah	Raluwa bússá	රළුවුස්සා

Bear	Murutíviganan-gaya	මුතිගනගසා
Wild hog	Gal Murutaya	ගල්මුතසා
Domestic pig	Hápa Murutaya	හාපමුතසා
Deer	} Raluwelúdda	රළුවළද්ද
Elk		
Dog	Bussá	බුස්සා
Bitch	Bissí	බිස්සි
Cat	Buhákawanna	බුහාකවනනා
Jackal	Pangurulla bussá	පහුරුලෙ බුස්සා
Wanduro	Búléwa	බුලෙවා
Rilawo	Náttuwa	නාතුවා
Bull	Lúdha	ළද්ද
Cow	Lídhi	ලිද්දි
Calf	Lúdhubílenda	ළදු බිලුන්ද
Bull Buffalo	Pangurul lúdha	පහුරු ළද්ද
Cow Buffalo	Pangurul lédhí	පහුරු ලිද්දි
Guano	Bimpallo	බිම්පල්ලෝ
Alligator	Níláttuteríhápp-aya	නිලාතු හේරිහාපසා
Tortoise	Pélawa	පේලාවා
Lizard	Aharubuluwa	අහාරු බුළුවා
Snake	Iláya	ඉලයා
Cock	Pattéla	පතිලියා
Hen	Pattélikette	පතිලි කෙන
Chicken	Pattilibèlènda	පතිලි බිලන්ද
Fish	Nílátttuwang	නිලාතුචං
Tree	Uhella	උහලෙ
Flower	Ulelangay	උලුලිලන්ගේ
Fruit	Lávuna	ලාලුනා
Cocconut	Mattulávuna	මඩුලා උනා
Jack fruit	Vettiāngaval	වේට්ටි අංගවල්
Plantain	Pabbruken	පබ්බුරුකන්
Arreka nut	Pongaleng	පොන්ගලං

Betel	Tobala	තෙබලා
Tobacco	Rebut	රෙබුත්
Paddy	Attumadhu	අතුමදු
Rice	Madhu	මදු
Corakan	Hunkeweena	හින්කෙවුනා
Straw	Pangarang	පන්ගරන්
Temple	Bakkuruwangay	බකුරුඅන්ගේ
House	Dumuna	දුමුනා
Door	Mattilla	මතිලල
Cloth	Pottia	පොතිය
Mat	Pittawánna	පිට්ටානා
Pot	Wámé	වාමේ
Water pot	Nílattu Wámé	නිලටු වාගේ
Rice pot	Mighitti Wámé	මිහිටි වාමේ
Mortar and pestle	Lukkanawanga-val	එකකන අන්ගවල්
Knife	Náduwa	නාදුව
Honey	Uhella lathu	උහෙලල ලතු
Jaggery	Galmeri	ගල්මිරි
Salt	Hurubu	හුරුවු
Lime	Aharubulu	අහරු වුළු
Oil	Mattubu	මටුටු
Good	Teri	තේරි
Bad	Hapai	හාපයි
No	Navati	නාවති
To go	} Dhisenewá	දිස්සෙනාවා
To walk		
To come	Tevínavá	තෙවිනාවා
To sit	Yappiunawá	යාපිනාවා
To sleep	Láwattinatewen-ewá	ලාවටනාන්ටෙනාවා
To dance	Kuttandupanawa	
To sing	Kelleneighilen-ewá	කෙලෙහි ඉනිලෙනාවා


To laugh	Galupáhénawá	හළු පාහිනවා
To weep	Irrawallukkan- awá	ඉරවල්ලු එකකනවා
To see	Pekanawá	පෙනෙනවා
To open	Hápakaranawá	හාපකරනවා
To cook	Navatkaranawá	නාවත්කරනවා
To eat	Migannawá	මිගනනවා
To beat	Lukkanawá	එකකනවා
To kill	Ralukaranawá	රළුකරනවා
To die	Likkenawá	ලික්කෙනවා
To bury	Távanawá	තාවනවා
To give	Yappanawá	යප්පනවා



*Notice of various Rock Inscriptions in the North-Western
Province. By A. O. BRODIE, Esq.*

HAVING at various times, when traversing the jungles of this Province, met with inscriptions engraven on rocks, I have made copies of several, and beg herewith to lay them before the Society, in the hope that some member may be able to decipher or translate them. I am afraid that the majority will be found to possess no interest whatever, and that some of them can scarcely be termed ancient. In most cases these inscriptions are much defaced; and though I have bestowed a considerable degree of trouble in tracing the characters, I should have felt averse to trouble the Society with such mutilated copies, were it not for the simple fact that I am utterly ignorant of the languages in which they are written, and may therefore hope that of each enough has been preserved to make it intelligible. I now proceed to

mention the place at which each inscription is to be found, adding such information regarding the locality or traditions current in the neighbourhood as may seem interesting, or may give a clew to the translator.

No. I. This long inscription is engraven on a stone block about ten inches square in section, and standing five feet above ground; in fact, just one of those short pillars of which thousands are to be met with in the forests of the District, and which from time immemorial have been used as supports for Vihares, Dewales, Banna-Maddoos, and other religious edifices. The letters are small and tolerably boldly cut; they are however rudely formed and unequal in size. I think that the want of skill in the workman must account for many of those variations from the common Singhalese characters which will be observed in the copy; thus in very many cases where a  or other letter with an upward loop occurs, a line is to be observed produced at a tangent to the curve. I hardly think this stroke to be intentional, but to have simply arisen from the chissel of the workmen slipping forward instead of following the proper curve. Some other unusual marks may be explained in the same manner.

A few of the characters, however, if indeed they be letters, are quite different from any to be found in the Singhalese alphabet. The pillar on which this inscription is engraved is at Pooliankoolum, a small village about ten miles N. N. E. of Chilaw, and six miles east of the main road. It stands in the jungle, close to the remains of an ancient Dehwale built by Ganniwelle Bâhu, who reigned at Anooradhapoora, and of a more recent Dehwale. The native tradition is to the effect that the pillar was erected to commemorate the seizure of a local chieftain by Ganniwelle Bâhu, king of Mahdampe. Various places in the vicinity have names referring to the same event: such are Mandelane Kumarenkatoowe, &c.

Nos. II. III. IV. are engraved on three rocks at Parmakande Vihare, which lies about seventeen miles from Putlam

and two to the north of the road leading from the latter village to Kurnegalle. The Vihare is one of the so-called rock temples, being built under a projecting ledge of granite which forms part of the roof. The dwellings of the priests, the Bannamaddoos, are at the foot of a natural talus or debris, the former being built in the usual manner, forming a square with a small open and sunk court in the centre. These inscriptions are in the character most commonly observed in rock inscriptions in this District, and are unfortunately quite unintelligible to the priests.

No. II. Is carved high up the overhanging rock previously mentioned; the letters are large and deeply cut. The granite has however unfortunately scaled off in some places, and has probably to some extent mutilated the inscription.

No. III. Is on a small projecting knoll close to the entrance of the priests' dwellings, and seemed to be all but unknown to the natives, till I caused it to be cleared from the earth in which it was well nigh buried.

No. IV. Is on a smooth face of a rock above a deep natural hollow, serving as a reservoir of water, about one hundred yards west of the last.

With regard to the first mentioned of these inscriptions, the natives believe it to have been cut either by the immediate predecessor of the present head priest, who is himself an aged man, or else at a time one generation more remote. Of the other two they can say nothing.

No. V. This I copied from a small loose block lying in the jungle, about fourteen miles south of Putlam, and two from the main road. The block has unfortunately at one time been used by the natives for sharpening cayties, &c., a circumstance which explains its present condition.

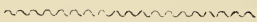
A few scattered stone pillars in the vicinity prove that in some former age there was a Vihare in the neighbourhood. I am not aware, however, that the natives have any traditions

regarding the edifice. Of this inscription an account was in 1832 transmitted by Simon Casie Chitty, Esquire, to the Ceylon Literary Society. At that time the stone was probably less dilapidated than at present, and it would be well to obtain the copy then made. I have unfortunately not been able to ascertain where it was deposited when the Society was broken up.

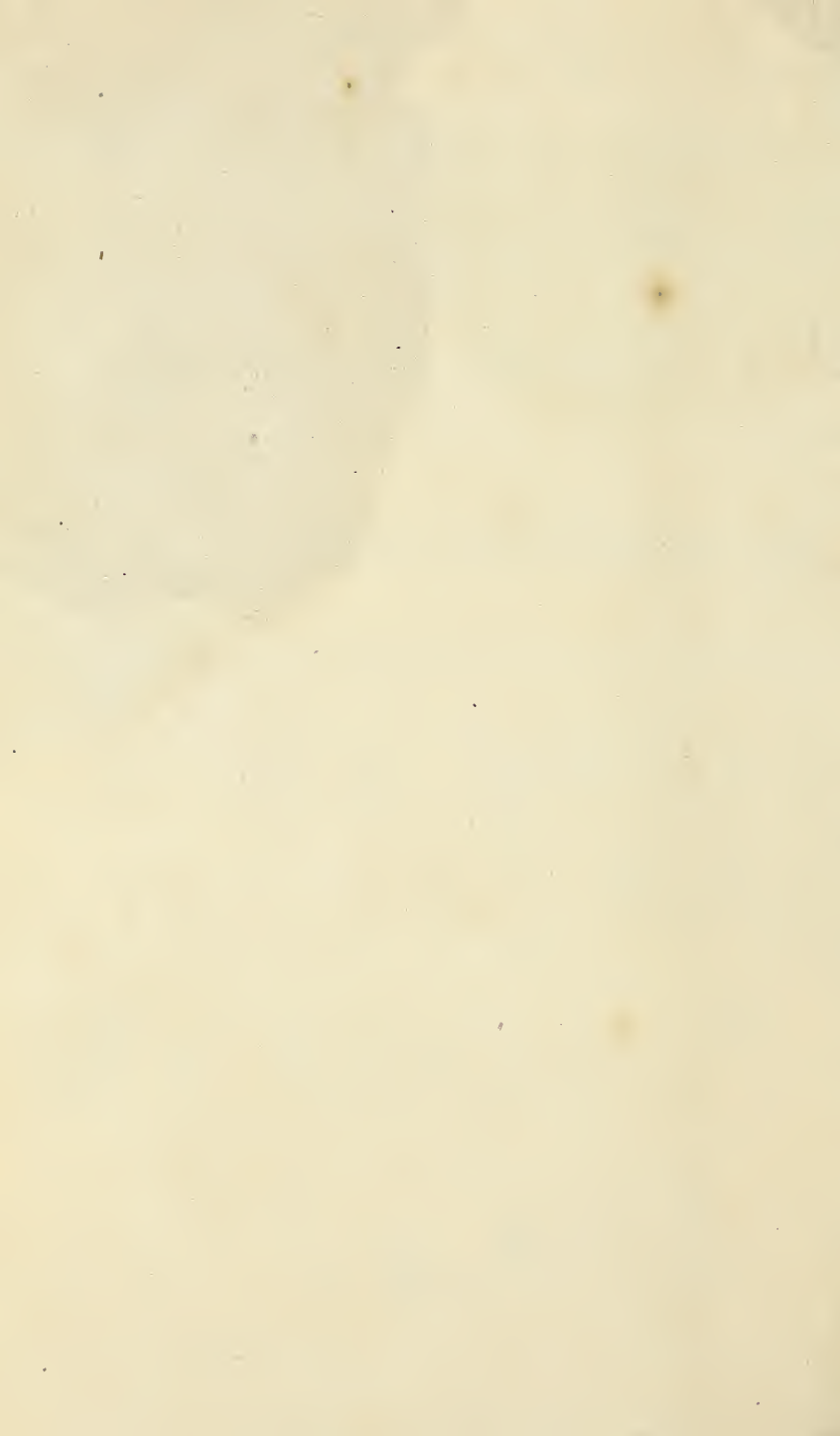
No. VI. This inscription I lately found when visiting the Rock temple of Ehelegame near Nahnerie near the boundary between the Meddhe Pattoo of Rambemoole and Hattalis Pahai Corles. It is engraved on a slab placed in the centre of a platform, surrounded by dwellings for the priests, Vihares, &c.; the surface of the stone has weathered considerably and has, I am afraid, obliterated one line completely. In the jungle around this temple there are very many pillars, ruined Dagobas, &c.; shëwing that at one time Ehelegame must have been a place of considerable importance.

No. VII. This inscription was lately pointed out to me when passing through the village of Palligame, about ten miles from Kurnegalle, and close to the Kandy road. There I found extensive remains of ecclesiastical buildings, some being of much more ancient date than others. There are numerous neatly carved stones strewn about, and several wells cut to a considerable depth. The natives, as usual, believe that large sums of treasure are concealed near these ruins, and pointed out a rude figure of a man or demon which they suppose to bear some reference to the hidden wealth.

A great portion of the rock appears to have been at some time or other covered with inscriptions: of these a great portion is now lost. I could only trace with tolerable certainty so much as is here given. The spot itself bears the local name of Viharre Godde.







Handwritten text in the first section, enclosed in a rectangular border.

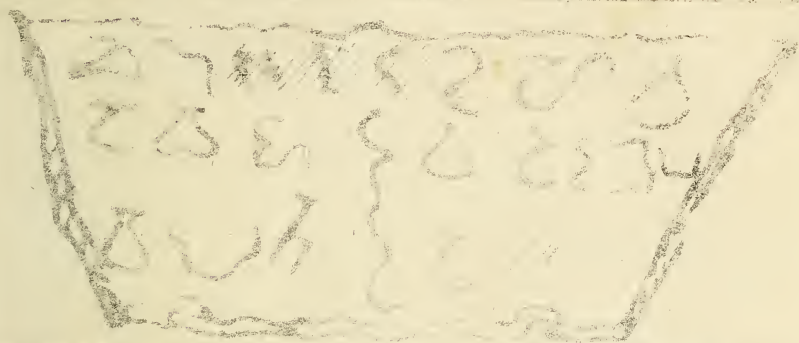
Handwritten text in the second section, enclosed in a rectangular border.

Handwritten text in the third section, enclosed in a rectangular border.

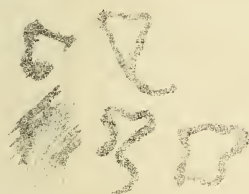
Handwritten text in the fourth section, enclosed in a rectangular border.



VI. - Cecile. Same.



VII. - Where Godde Falls Same.





COMMITTEE MEETING, HELD APRIL 30TH, 1853.

Present:—Hon'ble Justice Starke, the Rev. Dr. Kessen, Dr. Lamprey.

The Secretary laid before the Meeting Mr. Ondaatje's contributions and letters, marked A. B. C. D. E.

Read answer to letter (marked F), addressed to Messrs. Thacker Spink & Co., Publishers of Calcutta, in reply to the Secretary's letter of the 12th March 1853.

The Committee recommend that some of the printed Catalogues of prices of Books be referred to before deciding on purchasing the book.

A manuscript copy of the Woods of Ceylon, contributed by Adrian Mendis, was referred to the Woods Committee for their report.

The date of the Quarterly Meeting was fixed to be held on the 20th May, 1853.

A.

Badulla, 13th April, 1853.

DEAR SIR,

By this day's Tappal I send you another quantity of Vegetable fibre, viz :

1. Fibre from the *Crotalaria juncea*, collected at Chilaw.
2. Do. *Calotropis gigantea*, collected at Putlam.
3. Do. *Sanseivera Guineensis*, collected at Putlam.

I have directed a copy of my Pamphlet to be sent to you, in which you will find these fibres noticed.

I am, &c.,

W. C. ONDAATJE.

B.

List of Vegetable Products presented to the Ceylon Asiatic Society, from 31st March to 13th April, 1853.

GUM-RESIN.

- 1.—Kino extracted from the *Pterocarpus Marsupium*, Roxb., at Badulla, (Vide letter dated 31st March, 1853.)

- 2.—Resin from the *Vateria Indica* (Indian Copal.)
- 3.—Ceylon Gamboge, extracted from the *Hebradendron gambogioides*,
Graham, at Badulla.

DYES.

- 1.—Dyed specimens of Ceylon Madder (*Rubia cordifolia*.)
- 2.—Ceylon Madder Lake.

VEGETABLE FIBRE.

- 1.—From the *Hibiscus cannabinus*, collected at Putlam.
- 2.— „ *Abelmoschus moschatus*, collected at Badulla.
- 3.— „ *Calotropis gigantea*, collected at Putlam.
- 4.— „ *Crotalaria juncea*, collected at Chilaw.
- 5.— „ *Sanseivera guineensis*, collected at Putlam.

Badulla 16th April, 1853.

W. C. ONDAATJE.

C.

Badulla, 16th April, 1853.

SIR,

It affords me great satisfaction indeed, to find from your letter of the 12th March last, that my efforts to draw public attention to the Vegetable products of my native country, have met with so much encouragement at the hands of your Society. Allow me now to offer them my best acknowledgments for the notice they have been pleased to take of my labours in the field of Botany, and to assure them, that this will prove no small stimulus to me to continue to devote myself to my favorite study.

As the mode of preparing the Vegetable Products which I have presented to the Society, and their uses are described in the accompanying little pamphlet, I take this opportunity of requesting the Society's kind acceptance of the same.

I remain, &c.,

W. C. ONDAATJE.

Botanical Names.	Singhalese Names.	Tamil Names.	Locality.
GUM-RESIN.			
<i>Pterocarpus Marsupium</i> , (Kino) ...	හේමාළු ...	உதிராவெங்கைமரம்	Badulla District.
<i>Vateria Indica</i> (Indian Copal) ...	හල්... ..	பின்னைமரம்	Wedagama.
<i>Hebradendron gambogioides</i> (Ceylon Gamboge)	කොකවිස ...	—	Badulla.
DYES.			
<i>Rubia cordifolia</i> (Madder) ...	මොමදිකවල්	மந்திரட்டி	Badulla.
<i>Morinda umbellata</i> ...	—	சூராமரம்	Wellasse.
VEGETABLE FIBRE.			
<i>Hibiscus cannabinus</i> ...	අඹුල්පලා ...	புளிச்சக்கீரை	Four & Seven Korles.
<i>Abelmoschus moschatus</i> (Musk Mallow)	කපුකොණ්ඩ ...	—	Badulla District.
<i>Calotropis gigantea</i> ...	විරහස් ...	எருக்களு	North & West Prov.
<i>Crotalaria juncea</i> (Hemp) ...	හන ...	சநல்	Galle, Chilaw, Topu
<i>Sanseivera Zeylanica</i> and <i>Guineensis</i>	ශ්‍රීසඳු ...	மருள	Putlam District.
<i>Antiaris saccidora</i> (Ceylon Sack Tree)	විවිහෙ ...	—	Badulla District.
OILS.			
<i>Cinnamon Suet</i> ...	කුරුඳුකෙල් ...	—	Badulla District.
<i>Sethia indica</i> —(Wood oil)	දම්මිලකෙල් ...	செமமனத்தி	Putlam District.
<i>Schleicheria trijuga</i> (Ceylon Oak Oil)	කොණ්කෙල් —	கூளாமரம்	Bintenne & Wellasse.
<i>Litsea sebifera</i> ...	කඩුදඩුකෙල් ...	—	Badulla District.
<i>Ceylon Gamboge Oil</i> ...	කොකවිසකෙල් ...	—	Badulla District.

W. C. ONDAATJE.

Badulla, 22d April, 1853.

Badulla, 23d April, 1853.

DEAR SIR,

I beg to acknowledge the receipt of your favor of the 16th instant, acquainting me with the safe arrival of all my contributions lately forwarded through you to the Society, and which, I am glad to find, have received so much attention from you and the other members.

With regard to the Kino, I request you will be good enough to inform Mr. Dawson, that I have already taken steps to collect 1 cwt. of the Gum, and as soon as I have collected it, I shall have much pleasure in sending the same to that Gentleman for transmission to the English Market. I keep an accurate account of the expenses incurred in collecting it. I am now engaged in collecting full information to enable me to draw up an account of this useful Tree, and which I shall submit for the consideration of the Society.

The enclosed List will afford the information you desire respecting fibres, &c.

Herewith I send you a piece of the Wood and Root of the *Morinda umbellata*, which yields a red-dye; produced by adding lime-water, or any other alkalies to an infusion of the root.

I beg your acceptance of a copy of my Pamphlet on the Vegetable Products of Ceylon.

I remain, &c.,

W. ONDAATJE.

St. Andrew's Library,

Calcutta, 7th April, 1853.

SIR,

In reply to your favour of the 12th ultimo, we beg to say that we have a copy of the first edition of Wilson's Sanscrit Dictionary well bound in half russia, at Rs 50. This is, we believe, the only copy of the Dictionary to be had in Calcutta. The work is very scarce.

We remain, &c.,

J. LAMPREY, Esq.,

THACKER SPINK & Co.

Hon. Secy, R. A. S., C.B.

Colombo.

QUARTERLY MEETING, HELD 20TH MAY, 1853.

Present:—The Rev. D. J. Gogerly, in the Chair.

The Hon'ble Justice Starke, Messrs. Skeen, De Zoysa, Dr. Misso, and Dr. Lamprey.

The second part of the Journal for 1853 was laid on the table, and the Meeting was informed by Mr. Skeen that in a few days the binding would be completed, when it would be ready for distribution.

Mr. Ondaatje's contributions and letters marked A, B, C, were laid on the table and read.

Dr. Kelaart's communication on some new Reptiles was read and ordered to be printed in this Journal.

Mr. Casie Chitty's paper on the Rhodyas and vocabulary of their dialect was read and ordered to be printed.

Mr. Gogerly read his paper on Buddhism, in continuation of a former paper; ordered to be printed.

Mr. Justice Starke, reports that the book-cases are completed, and that the Catalogue of Books which were presented and given to the Society, does not correspond with the books actually in possession of the Society.

Samples of Lithography done by the Society's Press were next laid on the table.

A vote of thanks was given to the Chairman, and the meeting separated.

A.

Badulla, 10th May 1853.

DEAR SIR,

Herewith I send you a coil of braid made with the black fibre from the leaf-stalks of the Jaggery Palm (*Caryota urens*.)

The "Rodyahs," or outcastes, manufacture the fibre into rope which is of great strength.

Is this article the same as the "*Végétale bristles*" largely imported into England for making brooms?

I also send you a small quantity of woolly material, found at the base of the leaves, and which the Singhalese use as tinder. Professor Lindley informs us, that a similar substance yielded by another species of Palm,

(*Saguerus saccharifer*) is used for making brooms, cables, ropes, and also as tinder, and much employed in caulking ships (*Vegetable Kingdom.*)

I remain &c.,

W. C. ONDAATJE.

B.

Badulla, 14th May, 1853.

DEAR SIR,

I send you a small quantity of Madder Powder in the accompanying parcel.

Professor Royle says, in his *Materia Medica*, that the Kino produced from the *Pterocarpus Marsupium* is previously imported to *Bombay* from the Malabar Coast and from thence exported to England. Perhaps by writing to some Mercantile house at *Bombay* we may be informed at what rate the article is sold in England.

If you require to send a sample of the Ceylon kino I shall be able to give you about 2lbs. immediately.

I remain, &c.,

W. C. ONDAATJE.

C.

Badulla, 17th May 1853.

DEAR SIR,

I send you herewith a piece of rope made with the black fibre from the base of the Kittul leaf. I hope to be able to send you a large one, about 10 fathoms long, in a couple of weeks.

The Singhalese use the rope for tying Elephants, &c.

Mr. Ward informs me that a substance, resembling the woolly material of the Kittul already sent to you, is commonly used in China as tinder under the name of "Punk." I think it is the same material, but from a different species of Palm.

I remain, &c.,

W. C. ONDAATJE.

Contributions to the Library since last General Meeting.

Directions for collecting Specimens of Natural History.

Smithsonian Contributions to Knowledge; Vol. III. and IV.

Fifth Annual Report of the Smithsonian Institution.

Smithsonian Report on the Chemical Arts, from the Smithsonian Institution.

Journal of the Indian Archipelago, for Nov. 1852, from the Editor.

Annals and Magazine of Natural History, Nos. 61, 62 and 63.

Observations on the Vegetable Products of Ceylon, from Mr. W. C. Ondaatje.

Journal of the Asiatic Society: Vol. I. II.

Proceedings of the Numismatic Society of London for 1836, 1837, 1838.

Gullimore's Oriental Cylinders, No. 2.

Catalogue of Oriental Manuscripts at Hartwell House, from Mr. Justice Starke.

EVENING MEETING, HELD 3RD DECEMBER, 1853.

An Evening Meeting of this Society took place at Mr. Justice Starke's house, on Saturday 3d December, 1853.

The following books, lately received, were laid on the Table.

Journal of the Royal Asiatic Society, Vol. 15, part 1.

Journal of the Asiatic Society of Bengal, No. 7 of 1852, and Nos. 1 and 2 of 1853.

Bibliotheca Indica, from No. 45 to No. 49, both inclusive.

Journal of the Indian Archipelago, No. 1 of vol. 7, from the Editor.

Annals and Magazine of Natural History, Nos. 67, 68, 69 and 70.

Typography, or Letter Press Printing in the 15th Century, by W. Skeen, Esq., presented by the author.

Meteorological Observations, completing the series up to the month of September, were received from D. Sanders, Esq., of the Batticotta Missionary Institution, and from Commander Higgs, Master Attendant of Trincomalie, also notices of the Comet seen in August last.

Trincomalie, 25th August, 1853.

We saw a Comet here on the evening of the 23rd instant, a little after 7. It was low down in the w. n. w. quarter. Through a glass of small power the nucleus and tail were unusually bright; a line from *alpha* Cygni through *zeta* Ursa Majoris led to it. It was very clearly seen last night, I merely caught a glimpse of it, and it bids fair to be overcast to-night. So soon as I am able to get a few angles to fix it approximately, I will send you the declination and right ascension.

Yours, &c.,

J. HIGGS.

14th September, 1853.

The weather was so cloudy that I was unable to fix the Comet. The last night it was seen was on the 1st September at 7-20 P.M., when it had the appearance of a circular mist. I saw it twice for a few seconds with my glass (about 80 power) on the nights of the 27th and 30th August; the nucleus was astonishingly bright, as large as Jupiter. The outside lines of the tail also were extremely bright. To the naked eye the tail had the appearance of two bright lines with a dark interval. It had a rapid motion towards the sun; the angle between *epsilon* Ursa Majoris and the Comet having increased between the 26th of August and 1st September, $19^{\circ} 45''$

Yours, &c.,

JOSEPH HIGGS.

This Comet appears to be the same as that observed in Europe in August last, and described in the Illustrated News by Mr. Hind and others.

The following interesting contributions presented to the Society by W. C. Ondaatje, Esq. of Badulla, were next laid before the Meeting.

1. 2lbs. of *Gum Kino*, the produce of the *Pterocarpus Marsupium*, Roxb., which grows abundantly at Badulla and its neighbourhood.

With reference to this important substance, the Secretary remarked, that in appearance and in properties it resembled the Kino of commerce which is so largely used in Medicine and the Arts, and would no doubt be as readily purchased in the markets of Europe as that exported from India, if it could be produced in any quantity; up to the present date only 9lbs. have been sent to the Society, all which has been forwarded to Messrs. Dawson & Co. for transmission to England to ascertain its market value. The reason why the quantity is so small is explained in the following extract from Mr. Ondaatje's letter of the 25th November, 1853.

Regarding the Gum Kino, I regret to say that I have hitherto been baffled in my attempts to secure the services of a native Singhalese, who would undertake to collect a cwt. of the Gum. The people are very averse to the performance of any work which is novel to them in character, and which requires any degree of energetic perseverance, or the real object of which they do not quite comprehend.

Under these circumstances, I would suggest to you to apply to Government to instruct the Government Agent to direct each Headman to collect quantities of the Gum from the trees in the villages under his charge. If the fluid gum is sent to me I will have it properly dried and sent to the Society. The trees are just now in blossom; and as at this time the gum flows in greater abundance, it would be a pity to let this year pass over without making an effort to collect at least two cwts.

I will send all the Gum I have hitherto collected, which is only 9lbs.

Yours, &c.,

W. C. ONDAATJE.

Mr. Buller considered the best means of forwarding Mr. Ondaatje's views, would be to communicate the wishes of the Society, through him, to the Assistant Government Agent at Badulla; in which the Meeting gladly acquiesced, and requested the Secretary to supply Mr. Buller with any information on the subject he may require.

2. A sample of *Gum* produced by the Satinwood tree; in appearance it resembles Gum Arabic.

3. A sample of *Gum* produced by the Ebony tree. It is in small rounded nodules, partially transparent, when not coloured black with the same colouring matter that gives the wood its chief characteristic; its taste is insipid.

4. A sample of *Gum* from the *Terminalia alata*. In appearance it resembles dark coloured Gum Arabic, but it appears to be a harder and more tenacious Gum than the latter; its taste is also insipid.

5. *Black Resin*, the produce of a tree growing in the barren soil of Badulla, *Semecarpus abovatum*, Moon, the *Kalu Badulla gaha* of the Singhalese. It is of a pure black colour resembling black sealing wax, of very light specific gravity and tasteless. It is soluble in turpentine.

6. A black substance, which Mr. Ondaatje describes in his letter of the 29th November, 1853.

Badulla, 29th November, 1853.

Herewith I enclose a few insects, and a black substance deposited by them on the *Gyrocarpus Jacquini*,—and shall be glad of any further information you can give me regarding them. The Singhalese call the substance "Kadde pas," and use it as an external application in cutaneous affections of the legs.

Your's, &c.,

W. C. ONDAATJE.

The Secretary regretted that he could give no further information regarding this substance than that contained in Mr. Ondaatje's letter, not having had time to make a minute examination of the insects, which do not appear to be Aphides, but rather closely resemble the Ichneumonidæ; at the next Evening Meeting the results of a close examination will be detailed.

7. *Lac.* The Secretary stated, that the sample before the meeting was the produce of the *Chermes Lacca*, an insect which produces two very valuable articles of commerce, namely, Shellac and Lac dye, both which substances are largely consumed in the Arts and Manufactures in Europe; it is extensively exported from India, but as it is described as being abundant in Badulla, there is every prospect of its becoming a valuable article of export from Ceylon also.

The Lac belongs to the same class and order of Insects as the Cochineal, and whilst the latter only produces crimson dye, the former produces the substance called Shellac as well. On macerating a portion of the sample before the Society in hot water, the crimson colour was seen to be imparted to the water, whilst the shellac floated on the surface, and became quite soft and pliant. The colouring matter is altogether derived from the bodies of the insects which reside in the cellular structure of the substance, as it is found on the tree; it is this cellular substance, which appears to be useful in protecting the insect from ants and other enemies, that yields the Shellac.

It would be well worth while to draw attention to the cultivation of the Lac, instead of the Cochineal insect; as the plants productive of the former—(the *Gyrocarpus Jacquini* is one)—as well as the insect itself, are already abundant in the jungle, whilst the Cochineal plant and insect are still strangers to the soil and climate of Ceylon.

8. *Kittul fibres.* A black horse hair like substance, produced from the Jaggery Palm, used by the natives for making ropes, of which specimens were laid on the table, also a brush made with the fibre, for which purpose it appears to be as well adapted as bristles, being quite as strong and almost as elastic. If procurable in large quantities, it might prove a useful product.

2. *Sulphur stone*, described by Mr. Ondaatje as follows:

I have now the pleasure of submitting the accompanying specimen of Sulphur stone, and shall be glad to be favoured with your opinion.

Sulphur exists in Bintenne in combination with iron pyrites in great abundance.

The specimen, submitted to analysis, yielded but a small per centage of Sulphur; it also contained Arsenic in greater quantity than Sulphur; the other constituents being Graphite in isolated granules imbedded in Quartz and Mica.

10. *Steel*. This specimen appeared tolerably pure, of a fine compact grain, but exceedingly brittle, probably owing to its not being annealed properly. The mode of preparation is thus described by Mr. Ondaatje.

In forwarding to you the accompanying specimen of Kandian Steel, made at Kandapalle, in the District of Badulla, I shall briefly remark on the mode of manufacturing it as adopted by the Singhalese.

It consists in introducing a small bar of good Iron into a clay mould of a tubular form, which they call "Cōvey," with pieces of the dried wood of the *Cassia auriculata*, the Ranawara of the Singhalese. The open end of the tube is afterwards closed with clay and it is placed in a charcoal fire for two hours, by which process Carbon is supplied to the Iron which is thus converted into Steel.

The proportions for making steel of the best quality are as follows;— 7 parts of iron to 3 of the dried wood. They also use the wood of the *Toddalia aculeata*, the Kudu meris of the Singhalese, in which case the proportions are 3 of iron to 1 of wood. This wood however produces an inferior Steel; but by increasing the iron to 5 parts, a better kind may be obtained. This kind of Steel is not generally manufactured, as it is brittle and not malleable.

The foregoing description of the Kandyan method of making Steel, bears a very close analogy with that practised by the natives of the South of India, as described in a paper by Dr. Voysey, and published in the Transactions of the Asiatic Society of Bengal of 1832, page 245.

11. *Kandyan paper*, with the following account of its manufacture.

I have much pleasure in addressing the Society again. It is on a subject, which, I conceive, is fraught with much local interest, and to which I am not aware that public attention has before been directed. I refer to the manufacture of Paper by the Kandians, during the period the country was under Native rule.

It seems probable, from the intercourse that once subsisted between the ancient inhabitants of the Island and the Chinese, especially in connection with the Cinnamon trade, that the Singhalese derived their know-

ledge of manufacturing Paper from the latter, who, it is well known, have made it from the liber, or inner bark of a species of *Morus*, cotton and bamboo, from time immemorial. Whilst botanizing in the jungles of Badulla, a species of Fig was pointed out to me by an old Kandian doctor, which he said, had been formerly used to make paper from. He knew nothing himself, however, of the process by which this was effected. On further inquiry I ascertained from another aged Kandian, that the plant to which my notice had been first called, was of different species from that which had been used by his countrymen for making paper.

This individual himself had never made any, but understood the method that had been resorted to for the purpose, as his ancestors had to supply the Stores of the Kings of Kandy with Paper, being that branch of the general service that had been imposed on them,—a service better known by the name of “Rajekarie,” compulsory labour.

The Paper thus manufactured by them was used not for the purpose of writing upon, but for making Cartridges for gunpowder. The people on whom this duty devolved were the natives of Beddegama in the District of Badulla, who received grants of land in consideration of the service they rendered to the State.

The tree from which the Kandians made their Paper is a species of the *Ficus*, called in Singhalese Nānitōl, which is found in great abundance every where in this country.

The following is the Kandian mode of making Paper :—

From the tender branches the whole of the bark is stripped, and afterwards the inner bark (liber) which is of great tenacity, is separated from the outer skin with the hand, and is put into a large earthen pot, and boiled with the ashes of the *Erythrina indica* (Erabodee) until it becomes soft, when it is removed and beaten with a wooden mallet on a stone, till it assumes the consistency of dough. It is next put into water, and churned with the hand, which process soon converts it to a fine homogeneous emulsion. This is poured into a frame having a cloth bottom floating in water. It is again agitated with the hand until the whole of it becomes uniformly spread over the cloth, on which it settles down smoothly.

The frame being then withdrawn from the water, which is allowed to drain off gradually, is next put to dry in the sun. The Paper thus formed is easily removed from the cloth bottom, and becomes soon fit for use. It is very tough, and remarkable for its tenacity, and does not appear to be liable to the ravages of insects, as may be seen from the enclosed specimen of Kandian paper, marked No. 1, which was made about 50 years ago, and which is still in excellent preservation, although

no very great care seems to have been taken of it. The specimens marked No. 2 are those of my making, which I need not say admit of considerable improvement. It is only adapted for writing upon with Indian Ink.

I also forward herewith paper made with fibres of the wild Marsh mallow, *Abelmoschus moschatus*, marked No. 3; and with the inner bark of the Ceylon Sack tree, marked No. 4.

Your's, &c.,

W. C. ONDAATJE.

Mr. Skeen stated that he thought No. 4 might make a paper very similar to that used for the purpose of proof engravings, its texture having a beautiful fine and glossy appearance.

Mr. Justice Starke remarked, that it would be interesting in an historical as well as scientific point of view, to trace the source from whence the Kandyans derived their knowledge of the manufacture; and wished to know if any one present could give some information on the subject. The Secretary referred to a paper in the Transactions of the Asiatic Society of Bengal of 1832, by B. H. Hodgson, Esq., Acting Resident at Nepaul, describing the manufacture of the Nepaulese paper, which appears to be also made from the liber of plants, by the same process detailed by Mr. Ondaatje. The author of that paper was inclined to think also that the Chinese supplied the Nepaulese with their knowledge of the manufacture, as appears from the following extract. "I cannot learn by whom or when the valuable properties of the paper plant were discovered; but the Nepaulese say that any of their books now existent, which is made of Palmira leaves, may be safely pronounced, on that account, to be 500 years old: whence we may perhaps infer that the paper manufacture was founded about that time. I conjecture that the art of paper making was got by the Cis-Himalayan Bhoteahs, viâ Shassa from China. A paper of the very same sort being manufactured at Shassa; and most of the useful arts of these regions having flowed upon them, through Tibet, from China; and not from Hindústan."

It is well known that the Chinese manufacture paper largely from plants up to the present day, and on comparing some of it with that presented by Mr. Ondaatje, there is so close a resemblance, that Mr. Ondaatje's suggestion as regards the sources of the Kandyan paper manufacture, seems to have some foundation.

The Members expressed themselves as being much interested in Mr. Ondaatje's important contributions, which they hoped would obtain that attention they appeared to deserve.

J. LAMPREY, M.B.,
Hon. Secretary.

COMMITTEE MEETING, HELD 21ST DECEMBER, 1853.

A letter from Mr. Ondaatje was read. It was moved and agreed that the subject of his letter be referred to next General Meeting, and considering the expense Mr. Ondaatje must necessarily have incurred in collecting and preparing the several contributions he has made to the Society, the Committee recommend that the sum of £10 be voted to him at the next General Meeting.

A letter from Dr. Kelaart was read and laid on the table, stating, that he had been at great expense in publishing, and requesting that the Society would accept copies of his work in lieu of subscriptions due. It was then moved and agreed to, that two copies of his publication be received, in lieu of all past arrears of subscription due by him to the Society, and that a recommendation be made by the Committee at the next General Meeting, that he be made a Corresponding member of the Society.

Dr. Willisford's correspondence with reference to the Great Exhibition of 1851, read.

It appearing that the Reports were forwarded to him, the Secretary was requested to confer with him on the subject.

Dr. Misso, as a member of the Woods' Committee, reports progress, and is authorized to take any specimens of woods he may select for advantageous arrangement.

Resolved.—That with a view to promote a more general interest in the objects of the Society, and encourage a taste for the study of Natural History, the Society's Museum be open for public inspection during the Christmas holidays in every year, and at such other times and under such rules and regulations as the Committee shall from time to time deem fit.

J. LAMPREY, M.B.,
Hony. Secretary.

GENERAL MEETING, HELD 1ST FEBRUARY, 1854.

J. ARMITAGE, ESQ., in the Chair.

The following books received since the last Meeting were laid on the Table.

7 copies of Jury Reports of the Great Exhibition.

Journal of Natural History, Nos. 71 & 72.

The Secretary read the proceedings of the last General Meeting, and afterwards the following

Report.

The present meeting of the Asiatic Society is convened much earlier than was anticipated, in consequence of the unexpected removal of your Secretary to Kandy, and the departure of your Librarian on his return to England; thus leaving two important Offices of the Society vacant. It will therefore be a matter for this meeting to determine what steps are to be taken to supply the place of these Office bearers.

It will be satisfactory to know, that during the past year much important business has been transacted at the General, Committee, and Evening meetings of this Society, shewing a very satisfactory state of progress,—the proceedings of each meeting have been published from time to time, so that out-

station members and those not able to attend, have been made aware of the Transactions of the Society, which now constitute two very respectable volumes for the year 1853, besides leaving much matter for publication in 1854.

The funds also of the Society are in a very satisfactory state; at least when the out-standing subscriptions are collected there will be a large balance in favour of the Society, which it is hoped will go far towards raising a building fund to enable the Society to provide more ample accommodation for its rapidly increasing Library and Museum; also to afford accommodation for the Society's Meetings of much more suitable character than that which they now possess.

In thus alluding to the Library, we cannot let pass the opportunity for expressing the great obligations that are due to the Hon'ble Mr. Justice Starke, for the interest he took in the affairs of the Society generally, and particularly in this department, which was an object of his special care and attention. The arrangement and cataloguing of our books, which hitherto were for the most part in a dilapidated condition, and very much dispersed, had occupied him during the last year that he held the office of Librarian; and the result of his labours is, that a number of volumes have been collected from out-station members; the serials have been bound together; and we now find that the Society is in possession of a large number of well arranged and catalogued valuable books. Previous to his departure he furnished the following Report as to the present state of the Library, which I shall now read.

Report on the state of the Library.

In pursuance of the recommendation submitted in the Report of the General Meeting of the Society held on the 5th March last, a Catalogue of the Books has been made out.

This was done from all available sources of information respecting books presented to or purchased by the Society. It may therefore be regarded as a Catalogue of the books

which belong to the Society, and which *should* be in its possession, rather than what actually is so; for, in consequence of the books remaining long unbound, and other causes, some of the volumes, or numbers of periodicals, are still missing.

The unbound volumes were accordingly placed in the hands of the bookbinder to be bound up where complete, and where periodicals were defective, to have them put in cloth or otherwise, as circumstances appeared to require; and some estimate may be made of the then condition of the Library, when it is stated, that a dozen volumes or so required repair, by lettering and otherwise, as many have been put up in cloth, and 45 or more half-bound during the past year.

In this way it is probable that deficiencies will be more readily ascertained, than if the list of books had been made up from the shelves,—where the number of volumes does not yet perhaps much exceed 250, exclusive of Blue Books, Gazettes, and unbound numbers of periodicals,—and the wants found out only on inspection and inquiry. It may also be hoped that the liberality of members and others will not be wanting to place the Library of your Society on a suitable and efficient footing.

In the formation of a Library Catalogue, there has been a great diversity of opinion and of practice; and for some time, a *scientific arrangement* of the books was considered the best. It is so, in so far as it collects together works of the same class, or which treat of the same subject; but, like scientific instruments, all scientific arrangements require scientific skill for their proper use. This obviously renders such unsuitable for a public library; and accordingly, a common *alphabetical arrangement* is now generally preferred.

In some libraries they have both sorts; as in the great Harvard Library, where besides an alphabetical there is a systematic catalogue, in which the books are distributed into general classes, each of which again has its subdivisions.

In some other libraries in America, the systematic catalogue is in the nature of an *index of the subjects*; to effect which, the

books are analyzed, and the several subjects treated of arranged under their respective heads. Such an analysis is to a library what an index of contents is to a book: it is an aggregate index.

This is an important step towards the better preservation and diffusion of knowledge; and, if judiciously executed, it is calculated materially to advance literature: it will lessen the labour and anxiety at present unavoidable merely to find out where a particular subject is treated of, and prevent much of that waste of intellectual power now constantly going on from ignorance of what has been thought or done in the matter by others before us.

In one instance in America, the design of the analysis is “to make the catalogue so full, that no one shall be obliged to remove a book from the shelves in order to learn its contents or subjects.” See Report on Public Libraries in America, p. 64. It may be doubted, however, whether such a catalogue of a general library would not, by its bulk, lose its utility in its accuracy. The true principle, perhaps, is to adapt the index to the character and wants of the Society of whose library it is the catalogue; and, no doubt, the aggregation of all such would become a UNIVERSAL CATALOGUE, embracing the whole body of extant literature. See an interesting article on the formation of Library Catalogues by stereotype and separable titles, in the Proceedings of the American Association for the advancement of Science, held in August 1850, p. 165.

The plan of a stereotype catalogue here suggested, and the principle of analysis above indicated, might both be applied to the Library of your Society with advantage.

In the pursuit of knowledge in Ceylon, there are difficulties not a few, particularly as regards native literature. For after you have mastered the characters, and are able, as you think, with your Clough to make your way through a native pas-

sage, comes difficulty the first—Where are the books? There is no Bibliopole! no ola store! And when you at length hear of an ola, you must employ some one to make a copy for you, and obtain the owner's leave for its being transcribed. When you have got all this, you open your copy and find yourself, to your dismay, among unpunctuated lines, and words without capitals, like an antiquated Greek inscription. And when you have at length deciphered some passages, you cannot tell what relationship they bear to the rest of the work, nor, perhaps, what relationship the work itself bears to others, if any. There is no index of contents; and, but for Mr. Alwis's valuable labours, scarce any guide, no comprehensive Manual of the literature.

Some of these difficulties will, of course, not be fully met till there is a greater demand for native works. But even now, if there is not employment or enterprize enough for a bookseller and publisher here, nor for a professional book agent, your Society might meantime be the medium, by its Librarian, for ascertaining where olas for transcription are to be found, and for employing trustworthy copyists to transcribe. This would be a boon to many; and by the facilities thus afforded, tend in its operation to promote the cultivation of native literature.

It would greatly facilitate the perusal of native works, and the study of the native literature, if, in transcribing, the copyist would always separate words and sentences, as is now done in the Tamil, and occasionally in the Singhalese. This, however, requires caution and literary knowledge, the language allowing a union of words by elision of vowels and otherwise. But with all the members of your Society this should be kept in view, and a uniformity in this respect preserved in the Society's Journal.

To a beginner, the characters in the Singhalese language are sufficiently puzzling. Yet they are for the most part remarkably simple and uniform in their structure. They may to a considerable extent be reduced to two elementary particles

of form, *v* and *w*; and the changes on these forms to constitute alphabetic characters, are also for the most part made on uniform principles.

The following Table will shew the progressive developement of the two elementary particles above described, to form alphabetic characters.

TABLE I.

BRANCH I.				BRANCH II.			
တ	ဝ	စ	မ	သ	တ	ဝ	မ
<i>ta</i>	<i>wa</i>	<i>cha</i>	<i>ma</i>	<i>dha</i>	<i>da</i>	<i>o</i>	<i>nga</i>
ထ	ဖ	ဗ		ဗ	ဗ		
<i>tha</i>	<i>pha</i>	<i>è</i>		<i>tha</i>	<i>dha</i>		
ဂ	ဟ	ဃ					
<i>ga</i>	<i>ha</i>	<i>bha</i>					
ဆ							
<i>sa</i>							
ပ	ည	ဇ	ဆ	ဃ	ဃ	ဇ	
<i>pa</i>	<i>ja</i>	<i>chha</i>	<i>sha</i>	<i>ya</i>	<i>sa</i>	<i>gha</i>	

In the preceding Table we have 24 alphabetic characters, namely.

2 vowels, *è* and *o*.

3 gutturals, *ga*, its aspirate *gha* and the nasal *nga*.

3 palatals, *cha*, and its aspirate *chha* and *ja*.

4 linguals, *ta* and *da*, and their respective aspirates *tha* and *dha*.

2 dentals, *tha* and *dha*.

4 labials, *pa*, and its aspirate *pha*, *bha* and *ma*.

2 semivowels, *wa* and *ya*.

3 sibilants, *sha* dental, or *sa* palatal, and *sa* dental, and the aspirate *ha*.

What therefore we have yet wanting are the remaining vowels *a*, *i*, *e*, and *u*, the guttural *ka*, and its aspirative *kha*, the aspirated palatal *jha*, the dentals *ta* and *da*, the labial *ba*, the nasals lingual *na* and dental *na*, and the semivowels *ra* and *la*. These will be found in Table II. which is separated into divisions that might indeed have formed separate tables, there being no common source from whence they may all be derived.

TABLE II.

No. 1.

බ ඩ ඳ
ba kha loo

No. 2.

ල or උ ආ ද උ or උ
la a da u

No. 3.

ර ඉ ඊ ඒ
ra i i na

No. 4.

ත න ක කා
ta na ka jha

It would be interesting to follow these forms into their grammatical position and value in the language, and to ascertain the explanation of their distribution. Such an inquiry might open up to us the philosophy of the language, as well as its historical origin and philological relationship, and lay a foundation for rules for its proper cultivation.

J. STARKE,

Librarian.

In connexion with the Library it may be stated, that several of the Reports of Juries of the Great Exhibition have been handed over to this Society by Dr. Willisford, to whom they were originally sent by Mr. Capper, the Agent for Ceylon at the Exhibition, and formerly Secretary to this Society. It is to be regretted that these books were not consigned to the Society in the first instance, and it is also a matter of deep regret, that no Books or Medals published by the Exhibition Commissioners have been sent to the Society, through whose instrumentality the products of Ceylon were mainly represented at the Great Industrial Exhibition.

The papers bearing upon this transfer will be laid on the table.

Your Secretary has also to lay before the Society a letter received from the Secretary of the Parent Asiatic Society, in acknowledgment of a contribution of a series of Volumes of the Transactions of the Ceylon Branch; as follows :—

*Royal Asiatic Society, 5, New Burlington Street,
London, 19th November, 1853.*

SIR,

The undermentioned Donation having been laid before a General

(Journal of the Ceylon Branch of the Royal Asiatic Society, Vol. 2.
Nos. 1 & 2. 1853.)

Meeting of the Royal Asiatic Society, held this day, I have the honor to convey through you, to the Ceylon Branch of the Royal Asiatic Society, the best thanks of the Society for this addition to their Library.

I have, &c.,

D. CLARKE,
Hony. Secy.

The Secretary of the

Ceylon Branch Royal Asiatic Society.

At the last Committee Meeting, a recommendation was also made that two copies of Dr. Kelaart's work on the Fauna of Ceylon be received in lieu of payment of past subscriptions due to the Society; it now remains with you to confirm this recommendation of the Committee with reference to Dr. Kelaart.

During the past year also many interesting contributions have been forwarded to the Museum by Mr. Ondaatje, whose labours in bringing to light many important natural products of his neighbourhood, cannot fail to elicit your high commendation; it will also be a matter for your consideration at this meeting, to acquiesce in a proposition made at the last Committee Meeting, to grant Mr. Ondaatje the sum of £10 to defray any incidental expenses that may arise during his researches; several of these products are now laid on the table, and those which have not been described at the last Evening Meeting of the Society, will now be detailed.

It will be satisfactory to learn that the recommendation of the Committee to open the rooms of the Society for public inspection at stated periods, was first tried during the last Christmas holidays, when many visitors availed themselves of the privilege.

In conclusion, notwithstanding the great losses this Society has sustained from time to time by the departure from the Island of many of its most active members, a vicissitude to which it must at all times be subject, it is hoped that many will be found both able and willing to assist in forwarding the great objects of the Society, whether, as regards research into the ancient Literature, History, or Antiquities of Ceylon,

or with a more utilitarian and practical object in view,—the investigation of its varied natural products,—for all of which pursuits there is such ample room.

Moved by Mr. Alwis. “That the Report now read be adopted.”

Seconded by the Rev. J. Kats, and carried unanimously.

Proposed by Mr. Alwis and seconded by Dr. Lamprey.

“That Government be applied to for information as to where the Illustrated Catalogue and Medals of the Great Exhibition of 1851, sent out to the Colony, are to be permanently deposited.”

Mr. Alwis was of opinion, in moving his proposition, that the Rooms of the Ceylon Asiatic Society would be the fittest place for depositing them; for besides having the means of preserving valuable books, the services the Society rendered to the Great Exhibition ought alone to entitle it to some consideration.

The Rev. Mr. Kats thought that some official enquiry should be instituted to ascertain why the Society was neglected in the general distribution of the Jury Reports, Illustrated Catalogues, &c. of the Exhibition.

It was then resolved that the Jury Reports sent by Mr. Capper to Dr. Willisford and transferred by the latter to the Society, should be distributed by the Society, according to the instructions contained in the correspondence laid on the table.

The Reports to be distributed as under:

To Dr. Willisford,

„ R. E. Lewis, Esq.,

„ Clerihew, Esq.,

„ E. R. Power, Esq.,

„ J. D. Alwis, Esq.,

„ T. A. Pieris, Esq.,

„ J. Armitage, Esq.,

„ Messrs. Parlett O'Halloran & Co.

The Secretary then proceeded to detail the various interesting contributions sent to the Society by Mr. Ondaatje of Badulla.

1. Specimens of the stem, liber, and a drawing of the Fig tree from which the Kandyan paper was manufactured, together with a specimen of the ashes of the *Erythrina Indica*, with which the inner bark is boiled, and some of the prepared pulp made into the form of bricks, in which state it could be conveniently exported.

2. A quantity of Black Resin, the produce of the *Semecarpus abovatum*; it belongs to the same family of plants as the trees producing the Japan and Indian black varnish. Also a specimen of varnish prepared with this resin and East Indian copal.

3. Inspissated red juice from the wild nutmeg, of a laminated and resinous appearance, translucent at the edges of fracture, of an astringent styptic taste. Forms a variety of the substance known in Commerce under the name of Dragon's Blood.

Professor Lindley states, on the authority of Endlicher, that a species of *Mysticica* of the Philippines "yields a crimson juice, which is collected from incisions in the trunk and used as a substitute for Dragon's Blood."

4. A very fine sample of meal sago extracted from the Jaggery Palm.

5. A quantity of the prepared bark of the *Toddalia aculata*.

"It is used in Southern India as a remedy against remittent Fever. In the 4th Vol. of the Journal de Pharmacie, p. 298, Dr. Virey gives an account of it. My object in sending it to you is with a view to examine its active principle after extracting it from the bark. The family to which this plant belongs, as you know, is XANTHOXYLACEÆ, and yields a crystalline principle, *Xanthopicrite*. By touching the inner bark with Nitric acid, you will find it to give a red colour.

"Dr. O'Shaughnessy has given the following account, derived from French chemists, for preparing *Xanthopicrite*.

"*Xanthopicrite* is prepared by digesting the bark in alcohol, evaporating the tincture to the consistence of an extract, acting on the extract with water and ether in succession; the residue dissolved in boiling alcohol gives crystallized *Xanthopicrite* on cooling and evaporation. It is

of a greenish yellow colour, very bitter taste, devoid of acid or alkaline properties, little soluble in water, but freely in alcohol, especially when heated. Nitric Acid gives it a red colour."

6. A remarkably fine specimen of Sulphur ore, almost equal to Sicilian, obtained from Terrepha in Walapany: it is studded and permeated with crystals of pure Sulphur.

"The mode of extracting the sulphur is, I think, understood by the Kandians, as I hear it was one of the Rajakarias or compulsory labours performed by the Kandians. I will take another opportunity of describing the Kandian process of obtaining Sulphur. I suppose it is by sublimation."

7. Iron Alum, in small lumps weighing about two drachms and less, having the characteristic satin-like minute crystals, and almost pure.

"I found the Alum at a place called Bolcadde near Badulla, on a lofty Gneiss rock which is shooting up from the centre of an extensive valley, the soil of which is clayey. The rock is about 300 feet above the level of the ground, and in a state of disintegration. A large surface of the rock presents a stratified appearance, and from the fissures I collected the Iron Alum, which occurs as an efflorescence on it. The people living near this rock say that it was struck by lightning, and since that time the Alum has appeared on it."

On dissolving the native crystal, in water, filtering and recrystallizing it, a pure white Iron Alum was procured, having the same character of crystallization as the former, but very deliquescent; its constituents are Sulphate of Iron and Sulphate of Alum.

List of Minerals presented to the Asiatic Society.

a. The Malabars call this mineral Gerbasoodamane, and it is rubbed with lime juice and applied to the umbilicus to act as a parturifacient; it is also given internally. Found in Mahatellilla oya near Dickkapitteagama.

This mineral resembles a gum resin more than a mineral. It is of a yellowish green colour, and not very brittle; its edges are somewhat translucent, and the surfaces of fracture are smooth and shining. It is not soluble in water, and but slightly acted upon by sulphuric acid. Calcination reduces it to a reddish burnt clay like substance, and it appears to be a composition of Alumina Silica and Oxyde of Iron.

b. The Singhalese call it Gandagangalle. (Sulphur stone.) Found at Bogodde near Ampitte.

This substance has externally the colour of Sulphur, dispersed through a deep and beautiful shade of green; it is very soft and when moistened is saponaceous to the feel, at the same time leaving a green colour in solution on the finger. Strong sulphuric acid dissolved it, at the same time making it a very light shade of yellow; before the blowpipe it became a black hard mass, and gave off no fumes of Sulphur whatever.

c. Found at Hewalgolla near Gallaboddaallata Yhaliwa.

Resembles marble, and is almost of as fine a grain, but not so purely white: it is Dolomite.

d. The Singhalese call this Yoda atte' (Giant's bones). According to their tradition it is the bones of two giants who fought and perished at the place where this mineral is found!

It is Limestone from deposition; it does somewhat resemble a decayed bone externally, but a slight examination determines its real origin.

e. Magnetic Iron ore.

Found at Yatte Kohila and Arrapasse on the road to Katragam.

A very fine sample of Magnetic Iron ore.

f. The Singhalese call it Nilgarrunda gal; rubbed with turmeric a *red colour* is produced; it is used as an antidote against snake bite. Found at Garrandegalle near Walapane.

A variety of tourmaline, but not of a very compact structure.

g. Found at Dickkapitteagodde.

Are large crystals of black opaque tourmaline.

h. Found at Mahatellagodde near Dickkapittea.

Is a variety of mica slate.

i. & j. Found at Arrapasse, on the road to Katragam.

Varieties of Hornblendic rock, one is of a green shade, and when treated with strong sulphuric acid, it gave off strong fumes of Chlorine.

The Secretary presented to the Society a specimen of Pyrites which he procured at the last Horticultural Show, from the Modliar of the Sina Korle, from whose district it was brought; on examination of the specimen it was found to be auriferous, though in a very small degree.

The Secretary then read a paper on the Coffee Blight, the Cotton Aphis, and some new varieties of Lac lately procured in Ceylon. The paper was ordered to be printed.

On the Coffee Blight, the Cotton Aphis, and some new species of Lac. By J. LAMPREY, M.B., Hon'y. Secretary to the Ceylon Branch, R. A. S.

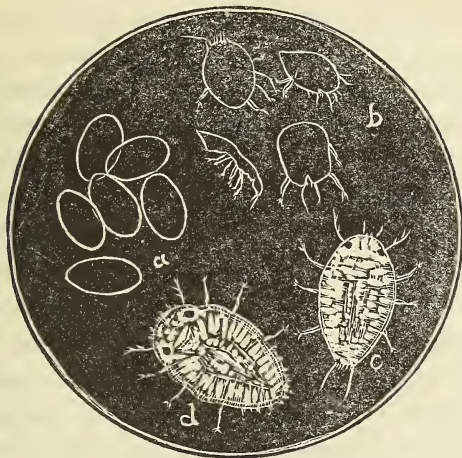
I had the greater portion of this paper prepared for publication some months past, but waited for the result of an experiment I had entrusted to a friend to make on his estate before committing it to type, as the most important portion of the information I wished to convey would not have been forthcoming till the result of that experiment was known. In the meantime, however, another person has made the experiment I suggested to my friend some months back, and, according to the statement lately published in the local prints, with the best possible result; I am now, therefore, on this testimony, able to complete that portion of the paper I was formerly in doubt about, and lose no further time in laying before the Society the account of my examination into the structure and habits of the insect causing the Coffee Blight, together with the fortunate discovery of a remedy for it I accidentally made in December 1852. I shall also take the opportunity of making a few remarks upon some allied species of insects, which are equally interesting to the Ceylon Planter; such as the White Bug, the Aphis of the Cotton plant, and some varieties of Lac lately procured in Ceylon, all which are insects belonging to the same class of Animals, and are perhaps, without exception, the most interesting of the whole Animal Kingdom, whether viewed in a purely scientific light, as beings which reveal the phenomena of life and the mysteries of instinct under the most singular aspects, or as exhibiting the fecundity, power, and resources of nature; or considered in a practical and utilitarian point of view, as beings capable of performing so much good or evil.

I shall first endeavour to describe the Scale insect or Coccus of the Coffee tree, or as it is more commonly called, the Coffee Bug, a creature so small and insignificant when examined individually as scarcely to deserve notice, but yet capable of originating most disastrous consequences, when once it has established itself on an Estate; and in short, there is no visitation to which the Coffee Planter is exposed, more dreaded, on account of the diminished crops which ensue, the injury it does to the Plantation, and the uncertainty of its disappearance; hence the study of the structure and habits of this insect, which is capable of causing so much disappointment and even ruin, cannot fail to be a matter of the deepest importance to the Coffee Planter.

If we take up the leaf of a plant thickly covered with the Bug, we find in the first place that it is of a velvet like black colour, instead of the healthy polished green; and if we thrust our hand into the Coffee bush, we find it covered with a black slimy substance; hence the dark appearance of a Coffee Estate when suffering from the Blight, and the little difficulty there is in recognising it from a distance.

If we examine this leaf minutely, we find that its black colour is due to a vegetable mould, and that the leaf-stalk and the stem are thickly studded with little lumps or eminences of a brown colour, varying in size from that of a grain of wheat to an almost microscopic object, quite hard to the feel and strongly adherent; when we detach one of the largest we find, that in doing so a quantity of impalpable dust appears to be let loose, and nothing but a hollow shell remains, but when a quantity of this dust is examined under the microscope, each particle of it is found to be a little ovum or egg, as seen in *fig. 1. a.*, or an exceedingly small and undeveloped living insect, as seen at *b*, or some of the ruptured egg shells from out of which the latter escaped. Again, if we examine one of the smaller spots on the leaf, we find that externally it bears some resemblance to the large one originally detached, though longer and flatter in proportion, and having its outer

Fig: 1.



surface divided into partitional scales; there is no appearance of legs, or feet, or antennæ, or anything to denote a living insect, but after closely watching the object a little, it is seen to put out feet and change its position, and appear an active living animal.

Some are found to differ from others in external form, as seen at *c. d.*; the former appears to be the male and the latter the female.

The female after leading a locomotive existence for a short time, at length, when she finds a suitable place, becomes fixed and adheres to the leaf or stem from which it afterwards derives its sustenance; being already pregnant, the countless eggs within its body enlarge by deriving their sustenance from their parent, and becoming hatched inside its body, consume all its internal structure, till at length, the parent becomes nothing but a hollow shield or house in which its progeny reside till sufficiently mature to go forth on their own account, which they do by merely walking out from under the edge of the scale; it now happens that a sudden change of temperature, or the accidental rubbing of one leaf or stem against another during a strong breeze, detaches a matured scale from the leaf, at the same time carrying the

dust-like ova to a distant plant, upon which they propagate their species, and are again destined to spread themselves in a similar manner. But by far the most constant mode of dispersing themselves is afforded by the close proximity of one Coffee plant to another; and although they may not be so closely planted as to touch each other, the presence of weeds upon the Estate must afford them an equally easy transit. And when it is known from the calculations of Reaumer, a Naturalist who devoted a good deal of time to such pursuits, that one Aphis, a creature about one-sixth of the size of the Bug, may be the progenitor of several millions of descendants in an incredibly short space of time, the rapid propagation of this pest may be satisfactorily accounted for.

It is during the period that the insect is in a locomotive state and for a short time after, whilst the ova are being matured, that the injury is done to the tree. Being provided with a sucking apparatus called *hostellum* by naturalists, and probably furnished with a secretion from its body, it pierces the cutis of the leaf, irritates the surface of the plant, and causes it to furnish a juice upon which it feeds; it is this irritation, coupled with the closing of the breathing pores of the leaf, whereby respiration is prevented, that causes so much injury to the plant, which literally becomes suffocated and exhausted, and all its functions impaired.

To give an idea of the ravages of this pest were almost needless; its mysterious commencement and disappearance, its attacking a particular part of an Estate and leaving the rest untouched, the various efforts that have been made to destroy it, the pertinacity with which it withstands them all, and the gradual manner in which it spontaneously disappears when left alone, are all familiar to every one conversant with Coffee planting; but with the knowledge of the structure and habits of the insect just detailed, it need no longer be a matter of wonder and surprise how an Estate becomes so rapidly or so mysteriously attacked, or why the remedies hitherto proposed should have proved inefficient; though it may still

afford extremely interesting matter for research to determine what natural agencies promote its disappearance and protect those Estates upon which it has not as yet made its appearance.

The subject of a remedy capable of counteracting the ravages of this pest of the Coffee Planters has already received much of their attention, but the plans hitherto proposed have either been impracticable, too expensive, too tedious, or altogether futile when applied. In 1848, the subject appeared of so much importance to Ceylon, that a correspondence with reference to it was entered into between the Home and Colonial Government, when Professor Lindley the eminent Botanist was consulted, and gave as his opinion that hot water, if applied directly to the Bug, would prove efficacious. All the correspondence on the subject will be found in the Government Gazette of the period alluded to. Since then, though the remedy proposed by this eminent individual was quite futile and impracticable, the subject does not appear to have had any further consideration given to it, with the exception of some casual suggestions made in the local prints, though the Blight has continued to make the same ravages as before.

My attention was accidentally drawn to this subject in December 1852. While examining the leaf of a jungle plant growing within a few miles of Colombo, I was struck by observing a large Red Ant on its under side putting himself into an extraordinary position, evidently annoyed at the intrusion, and endeavouring to shew fight, and on looking closer I saw the cause of his excitement to be a scale insect which he guarded most resolutely, at the same time making a sharp clicking noise by striking the leaf with its tail, and putting himself into most grotesque attitudes. The thought immediately struck me that he had some very interested motives for thus guarding the scale insect, and in all probability he either fed upon it, and only wanted the opportunity of tearing it from off the leaf, which his large expanded jaws appeared well capable of doing, or perhaps he fed upon the young as they

escaped from beneath the scale, or perhaps it supplied him with some nectar-like secretion.

To solve this question, I examined a Red Ant's nest, but found no satisfactory result, as the Microscope revealed no *dejecta membra* of scale insects. I next caught a few Ants on their way up and down the branches of the tree, but found no scale insects in their mouths; in this I was disappointed, but tried another means of solving the problem. I brought home a quantity of the Ants and their nest, and placed them on an Oleander tree in a compound in the Fort, but after a time I found that the Ants had disappeared, and the Bug was as numerous as ever; the reason of this I inferred from the fact that the Oleander afforded bad leaves for their protection, nor were there any more suitable trees in the same compound. Since the period of this experiment, I had been so much occupied with other pursuits and much engaged in active Military duties, that I was not able to give the subject any further attention, till about May last year, when I wrote to Captain Wilkinson of New Market Estate, stating my opinion of the efficiency of the Red Ant in removing Bug, and recommending him to make the experiment, at the same time I offered to send him a quantity of the Ants; unfortunately other matters were occupying his attention at the time, so that he was not able to attend to my note; however he mentioned the subject of it to several Coffee Planters in his neighbourhood, and others who were staying at his house at the time, who freely discussed the feasibility of the experiment.

Since then my attention has not been again drawn to the subject, though I had looked forward to further investigations at a future time, till a few days ago, when I read a statement from Mr. Young, which was published in the local Prints, setting forth that he had discovered an effectual remedy for the Bug, which he proposed keeping secret till he should receive sufficient compensation from the Coffee Planters; but in a few days after, I read the disclosure of the secret

which he published, and was very much astonished to find that the remedy he set forth was the application of the Red Ant in the manner I had suggested to Captain Wilkinson some months previous.*

* Captain Wilkinson kindly afforded his testimony to this assertion by publishing the following letter in a local Journal at the time so much discussion was about.

"To the Editors of the Colombo Observer.

New-market Estate, Pusilawa, January 29th, 1854.

SIR,—With reference to a letter concerning "the Bug" which lately appeared in your paper, I should feel obliged by your giving publicity to the fact, that as far back as May or June last, Doctor Lamprey wrote to me offering to send some nests of Red Ants to my Estate, at the same time expressing his firm conviction that he had made a discovery by which he could effectually destroy the Bug upon Coffee Estates.

I have, &c.,

N. A. WILKINSON,

Late Capt. 15th Regt."

Since this paper was read before the Society, a letter has appeared in the *Ceylon Times* of the 3d February, 1854, from Mr. Simon Keir; stating that so far back as 1851, the Red Ant was used to remove the Bug from a Coffee Estate, so that the priority of discovery contended for clearly belongs to another party.

"In January 1851, I observed the Bug disappearing very rapidly from an Estate under my charge on the Hunasgiria range, which had been overrun with it. On examining the bushes we discovered at once that the Bug was being devoured by a large Red Ant, which cleared the whole away in a very short time. I naturally thought that a cure for the Bug had at last been discovered, and took great pains in removing some of their nests to another Estate in the same district, a considerable portion of which was also covered with Bug; this Estate is about 1,000 feet higher than the one on which I first found the Red Ants, with a climate of course much damper and colder,—which no doubt accounts for my inability to see anything of the Ants but their nests the second or third day after removal to the higher Estate. But most planters of experience, I think, will admit, that if these Ants could be regularly established on our Coffee Estates, it would be a much greater calamity than the Bug itself.

An objection to the use of the Red Ant, however efficacious, has been raised on account of the well known aversion the Coolies have to go near where they are to be found in abundance; but this might be obviated by clothing the Coolies in a light cotton dress and providing them with common leather gloves which would effectually keep the ants from biting their skin, for it must be borne in mind that they do not sting but bite. At all events Red Ants ought to be more welcome visitors to an Estate than the Coffee Bug; for however numerous the former may be, they do not interfere with fruition or any other function of the plant. Again, they might be destroyed in a wholesale manner by taking their nests and burning them. Again there are other ways of obviating this objection which appear to be commonly practised by the Singhalese whenever Red Ants become troublesome; the first method is as follows. They collect a quantity of large Black Ants, called *ambilere* in Singhalese, they are about the size of the Red Ants called *dimia* in Singhalese, but are shorter and thicker, they are perfectly harmless and build also in trees, and are different from the large Black Ants which are to be found running in lines across a road or pathway, whose bite is even more painful than that of the Red Ant, and having placed a few of their nests in a tree frequented by the Red Ant, the latter are most expeditiously dispersed.

Another mode is commonly practised by which the Red Ants

From the Plantation first alluded to, they disappeared as soon as they had finished the Bug, or to all appearance had done so; but we had hardly lost sight of the Ants, when I regret to say the Bug came back again; it seems, however, now to be leaving the Coffee districts of its own accord, and I hope it will not be long before we can reckon it 'amongst the things that were.'

Your's truly,
SIMON KEIR."

"P. S. I ought to have mentioned that the elevation of the Estate where I found the large "Red Ants" is about 2000 feet, and that of the Estate to which I removed them 3000, or 3,500 feet above the sea."

are effectually destroyed *en masse*. If the carcase of a small animal, such as a bird, a rat, or if their skin or entrails be laid on a tree or underneath it where the Red Ant abounds, it will soon be covered by them in considerable quantity, as they are very partial to animal food, when they can be destroyed by pouring hot water over them.

There are also several other insects which appear to be equally destructive to the Bug, though perhaps none of them could be so easily applied as the Red Ant, viz. there is a beautiful variety of the *Coccinella*, called the gold fly, to be met with in great abundance on the low bushes about Colombo, also a larger variety of the same insect, of a beautiful green colour spotted with black, which is equally destructive to Aphides; and I have the opportunity of laying before you a Lady-bird I caught flying in my verandah yesterday morning, which appears to be identical in size, form, and colour with the same insect which is so highly respected by the Hop growers of England for the benefit it confers upon the Hop gardens.

There is another variety of *Coccinella* more active and more industrious in his habits than the others, which I have recently observed to be very abundant in the Hill country. It is a very small insect, about one-third of the size of the common Lady bird; its colour is black with a white margin extending around the outer edges of the *elytra*.

The application of any solution to destroy the Coffee Bug, must, I fear, judging from the structure of the insect, be altogether futile, unless they be of such a strongly corrosive nature as to prove destructive to the tree as well.

There is one remedy, however, of this class which appears to be less objectionable than the others, and that is the application of some of the essential oils. I mention it on the authority of Davis, who states that the Chinese use an essential oil to destroy a Bug which affects the Tea plant.

The best preventative to the occurrence of the Bug, judging from the analogy which the Animal Kingdom affords,

is to keep the plants in a healthy vigorous condition by proper manuring, proper tilling of the soil, and proper pruning. It should be borne in mind also, that it is not the Coffee plant which alone gives sustenance to the Bug; it will be found on mostly all plants of the jungle, and especially those of a succulent nature, which should be carefully removed from the vicinity of a Plantation.

The White Bug.

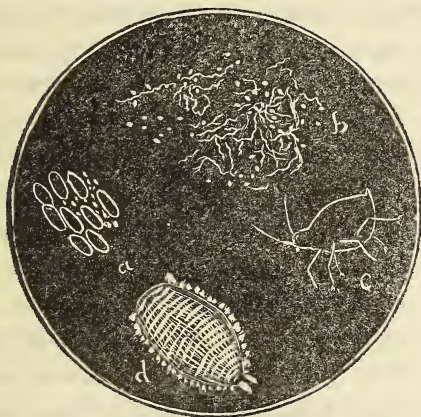
There is a Coccus possessing similar characteristics with the last described, but having gigantic proportions in comparison with it; it may be named the White Bug from its colour. I found the first example I have seen upon a Bullock's heart tree (*Annona reticulata*) growing in a garden not far from the Fort, and though there were but few of them to be found on the tree, they have had the effect of retarding its growth in a remarkable manner, and causing it to produce very abortive fruit. Its outer surface is rather square shaped, and instead of being smooth, like the last, it is ridged and grooved in a perpendicular direction:—on detaching one from the branch, the same dust-like substance was scattered about, which on examination proved to be the ova of the insect. It is a fortunate circumstance that this insect is not so universally found as the former, as it appears to be much more injurious to vegetation than the Coffee Bug.

Cotton Aphis.

The next insect I have to describe is the Cotton Aphis, which appears to be altogether a different variety from the other members of the same family, and not altogether confined to the Cotton plant.

I found an example on a Cotton plant growing in a very confined locality and in an extremely rich soil; the accompanying engraving will explain the difference of appearance between this and the last two insects. They are easily recognised on the plant by the white wool like substance with which they are covered, and on removing this, they are to

Fig: 2.



be seen moving about and in all sizes, from an almost invisible object to a size about the one-sixteenth part of an inch in length, this wool-like substance marked *b. fig. 2.* seems to be a vegetable mould, and is one of those wonderful provisions of nature serving as a means of protecting the insect from the various enemies to which it is exposed.

On opening an impregnated female and examining the inside of its body, ova in large quantities are to be seen as at *a. fig. 2.* The form of the male *c. fig. 2* appears to differ considerably from the female *d.* and seems to be deficient in wings.

I found a number of small Black Ants on the tree on which I procured the Aphis, but soon ascertained that they fed upon a nectar produced by the Aphides. I have no doubt that if this insect proves a serious obstacle to the Cotton Planter, the large Red Ant would again prove a useful exterminator.

Lac.

In the proceedings of the last Evening Meeting of the Society, a sample of Lac from the Badulla District, contributed by Mr. Ondaatje, was noticed; from that sample I have succeeded in obtaining its two valuable products by a simple

chemical process, namely dissolving the crude Lac in an alkaline solution, separating the impurities by filtration, and afterwards precipitating the Shellac with an acid, and then evaporating the solution so as to obtain the dye. I have thus succeeded in obtaining Shellac and Lac dye; the former, a sample of which I now lay before the Society, though of a dark colour is not inferior to the Shellac of commerce; and the latter, though inferior to carmine, the product of the Cochineal insect, might be made a useful purple dye.

I have also received a sample of Lac from the Chilaw district, differing from the former in many particulars, and I conceive it to be a "new species." It is almost transparent, in single rounded and isolated cells, and yields a light coloured Shellac, but no dye; which, however, may be owing to the escape of the ova.

I have also procured a specimen differing from the two former ones, which I procured at the Horticultural Exhibition held the other day at Colombo; it is not so rounded in outward form, though existing in separate cells, and it contains a yellowish mass of a rich orange colour, which is not affected by Sulphuric acid, and which might be prepared in a manner similar to the purple dye. On examining this yellowish mass under the microscope, it appeared to consist exclusively of ova, and we now have the opportunity of seeing "the first appearance of the young Lacs in public." You observe a number of very minute creeping insects which appear all over the stick, bearing a close resemblance to the Cochineal insect in their outward form: thus shewing that it would not be a difficult matter to propagate the species; the tree upon which they are found grows freely in the Sina Korle, it is called *Kapitia* by the Singhalese.

I have observed on the same branch on which I found this Lac, a number of minute spots of a stellate character, having six rays; this appears to be the commencement of the cell of the future insect.

I also observed a quantity of indurated black substance

similar to the *Kaddepas* sent to me for examination by Mr. Ondaatje, which appears to be the result of the destruction of the Lac insect by some Ichneumon fly.

There are several other varieties of this class of insects to be found in Ceylon, some of which are as conspicuous for their extreme beauty, as others are for their strange forms; but I shall now conclude, hoping that on another occasion I may have the opportunity of describing a few more of this very interesting class of animals.

After this paper was read, much discussion ensued, Mr. De Alwis stated that it was well known to the Singhalese generally that the Red Ant was a good destroyer of the Bug, and was constantly employed by them for that purpose; he also stated in corroboration, that as far back as 1848, he had a delicate plant in his garden which was much injured by Caterpillars, and tried various modes of getting rid of them by ashes, washing, &c., but all to no purpose; at length a Singhalese man counselled him to put a few nests of Red Ants in the tree, which he did, and they soon destroyed the Caterpillars.

The Chairman (Mr. Armitage) mentioned that while giving to Dr. Lamprey all credit due to the priority of discovery as to the mode of destruction of the Bug by the Red Ant, he thought that Mr. Young was also entitled to the merit of originality. It often happened that when an important discovery was made, other minds were on the same track, and were thus entitled to high credit, though the chief credit devolved on the one who was first in the path.

Consequent on Mr. Young's advertisement, he, Mr. A. himself had been making some experiments with a view to the destruction of the Bug, on an orange tree in his garden, and was about to apply some Coal Tar to the stem of the tree, when he was told by his Appoo that it was *unnecessary*, as the Red Ants were already destroying the Bug; he was accordingly watching the process when publicity was given

to the plan of Dr. Lamprey and Mr. Young. Mr. Armitage concluded by expressing a wish that Dr. Lamprey's paper would be published, as it might be the means of stimulating further investigation into most important subjects.

Proposed by Mr. Dawson and seconded by Mr. Alwis, that Mr. Justice Starke be made an Honorary Member of the Society.

Resolution.—"That as a mark of the high respect entertained by the members of this Society towards the Hon'ble Mr. Justice Starke, who has recently returned to England, he be elected an Honorary Member of this Society; that the Journals of this Society be regularly sent to him gratis, and that the Secretary be instructed to write to Mr. Starke expressing the feeling of the Society, and forwarding to him a copy of this resolution." Carried unanimously.

Proposed by Mr. Dawson, and seconded by the Rev. Mr. Kats.

"That during the absence of Dr. Lamprey in Kandy, Mr. Alwis be requested to act as Assistant Secretary."

J. LAMPREY, M. B.

Hony. Secretary.

COMMITTEE MEETING, HELD JUNE 3D, 1854.

Present.—J. B. Misso, Esq., in the chair; Messrs. R. Dawson, W. Skeen, M. Coomarasamy, L. De Zoyza, and the Assistant Secretary.

Mr. Dawson laid before the Meeting the accounts of the Society, and requested to be relieved of the trust reposed in him as Treasurer, he being about to quit the Island.

Moved by Mr. De Zoyza, and seconded by the Assistant Secretary.

“That the thanks of this Society be presented to Mr. Dawson for his kind and valuable services as their Treasurer.”

Moved by Mr. Dawson, and seconded by Mr. Coomarasamy.

“That Mr. Skeen be requested to act as the Treasurer of this Society.”

Mr. Skeen having intimated his willingness to undertake the duties of Treasurer, the accounts, papers, &c., were handed over to him by Mr. Dawson.

Read the following correspondence :

*Colonial Secretary's Office,
Colombo, 13th February, 1854.*

SIR,

I am directed by His Excellency the Governor to transmit to you a copy of the Official Catalogue, the Jury Reports, the Reports of the Commissioners, and a case containing the Prize Medals of the Exhibition of 1851, the same having been presented to the Island of Ceylon by Her Majesty's Commissioners for the Exhibition of 1851.

His Excellency sends the work to the Asiatic Society as the most public body connected with literature in the Colony.

I have &c.,

P. W. BRAYBROOKE.

The Secretary of the

Ceylon Branch Royal Asiatic Society.

*Ceylon Branch Royal Asiatic Society,
Colombo, 14th February, 1854.*

SIR,

In acknowledging the receipt of your letter of the 18th instant, communicating His Excellency the Governor's decision to transmit to the Ceylon Branch of the Royal Asiatic Society the Jury Reports, the Prize Medals of the Exhibition of 1851, &c. I have the honor to request you will direct that the same may be sent to me, and to state for the information of His Excellency the Governor that they will be open for public inspection at the Society's Rooms, from 11 A. M. till 3 P. M. on

week days.—I may perhaps also state here that it would be desirable that a public notification to the effect that the above Reports &c., are open for public inspection should be published in the Government Gazette.

I have, &c.

JAMES ALWIS,
Asst. Secy.

The Hon'ble

The Colonial Secretary.

Resolved.—That the Secretary be authorized to have covers made for the Books forwarded by Government; and that they be kept at the Society's Rooms for public inspection from 11 A. M. to 3 P. M. on week days.

Resolved.—That the proceedings of this Meeting be published for general information.

The Secretary laid on the table the following books received since the last meeting.

5 Nos. of the Annals and Magazine of Natural History.

2 Nos. of the Journal of the Indian Archipelago.

Copy of the Report of the Government Central Museum.

JAMES ALWIS,
Asst. Secy.

MEETING HELD AUGUST 17TH, 1854.

Present.—Messrs. C. P. Layard, J. B. Misso, W. Skeen, L. De Zoyza, and the Secretary.

The Secretary laid before the Meeting, as the principal object for which it had been convened, a letter from Government dated the 7th August, 1854; enclosing copy of a Despatch received from the Secretary of State with reference to the Paris Universal Exhibition of 1855. Also, a portion of the third part of the Society's Journal for 1853-4 in course of

publication; and the following works received since the last General Meeting, viz:—

Journal of the Bengal Asiatic Society, No. ccxix.

2 Nos. of the Journal of the Indian Archipelago.

2 Nos. of the Annals and Magazine of Natural History.

The Secretary also laid on the table for the use of the members, a number of copies of the Despatch of the Secretary of State with reference to the Exhibition of 1855.

*Colonial Secretary's Office,
Colombo, 7th August, 1854.*

SIR,

I am directed to transmit to you the enclosed copy of a Despatch received from the Secretary of State, on the subject of the Universal Exhibition of Agricultural and Manufacturing Products to be held at Paris on the 1st of May 1855, and to request that you will be good enough to take measures for the formation of a Committee for furthering the objects therein contemplated, reporting to me, for the information of His Excellency the Governor, the names of the Gentlemen who may be selected as Members of the Committee, and any other steps which may be taken by you in the matter.

I have, &c.,

P. W. BRAYBROOKE.

*The Secretary of the
Asiatic Society.*

*Ceylon Branch Royal Asiatic Society,
Colombo, 23rd September, 1854.*

SIR,

With reference to your letter of the 7th August last, requesting that measures might be taken for the formation of a Committee for furthering the objects of the Universal Exhibition to be held at Paris on the 1st of May 1855, I have the honor to state, that in consequence of the removal by death and other causes, of several members of this Society, it has not been practicable to form a Committee such as you desire; but I am directed to state that this Society will have much pleasure in affording all the assistance in its power towards the carrying out of the object contemplated in the Despatch of the Secretary of State, of which you have forwarded to me a copy.

I have &c.,

JAMES ALWIS,
Asst. Secy.

*The Hon'ble
The Colonial Secretary.*

Plan of the Temple of Chittreweylader Cowille, in the District of Mulletivoe or the Wanny. Communicated by C. S. VANDERSTRAATEN, ESQ.

1. Sandana Mandapam; the front room of the Temple where the band and principal men assemble in times of festival.

2. Mahamandapam; here the Brahmins and ordinary priests remain during the ceremony.

3. Artha Mandapam; the place for performing oblations before the Idol in room No. 4, by the High Priest and his attendants.

4. Ketpakraham: the room where the Idol Chittreweylader is placed: being considered most holy it is accessible only to the High Priest.

5. Yagasaale; the place for burnt offerings.

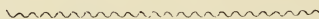
6. Mandapam; the hall where the Idol is placed, previous to its being carried on in procession.

7. Kabeda; the store room.

8. Madapally; the kitchen.

9. Temple of Tanday Soorer. This deity is sentinel to Chittreweylader.

10. Temple of Pulliar, the elder brother of Chittreweylader.

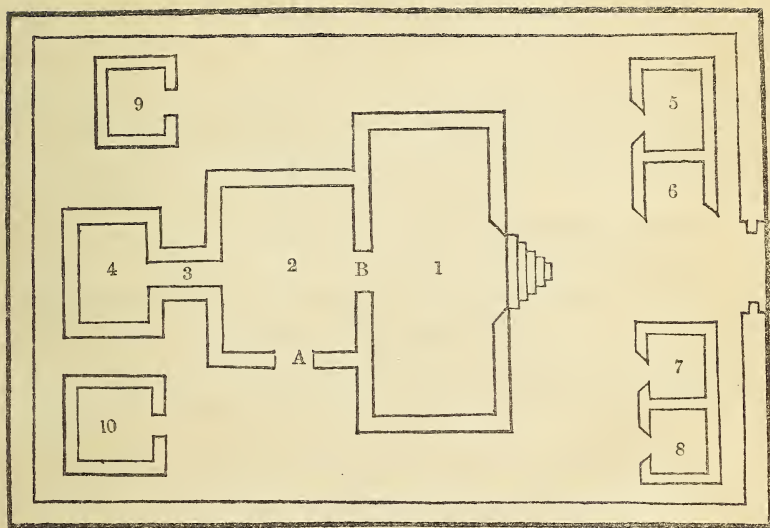


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RULES AND REGULATIONS.

[*Mem.*—The Asiatic Society of Ceylon was instituted 7th February 1845; and by the unanimous vote of a Special General Meeting of the Royal Asiatic Society, held on the 7th February 1846, it was declared a Branch of that Society, under the designation of the Ceylon Branch of the Royal Asiatic Society.]

1. The design of the Society is to institute and promote enquiries into the History, Religion, Literature, Arts and Social Condition of the present and former inhabitants of this Island, with its Geology and Mineralogy, its Climate and Meteorology, its Botany and Zoology.

2. The Society shall consist of resident or ordinary, honorary and corresponding Members; all elected by ballot at some General Meeting of the Society.

3. Members residing in any part of Ceylon are considered resident.

4. Persons who contribute to the objects of the Society in an eminent and distinguished manner, are eligible as honorary Members.

5. Persons residing at a distance from Colombo may, upon special grounds, and with the recommendation of the Committee, be elected corresponding members.

6. Honorary and corresponding members shall not be subject to any fee on entrance, or any annual contribution, and are to be admitted to the meetings of the Society and to the privilege of the Library, but are not to vote at meetings, or be elected to any of its offices, or take any part in its private business.

7. Every ordinary Member of the Society shall pay on admission a fee of half a guinea, and an annual subscription of one guinea.

8. The Office-bearers of the Society shall be, a President, Vice-President, Treasurer and Secretary, with a Librarian, Curator of the Museum, and Conservator of the Meteorological and other scientific instruments of the Society:—all appointed from time to time by open vote at some General Meeting of the Society; and their functions shall be as follows:—

[1.] The President, and in his absence the Vice-President, shall take the Chair at all meetings of the Society and of the Committee, maintain order, collect the votes, and cause the laws of the Society to be observed and enforced.

[2.] The Treasurer shall receive, collect, and pay out all monies on behalf of the Society, keep an account thereof with the vouchers, and submit a statement of the pecuniary affairs of the Society to the Anniversary Meeting, and at other times as may be required.

[3.] The Secretary shall arrange, give notice of, and attend, all meetings of the Society and of the Committee, and record their proceedings; he shall also edit the Journal, and exercise a general superintendence under the authority of the Committee.

[4.] The Librarian, Curator of the Museum, and Conservator of the scientific instruments belonging to the Society, will take charge of the books and other articles committed to them respectively, keep a correct list thereof, and generally conform in their management to the Rules of the Society in that behalf, or in the absence of such, to the directions of the Committee; having respect at all times to the safety and proper condition of the articles, and to the interests of the Society in their increase and improvement: The Curator of the Museum, in particular, taking care to superintend the reception of all articles in that Department, transmitted to the Society, and have the same speedily submitted to examination and reported on, and suitably arranged.

9. The affairs of the Society shall be managed by a Committee of five Members in addition to Office-bearers, elected in like manner; but subject always to the Rules and Regulations passed at General Meetings; three to be a quorum.

10. Any person desirous of becoming a Member of the Society, must be proposed and seconded by Members personally, or by letter under the hand of such Members, at some General Meeting of the Society, and be elected by ballot at the next General Meeting; none to be considered as elected, unless he has in his favour two-thirds of the votes given.

11. A General Meeting of the Society shall be held Quarterly, namely on the 7th day of February or first lawful day thereafter, and in the first week of the months of May, August and November, and at such other times as may be determined by the Committee: due notice of the Meeting, and of any intended motion which does not come through the Committee, except the nomination of new members, being always first given by the Secretary.

12. All papers and other communications to the Society shall be read and submitted at a General Meeting by some Member of the Society, except in the case of communications from individuals not Members; when, if the meeting think fit, the same may be read by the author.

13. All Papers and other communications to the Society read or submitted at any General Meeting, shall be open to free discussion; and no paper read shall be printed in the Transactions of the Society (unless by a special vote it be otherwise determined), until the meeting next after that on which it was read, when it shall be decided on the report of a Committee or by distinct vote, whether it shall be printed in the Journal of the Society, or be kept among its records, or returned to the author: the vote to be by ballot.

14. The course of business at General Meetings shall be as follows:—

- (1.) The Minutes of the last Meeting shall be read by the Secretary, and signed by the Chairman.
- (2.) Reports of Committees shall be read, and communications made of all articles received, and donations to the Society.
- (3.) Any specific or particular business submitted by the Committee or appointed or open for consideration, shall be proceeded with.
- (4.) Candidates or new Members shall then be proposed, balloted for, or admitted as the case may be.
- (5.) Papers and Communications for the Society shall then be read.

15. Special Committees may be formed for the prosecution of any specific object or matter of research, but these must be named at a General Meeting; and they will act as much as may be in co-operation with the Secretary of the Society, who will also be a constituent Member of all such Committees.

16. Every Member of the Society has the privilege of introducing either personally or by a card, one or two visitors to the General Meetings.

17. Evening Meetings shall be held once a month, or at other times as may be arranged, for discussion on papers read, or to be read at General Meetings, (such papers however not necessarily being before the Meeting,) the mutual improvement of the Members, and the promotion of the objects and advancement of the interests of the Society.

RULES OF THE LIBRARY.

1. All books borrowed from the Library shall be duly entered in the Receipt Book, with the date of giving out, and the date of the return.

2. No book to be written on, or injured in any respect whatsoever, and every book borrowed shall be returned in proper condition, as received.

3. The period for which books borrowed may be kept shall be as follows:—

[1.] Periodicals, and numbers or volumes of a series, while they remain unbound for 14 days only, and no more.

[2.] Other books for 3 weeks, unless in the case of persons resident out of the district of Colombo: in which case they may be retained for 6 weeks, and no more. But

[3.] All books borrowed, of whatsoever description the same may be, shall be returned to the Library one week at least before the 7th February in every year,—that pamphlets and serials may be bound up, and the Catalogues corrected; and that a proper Report on the state of the Library may be prepared for the Anniversary Meeting.

4. Dictionaries, and works of reference, or of especial rarity or value, do not go out: they remain in the Library for use or inspection; and Periodicals lie on the table for one Week.

5. All works in the Library, or on the table of the Society, may be seen and consulted by Members, and also by others properly recommended, with the leave of the Librarian or of his assistant under his direction.

THE MUSEUM.

No article under the charge of the Curator of the Museum, or of the Conservator of the scientific instruments belonging to the Society, shall be moved or touched but by the Curator and Conservator respectively, or their assistants under their express direction.

CATALOGUE OF THE BOOKS.

A.

- Asiatic Researches, Vols. 13 to 20, both inclusive. 8 Vols. 4to. with Index.
From the Asiatic Society of Bengal.
- Auber's British Power in India, 2 Vols. 8vo.
- Agriculture, Journal and Transactions.
- Annals of India, By Dr. Buist.
- Anurajapoorā; some additional remarks on the ancient city of, By Capt. Chapman. *Donation from the author.**
- Arabic and Persian Poetry, specimens of, 1 Vol. 8vo.
- Atmospheric Railway, pamphlet by James Pim, 1842.
- Astronomy, Bentley's Historical views of the Hindoo, 1 Vol.
- Archipelago, Indian and Eastern-Asia Journal.
- Africa, Park's Travels in, 1 Vol. 8vo.
- Artesian Wells, pamphlet on, By Dr. Kelaart. *From the author.*
- Alwis's Sidat' Sangarawa, or Singhalese Grammar, with Introduction, Notes and Appendices.
- Asiatic (Royal) Society, Journal.
- Asiatic (Royal) Society, Rules, &c.
- America. See also Smithsonian Institution.
- American Institution for the advancement of Science. Proceedings of Fourth Meeting, August, 1850.
- Asiatic (Royal) Society, Transactions.
- Asiatic (Royal) Society. The Primary Discourse, by H. T. Colebrooke, Esq., and Index to the three Vols. of Transactions and eight Vols. of the Journal, bound in 1 Vol.

B.

- Bible, The Holy, in Singhalese.
- British Empire, The, By MacCulloch, 2 Vols.
- Birds. By W. Swainson, 2 Vols.
- British Moths and Butterflies, 2 Vols.
- Botany. By Moon, 1 Vol.
- Bengal Asiatic Society, Journal.
- Bengal Criminal Statistics. 1 Vol. 4to.

* Note. See previous notice of Anurajapoorā, Transactions of the Royal Asiatic Society, Vol. 3, p. 463.

- Bombay Branch of Royal Asiatic Society, Journal.
Bombay Geographical Society, Transactions.
Bennett's Ceylon.
Buist's Dr. Annals of India.
Batavian Society of Arts and Sciences, 12 Vols. of the Transactions in Dutch, presented by the Society, with a translated Index of Contents, by the Rev. J. D. Palm.
Boetticher, Paulus, Rudimenta Mythologiæ Semiticæ Supplementa Lexici Aramaici.
Blue Books.
Bibliotheca Indica. By Dr. E. Roer. *From the Asiatic Society of Bengal.*
Callaway's Singhalese Poems.
Cashmir, History of.
Cabinet Cyclopædia.
Criminal Statistics of Bengal.
Ceylon Magazine, 1 Vol.
Ceylon Gazetteer, By S. C. Chitty, 1 Vol. 8vo.
Christa Sanghita, The first five Chapters of, translated into Singhalese 1 Vol. 8vo. *From the Rev. J. F. Haslam.*
Chinese Language, Dissertation on its characters and sounds, 1 Vol. 4to.
Ceylon, History of. By W. Knighton, Esq., 1 Vol. 8vo. *From the author.*
Calcutta Review, from commencement.
Ceylon, Account of, Percival's, 1 Vol. 4to.
Ceylon Calendars, 11 Vols.
Ceylon, view of, Bertolacci, 1 Vol. 8vo.
Ceylon, Description of, Cordiner's, 2 Vols. 4to.
Ceylon, Account of, By Davy, 1 Vol. 4to.
Ceylon, Eleven years in, By Major Forbes, 2 Vols.
Colebrooke's Essays, 2 Vols.
Ceylon Almanacs from 1818, 20 Vols.
Ceylon, Turnour's Epitome of the History of, translated into Tamul. By S. C. Chitty.
Ceylon, Ribeyro's History of, translated by George Lee, Esq., 1 Vol.
Chinese Novels, By Davis, 1 Vol.
Ceylon, Campbell's Field Sports of, 2 Vols. 8vo.
Ceylon, Reports on the Financial Condition of.
Ceylon Blue Books.
Ceylon, Bennett's.
Coin, Russian, pamphlet on, By Hawkins.
Chodzko, Specimens of the popular Poetry of Persia.
Ceylon Asiatic Society, Journal.
Cape of Good Hope, Magnetical and Meteorological Observations made there. *Presented by His Excellency Sir Geo. W. Anderson.*
Cinnamon Trade of Ceylon, pamphlet by J. Capper, Esq. *From the author.*
Catalogue of Oriental Manuscripts at Hartwell house.

D.

- Dictionary, Richardson's Persian and Arabic, 1 Vol. 8vo.
 Dictionary, Malabar and English, By Fabricius and others, 2 copies.
 Dutch, *vie des Gouverneurs des Etablis. Hollandois aux Indes*, 1 Vol. 4to.
 Dictionary, Rottler's Tamul and English, 1 Vol.
 Diamonds, A Treatise on, 1 Vol.
 Dakota Language, Dictionary of. See Smithsonian contributions, Vol. 4.

E.

- Essay on the Human Mind.
 Electrical Magazine.
 Eastern Traveller's Interpreter.
 Eastern Nations, Dissertation on their language, literature, and manners,
 By Richardson, 1 Vol.

F.

- Friend, The (of Ceylon), 5 Vols. 12mo.
 Flora of Ceylon, By Dr. Gardner.
 Flora Calpensis, By Dr. Kelaart.
 Fa Hian, Pilgrimage of, 1 Vol. *From the editor and translator, Mr. Laidly.*
 Fishes, Frogs, and Reptiles, By Swainson.

G.

- Goolistan, or Rose garden of Sadi, 1 Vol. 8vo.
 Greenwich Magnetical and Meteorological observations.
 Geological Map of England.
 Geological Society of London, Journal of.
 Grammar, Persian and Arabic, *From J. E. Middleton, Esq.*
 Geographical Society of Bombay, Transactions.
 Geographical Society of London, Journal.
 Gullimore's Oriental Cylinders, No. 2.

H.

- Hadley's Grammar of the Moors.
 History of Trade in the East and West Indies.
 Hand Book for India and Egypt, 1 Vol.
 History of the Naga Tribes.
 Hindostanee Grammar, By G. Hadley, 1 Vol. 8vo.
 Hindostan, Pennant's, 2 Vols. in 1, 4to.
 Hindustani Grammar, Shakespear's, 1 Vol. 4to.
 Hindostan, Maurice's Ancient History of, 2 Vols.
 Hindoo Literature, Kindersley's, 1 Vol.
 Hoffmeister's Travels in Ceylon and India, 1 Vol.

Heber's (Bishop) Indian Journal, 2 Vols.

Hobart Town, Meteorological Observations made there. *Presented by His Excellency Sir Geo. W. Anderson.*

Harvard's Missions in Ceylon and India.

I.

India, Penal Code of, 1 Vol. folio.

Indies, History of Trade in East and West, 4 Vols.

Indes Vie des Gouverneurs des Etablis. Hollandois aux. *From Geo. Lee, Esq.*

J.

Journal of Asiatic Society of Ceylon.

Journal of the Ceylon Branch of the Royal Asiatic Society.

Jamblichus, De vita Pythagoræ, 1 Vol. 4to.

Japan, History of, By Kempfer, 2 Vols. folio.

K.

Kindersley's Hindoo Literature, 1 Vol.

Knighton's History of Ceylon, 1 Vol. 8vo.

Kelly's Oriental Metrology, or Weights and Measures of India, 1 Vol. 8vo.

L.

Lanka Nidhana, 4 Vols. 12mo.

Lassen's Bactrian Coins.

Logic, the utility of the Aristotelean, By W. Knighton, Esq., 1 Vol. *From the author.*

M.

Map, Geological of England.

Milburn's Oriental Commerce, 1 Vol. 8vo.

Magnetical and Meteorological Observations at Greenwich, Cape of Good Hope, Hobartton, Toronto.

Magazine, Electrical.

Mill's British India, By Wilson, 8 Vols.

Madras and Bombay, Dissertation and Enquiries connected with, pamphlet.

Medical and Physical Science in India, Journal.

Meteorological Society, Transactions of.

Mahawanso, The, By Turnour.

Metrology, Oriental, Kelly's, 1 Vol.

Moon's Catalogue of Plants growing in Ceylon.

Malcolm's (Sir John) History of Persia, 2 Vols. folio.

Moths and Butterflies, British, 2 Vols.

Missions to Ceylon and India, Narrative of.

- Mind, Human, Essay on, By the Rev. G. R. Muttukistna.
MacCulloch's British Empire, 2 Vols.
Memoir of Dr. Quint Ondaatjie, (formerly of Ceylon) Councillor of the
Supreme Court of Justice of Netherlands India.
Malabar and English Dictionary, Vepery, 1786.

N.

- Naturalist's Library.
Novels, Chinese, By Davis, 1 Vol. 8vo.
Naga Tribes, History of the, 1 Vol.
Numismatic Chronicle.
Neptune, Report on the discovery of the Planet, to the Smithsonian
Institution.
Numismatic Society, proceedings for 1836, 1837, 1838-39.
Natural History, Annals and Magazine of.
Natural History, Directions for preparing specimens of, pamphlet 1852.

O.

- Observations during Magnetic Disturbances.
Orientalist's Guide.
Oriental Metrology, Kelly's, 1 Vol.
Observatory at Toronto, Observations there.
Observatory at the Cape of Good Hope, Observations there.
Observatory at Hobartown, Observations made there.
Ondaatjie, (Dr. Quint) Memoir of.

P.

- Pali Grammar, Clough's, 1 Vol. 8vo.
Persian Language Vocabulary, 1 Vol. 8vo.
Pennant's Hindostan, 2 Vols. bound in one, 4to.
Parbury's Hand Book for India and Egypt.
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Ruell's (Rev. J.) Singhalese Grammar, written in Dutch and published in Holland in 1699, with the Singhalese characters in wood-cuts.

From the Rev. S. D. J. Ondaatjie.

Rig Veda Sanhita, 1 Vol. 4to.

Ribeyro's History of Ceylon, translated by Geo. Lee, Esq., 1 Vol.

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S.

Seeravankinde Puranam, (in Tamil) 1 Vol. *From S. C. Chitty.*

Smithsonian Institution Contributions to Knowledge.

Simmond's Colonial Magazine.

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Statistical Society of London, Journal of.

Smithsonian Institution, Annual Reports of the Board of Regents for 1849 and 1850.

Smithsonian Institution, Report on the Discovery of the Planet Neptune.

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Skeen, Lecture on Typography.

Swainson's Birds, 2 Vols.

Swainson's Taxidermy and Biography, 1 Vol.

Swainson's Fishes, Frogs, and Reptiles.

Smithsonian Institution, Notices of Public Libraries in America.

Sidat' Sangarawa, or Grammar of the Singhalese Language, with Introduction, Notes, &c., By James De Alwis, 1 Vol. 8vo. *From the translator.*

T.

Tootee Namu, Persian Tales, translated into Hindoostanee.

Taxidermy, By Swainson, 1 Vol.

Tamil and English Dictionary, Rottler's, 2 Vols. 4to.

Turnour's Epitome of the History of Ceylon, translated into Tamil by S. C. Chitty.

Tamul Flora, By S. Chitty.

Thring's Colonies of Great Britain, pamphlet.

Typography, Lecture on, By W. Skeen, Esq.

V.

Vaccination, on the advantages of, By Dr. Kinnis.

Valentyn's Voyages, 4 Vols. folio, *from Dr. Gygax.*

W.

Wilson's (The Rev. Dr.) Doctrines of Jehovah, pamphlet.

Wallace's Memoirs of India, 1 Vol.

ETHNOGRAPHICAL COLLECTIONS.

(a.) *Models and Specimens illustrative of the Arts.*

Seven Models of Native Boats, used in the trade and fisheries of the Island. *From J. Capper, Esq., viz;*

A yatra dhoney, or sailing vessel.

A padé or flat-bottomed boat.

A fishing padé boat.

A fishing canoe.

Another canoe or balama.

A Maldivé vessel.

A boat used by the Malabars.

An ulkатуwa panhinda, or iron style for writing on the ola leaf.

Various specimens of Cloth from different parts of the Island.

Specimens of Vegetable fibre for cloths and cordage.

Specimen of the Riti Gaha, the Halgas or pole tree, and of the Sack made from the inner bark, as used by the natives.

Specimens of Dye Stuffs, and of the Madder plant, with specimens of dyed Cloth.

Specimens of Oils, Gums, and Resins.

(b.) *Models, Prints, and Drawings illustrative of the scenery, places, buildings, and local usages.*

Various Views of Adam's Peak, Ratnapoora, &c.

Plan of the Ruins of Pollanuwera.

Inscriptions.

There are several Inscriptions in the possession of the Society, taken from Temples, stone slabs, &c. They are in course of arrangement.

CABINET OF COINS.

The Society had early in view the formation of a cabinet of coins,—which are always interesting as specimens of art, and valuable as documents; and the collection is not undeserving of attention. It is in course of arrangement.

THE WOODS OF CEYLON.

A case containing eight dozen specimens of the woods of Ceylon, was presented to the Society by *A. Mendis, Mohandiram*, with a catalogue of their names, specific gravity, uses, and durability; and various other specimens of woods have been presented by *John Capper, Esq., and others*. The whole of these have been referred to a special Committee to collect them together, and make a Report on their number, description, character, and economical uses, with suggestions in regard to their future custody and inspection.

THE MUSEUM

Contains a specimen of the Oona hapooloowa or loris.

Some specimens of Birds.

Specimens of Lizards, Serpents, and other Reptiles.

Some specimens of Fishes.

Specimens of Crustacea.

Specimens of Beetles; including the කුරුමිනියා or cocoanut beetle, described in Mr. Capper's paper on the ravages of that insect. C. A. S. J., I. 49.

There was also a case of Butterflies. *From J. P. Green, Esq.*

Specimens of the Pearl oyster. *From James Stewart, Esq.*

A box of Shells. *From T. Morgan, Esq.*, and various other specimens of Shells, not yet arranged.

Various specimens of Corals and Sponges. *From J. N. Mooyaart, Esq., and others.*

The Minerals and Geological specimens collected by Dr. Gygax in the Saffragam District, forming a large and valuable collection. *Presented principally by Government.*

In this general collection, there are about 100 specimens of

Rock Crystal
Hyalithe
Amethyste
Quartz
Zircon
Tourmaline
Disten
Beryl
Epidote
Hornblende
Mica
Garnet
Spinel
Corundum
Chrysoberyl
Topaz
Apatita
Feldspar
Binnerite
Wolfran

Rutil
Pyrochlor
Ilmenite
Titan ore
Arsenite of Nickel
Hematite
Arsenite of Kobalt
Tin ore
Chromate of iron
Chrom. ochre
Molybdena
Iron pyrite
Iron glance
Magnetic iron ore
Iron ochre
Bog iron ore
Anthracite;—with about as many Geological or Rock specimens from the same District.

A collection of specimens illustrative of the Geology of Newera Ellia. *From Dr. Kelaart.*

Other specimens of Rocks and Minerals from other parts of Ceylon; including a specimen of Ceylonite, *from Lieut. Henderson, C.R.R.*

Specimens of Iron-ore from the Matura District.

Specimen of Iron found at Galle in digging a well. *From Mr. G. Goonewardene.*

Some Iron pyrites. *From C. Whitehouse, Esq.*

Specimens of Fossils. Dr. Kelaart says, "The Limestone in which the Ceylon fossils are imbedded, is of a very compact and pure form. In one hand specimen we observed a fossil phalange about an inch in length, apparently of a large Saurian reptile. This unique specimen is now in the Museum of the Asiatic Society of Ceylon." Dr. Kelaart's Zoology of Ceylon, p. x.

Besides specimens of Copper and Lead ores from New South Wales, of the Garnet from the Cape, and of Tin ore from Malacca, *from Sir J. E. Tennent*;—of Spinel and Corundum from Pegu, of Chalcedony from Aden, of Topaz from Brazil, and of Turquoise from Khorassan, *all from Dr. Gygax*;—of Stilbite from Poonah, *from Dr. Buist*,—&c. as also a beautiful specimen of the Asbestos from the Pyrennees, *from Sir J. E. Tennent*.

6 FEB 1887



New Publications.

SIDATH SANGARAWA, a Grammar of the Singhalese Language, translated into English, with Introduction, Notes, and Appendices. By **JAMES DE ALWIS**, Member of the Ceylon Branch of the Royal Asiatic Society. Colombo, 1852. Price 12s.

PRODROMUS FAUNÆ ZEYLANICÆ, being contributions to the Zoology of Ceylon. By **E. F. KELAART**, M. D., Edin., F. L. S., F. G. S., Staff Surgeon to the Forces. Ceylon, 1852. 8vo., cloth; price 10s. 6d.

