GARDEN

WORK

Planting

From Whom ...	
Place	
Date	

SUBJECT

SEED EXCHANGE

Correspondence.

Connected Papers

MINUTES

Duncan + Davies

Bodger Seeds Ltd

Jennoji Park, Garden Dept. City of Osaka.

B. G. Lowe, Cameron Highlands

~~Daibgong~~ Buitenzorg

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AMERICAN BEGONIA SOCIETY

Long Beach, California

Officers for 1936

Mr. M. B. Dunkle, President
4543 Colorado Street

Mr. W. S. Bell, Vice-President
3014 E. Second Street

Mr. C. M. Kelly, Corresponding Secretary
285 Park Avenue

Miss Edna Ziesenhenne, Secretary-Treasurer
3100 Theresa Street

Mr. T. H. Smith - Mr. H. D. Heinley
Mr. J. Paul Walker
Additional Directors

Mr. J. N. Nutter, Show Manager

Mr. H. P. Dyckman, Nomenclature Chairman

Mr. J. S. Williams, Librarian

Mrs. T. H. Smith, Membership Chairman

Mr. J. Paul Walker, Program Chairman

Purpose of the Society

—To promote interest in begonias;
—To disseminate cultural information;
—To standardize the nomenclature;
—To introduce new varieties:
—To publish informational bulletins;
—And to bring into friendly contact all who love to grow begonias.

ACTIVITIES OF THE SOCIETY

Regular meetings are held in Long Beach the second Thursday of each month. Authoritative speakers discuss begonias and related plants---their history, correct names, culture, and propagation. Exhibits of plants and demonstration of methods of propagation are part of the program.

Reports of these meetings and other activities of the Society are made in a monthly bulletin, which is mailed to all members. The bulletin also contains notices of meetings and garden visits; articles pertaining to begonias and similar plants; a "Cultural Hints" department; and answers to questions.

The Society has also started a series of very complete cultural bulletins about each of the main groups of begonias.

During the summer, visits are made to many of the outstanding gardens in Southern California. A mid-summer Begonia Show is also held in Long Beach.

The membership is largely in Southern California, although all sections of the country are well represented.

The Society is a non-profit organization, and pays no salaries. The expenses of the Long Beach meetings are met by the members attending. The membership fee is used for the support of the bulletin.

If there are enough members in your immediate section meetings can be arranged similar to those held in Long Beach.

"Growing Begonias Is a Royal Hobby"

Become one of the nobility.

If you are interested in this great group of tropical plants we would welcome your membership in our organization.

Memberships are for the calendar year and the dues are one dollar. During the last half of the year one has the option of paying at the rate of 10c a month for the balance of the year, together with $1.00 for the following year; or paying $1.00 for the current year, receiving all the back bulletins for the year.

On the back of this page is an application blank. Fill this out completely, detach it, and mail to the American Begonia Society, Long Beach, California.

You can get information about commercial growers of begonias and related plants from us.

Let us know, also, if you do not live in the vicinity of Long Beach, if you would be interested in the formation of a local branch of our society.

Date _____

To the American Begonia Society,
3100 Theresa Street,
Long Beach, California.

I desire to become a member of the American Begonia Society and am enclosing an amount to cover the items indicated below:

$1.00 for the present year, with all back bulletins for this year ..... $_____

or

(If application is made after July 1) 10c a month for the balance of the year beginning with _____ _____
and $1.00 for next calendar year $ _____

Special cultural bulletins:

Tuberous Begonias, at 10c ..... $_____

Fibrous Begonias, at 15c ..... $_____

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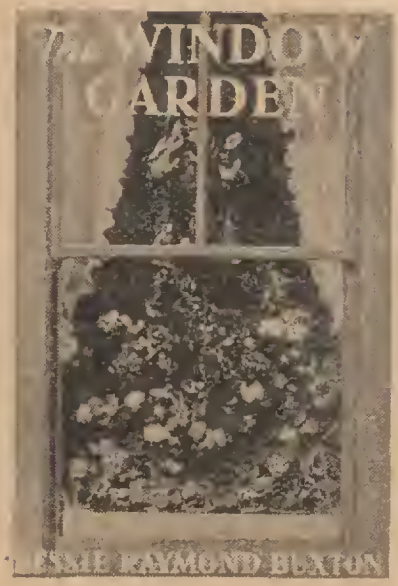

Each year sees increasing interest in window gardening, and more windows filled with flowers to give pleasure to the owner and to the passer-by. This volume is the result of many years of happy work with house plants. It attempts to solve the problems of the average amateur about propagation, soil, potting, watering and general care. Many unusual plants have been tested, photographed and described, and special chapters are given to geraniums and begonias, describing rare varieties for those who enjoy specializing.

Clear, simple instructions are given for hybridizing, whereby any amateur may produce new and lovely varieties. A chapter is devoted to plants, both new and old, for hanging pots, and another to bulbs for the window garden. Suggestions are made for overcoming hot, dry air, the greatest foe of house plants. As far as we know this is the only book on the subject written by a grower. Most of them are compilations prepared by writers. The author has really grown all the plants she has written about and illustrated in this volume.

CONTENTS:

Soil and culture, with proportions for mixing soil; Propagation by tip cuttings, basal cuttings, leaf cuttings and seeds; Potting, watering and humidifying the air; Geraniums, their history, care, choice varieties and directions for hybridizing; Begonias, history, species, hybrids and culture; Bulbs in fibre, soil or water, dormant period, early blooming varieties and unusual kinds; Hanging pots, new and old plants; The personal side, joys of collecting, racial and trade preferences, amusing experiences.

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15 East 26th Street, New York, N. Y.

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Date. . . . .

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It would take too much space to get into this feature at this time, but we shall enumerate a few—Anthuriums to Australia—Orchid Seedlings to Java, The Philippines, Delaware, New York, and Florida—Tree-ferns for Chicago Public Conservatories, Portland, Ore. and Southampton, England.

•

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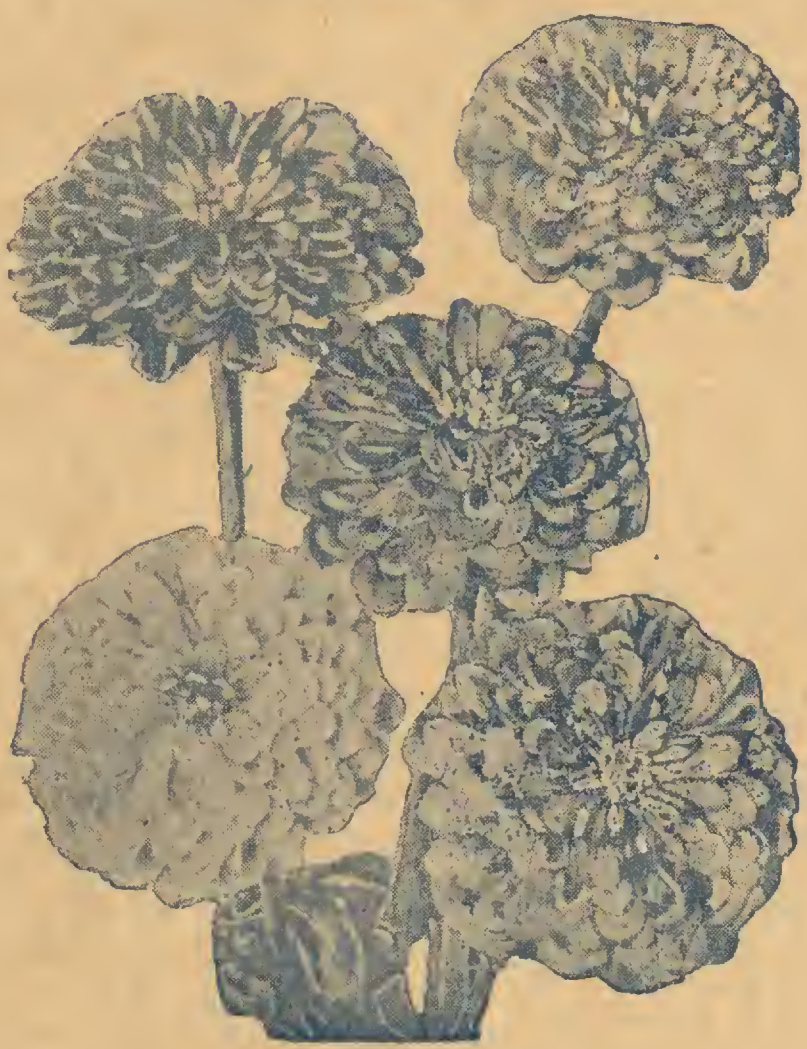

Exhibition Zinnia
(Size of flower 4-6 inches across)

Note:—*Packing free. Postage on seeds and bulbs extra. Freight by rail on plants payable at customers' end. Unless otherwise instructed, we shall send the nearest substitutes in case varieties ordered are sold out. When remitting small amounts up to ten dollars, it is most economical and safe to use Malayan Postal Orders, recently introduced. Customers are advised not to enclose Currency Notes except under registered covers.*

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Note:- *B—bedding, C—climbing, D-basket, P-pot, R-rockery.*

F 1 Alyssum, DR, lilac queen, ½ ft.
F 2 Amaranthus, B, crimson Plume, 4-5 ft.
F 3 Antirrhinum B, Snapdragon, tall mixed, 2 ft.
F 3a Antirrhinum DPR, dwarf mixed, ¾ ft.
F 4b Aster, BP, Rochester, choice mixed, 2 ft.
F 4c Aster, P, Victoria, dwarf mixed ¾ ft.
F 5 Balsam, BP, P. G. Double pink, 1½ ft.
F 5a Balsam, BP, mauve spotted cream 1½ ft.
F 5b Balsam, BP, camellia mixed, 1½ ft.
F 5c Balsam, BP, white spotted mauve, 1½ ft.
F 7 Canna, B, grand mixture, 3-4 ft.
F 8 Carnation, P, marguerite mixed, 1½ ft.
F 11 Chrysanthemum, P, hybrid mixed, 1½ ft.
F 12 Cleome, B, white or mauve, 3 ft.
F 13 Celosia, BP, yellow or crimson, 1½ ft.
F 13a Celosia, BP, yellow and red crossed, 1½ ft.
F 14 Cockscomb, BPR, crimson, ¾ ft.
F 16 Coreopsis, BP, fine mixed, 1-2 ft.
F 17 Convolvulus or Morning Glory, C, mixed.
F 17a Love-Lies-Bleeding, B, Crimson 2-3 ft.
F 19 Cosmos, B, mammoth mixed, 3-4 ft.
F 19a Cosmos, B, giant orange, 5 ft.
F 20 Clitoria Ternata, C, beautiful blue, perennial.
F 22 Dahlia, BP, single mixed, 2-3 ft.
F 23 Dutchman's Pipe, C, interesting perennial.
F 24 Dianthus or Pinks, PR, double mixed, ¾ ft.
F 24a Dianthus or Pinks, PR, single mixed, ¾ ft.
F 24b Dianthus, or Pinks, PR, chinensis mixed, ¾ ft.
F 26 Forget-me-not, DPR, (Mysotis,) blue, ½ ft.
F 27 Gaillardia, BP, grandiflora, mixed, 1½ ft.
F 27a Gaillardia, BP, lorenziana, double mixed, 1ft.
F 28 Gomphrena, B, Button, purple or white 1½ft.
F 28a Helianthemum, PR, sunrose, ½ ft.
F 29 Helichrysum, B, Everlasting mixed 4 ft.
F 29a Heliotrope, B, mixed, 2½ ft.
F 30 Hollyhock, BP, local mixed, 5-6 ft.
F 31 Honolulu, C, white, pink or red.

F 32 Larkspur, P, mixed, 2 ft.
F 32a Lavatera or Mallow, BP, mixed, 3 ft.
F 33 Lobelia, PDR, blue, ½ ft.
F 35 Marigold, African, BP, mixed, 2½ ft.
F 35a Marigold, French, BPR, dwarf mixed, 1 ft.
F 36 Marvel of Peru, B, yellow or crimson, 2½ ft.
F 38 Moonflower, C, giant white.
F 39 Nasturtium, BP, dwarf mixed, ¾ ft.
F 42 Petunia, BP, Tall single mixed, 1½ ft.
F 42c Petunia, BDPR, dwarf single mixed ¾ ft.
F 43 Phlox Drummondii, P, mixed ¾ ft.
F 44 Portulaca, PR, single mixed, ½ ft.
F 45 Rudbeckia, BP, yellow, 1½ ft.
F 46 Salvia, BP, giant scarlet, 2-3 ft.
F 46a Salvia, BP, red gem, 1½ ft.
F 46b Salvia, BP, Farinacea, blue, 1½ ft.
F 47 Sunflower, B, Tall single giant, 5-7 ft.
F 47a Sunflower, B, single miniature, 4 ft.
F 47c Sunflower, B, double golden yellow, 4 ft.
F 49 Sweet William, P, mixed, 1 ft.
F 49a Thunbergia, C, choice mixed.
F 50 Tithonia, B, Mexican sunflower, 4 ft.
F 51 Torenia, BDPR, bluebird, ¾ ft.
F 52 Verbena, DPR, mammoth mixed, ¾ ft.
F 53 Vinca Rosea, B, Periwinkle, mixed, 1½ ft.
F 55 P. G. Grand Mixture, annuals.

SPECIAL FLOWER SEEDS at 50c. per pkt.

S 1 Aster, BP, American Beauty, mixed, 2½ ft.
S 1a Aster, BP, California giant mixed, 2½ ft.
S 2 Carnation, P, Giant double mixed, 1½ ft.
S 3 Chrysanthemum, BP, Shasta Daisy 2½ ft.
S 3a Chrysanthemum, P, Chinese double 2½ ft.
S 5 Dahlia BP, Decorative giant, mixed, 4 ft.
S 8 Gerbera, BP, African Daisy mixed, 1½ ft.
S 9a Marigold BP, African, giant orange, 2½ ft.
S 10 Petunia, P, double mixed, 1½ ft.
S 10a Petunia, BDPR, very compact, pretty. ½ ft.
S 14 Phlox, P, fringed & winged, mixed, ¾ ft.

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X 1 Cape Gooseberry, Australian.
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X 17 Tree Tomato, Prolific bearer.

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V 1 Beetroot, Crimson Globe.
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V 6a Broad Beans, Cole's Prolific.
V 8 Long Bean, Local.
V 9 Cabbage, Drumhead or St. John's Day.
V 10 Carrot, Manchester Table.
V 11 Capsicum, Neapolitan, giant.
V 12 Celery, White Wonder.
V 13 Chillie, bright red, hot.
V 14 Cress, fine curled.
V 15 Cucumber, Local.
V 16 Endive, Batavian, broad leaves.
V 17 Khol Rabi or Turnip-rooted Cabbage.
V 18 Ladies Fingers or Okra.
V 19 Cabbage Lettuce, Monarch.
V 19a Cabbage Lettuce, Mignonette.
V 19c Cos Lettuce, Paris White.
V 20 Mustard, Best White.
V 21 Spring Onion.
V 22 Parsley, Triple curled.
V 23 Green Peas, Duke of Albany.
V 24 Pe-tsai, Chinese Cabbage.
V 25 Pumpkin, Golden flesh.
V 26 Radish, French Breakfast Table.
V 27 Radish, Chinese white, giant.
V 28 Spinach, Local.
V 28a Spinach, Summer.
V 29 Sweet Corn, Local.
V 29a Sweet Corn, Australian.
V 30 Australian Tomato, Repeater, or Earliana.
V 30 Australian Tomato, Margloble.
V 31 English Tomato, Perfection.
V 31a Cherry Tomato, Bright red.
V 32 Watercress.
V 33 Vegetable Marrow, Local or English
V 34 Leek, Musselburgh,
V 35 Parsnip, Hollow Crown.
V 36 Turnip, Snowball.
V 37 Rhubarb, giant.
V 38 Cauliflower, Early.
V 39 Swede Turnip, Imperial purple-top

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Zinnia Haagiana

Z1. **"Exhibition"** @ 50c. per packet.

This is the finest strain of Zinnias yet introduced. The large size, fullness of petals, great colour range and good keeping qualities of the flowers are all points in favour of their popularity. Height 2½ to 3 ft. Two types:-

a. Giant Mammoth, mixed.
b. Dahlia-flowered, mixed.

Z2. **"Prize"** @ 15c. and 25cts per packet.

This is a favourite strain with many growers. The flowers are large with a small percentage of single blooms. Height 2½ to 3 ft. seed mixed.

Z3. **"Picotee Giant"** @ 25c. per packet.

A special strain. Petals of flowers are tipped with well-defined markings. Colours range from salmon, cream, to buff, yellow and lavender. Height 2 ft. seed mixed.

Z4. **"Haagiana"** @ 25c. per packet.

A popular strain of compact habit with flowers of peculiar shade. Colours rose tipped yellow, maroon tipped cream or wallflower tipped yellow. Height 9 to 10 inches, seed mixed.

Z5. **"Lilliput"** @ 25c. per packet.

This variety is admirably suited for growing along edges of flower borders or for massing in beds. Growth is compact, height 1 to 1½ ft. seed mixed.

Z6. "**Elegans**" @ 25c. per packet.
Sometimes known as the Zebra Zinnia Petals of flowers distinctly striped. Height. 1½ ft.

Z7. "**Scabious**" @ 25c. per packet.
Medium sized flowers, crested centre, resembling the annual scabious.

SPECIAL ZINNIA COLLECTION OFFER.

ZA. Seven varieties, six packets @ 25c. and two packets @ 50c. Price @ $2-00.

ZB. Five varieties, four packets @ 25c. and one packet @ 50c. Price @ $1-25c.

Evergreen Lawn Grass Seeds for Tropics.

Couch or Bermuda @ $ 1.80 per lb.
Carpet Grass @ $ 1.30 per lb.

BULBS, ROOTS AND TUBERS

Angelonia, white or mauve, cuttings	20c.	doz.
Caladium, handsome veined leaves	$1.00c.	,,
Gerbera or African Daisy	$1.80c.	,,
Gloriosa Superba, handsome climber	60c.	,,
Cuperanthes, large pink zephranthes	40c.	,,
Honolulu, white, pink or red	2.40c.	,,
Michaelmas Daisies, mauve blue	40c.	,,
Perennial Coreopsis large yellow	30c.	,,
Spathoglottis, mauve	40c.	,,
Spathoglottis, white	75c.	,,
Spathoglottis, large lavender	90c.	,,
Tuberose, scented white flower	50c.	,,
Violet, large purple	50c.	,,
Zephranthes, white, yellow or pink	20c.	,,

MONTBRETIAS @ 75 cts. per dozen corms.

Bouquet Parfait, bright vermillion, yellow centre.
Fantancy, red and yellow.
Feu d' Artifice bright red.
Fire King, scarlet red.
Geo Davison orange yellow.
King Edmund bright orange.
Lady Hamilton rich apricot large.
Lord Nelson orange scarlet.
Majorie, orange yellow with carmine.
Queen Alexandra chrome yellow carmine blotch.
Rosea salmon rose.
St. Botolph dark yellow.

DAHLIA.

Dahlia is a beautiful and showy flower which can be grown successfully in this country. Blooms of plants grown localiy are comparable in size and beauty to those seen in Dahlia Shows in Europe. Cultural directions under local conditions are supplied with each order.

C-Cactus D-Decorative

Decorative Dahlia

Extra Special:- Tubers @ $ 1/-each or 11/- dozen
Alois Neleen, C, orange, bright yellow centre.
Berengeria, D, orange gold, enormous size.
Bucheye King. D. giant flower, amber colour.
Champoeg, D. base amber gold, shading to pink.
C. G. Reed. D, purplish rose, immense flower.
Croyden Beauty, D, clear rich yellow, immense.
Daily Mail, D, deep yellow changing to orange, giant
D. B Crane, D, crimson tinged with orange, large.
D. W. Morrow. D, huge flower, glowing red.
Farben Wonder, C, brilliant orange, tipped white.
Galaxy, C. yellow, heavily splashed, and striped red.
Jersey Beacon, D, very large, bright scarlet.
Jersey Mammoth, D, bright golden mahogany.
Kaweah. D, largest American Dahlia, cerise rose.
Pink Daily Mail, D, large cyclamen pink.
President Decault, D, wonderful scarlet, giant.
Satan, D, enormous scarlet flower, long stem.

The Duchess, D, sulphur yellow, tipped white,
Victoria, C, best yellow cactus, free flowering.
Voit's Ideal, C, very large pure white.

Special:- Tubers @ 75cts each or $8-25 dozen.

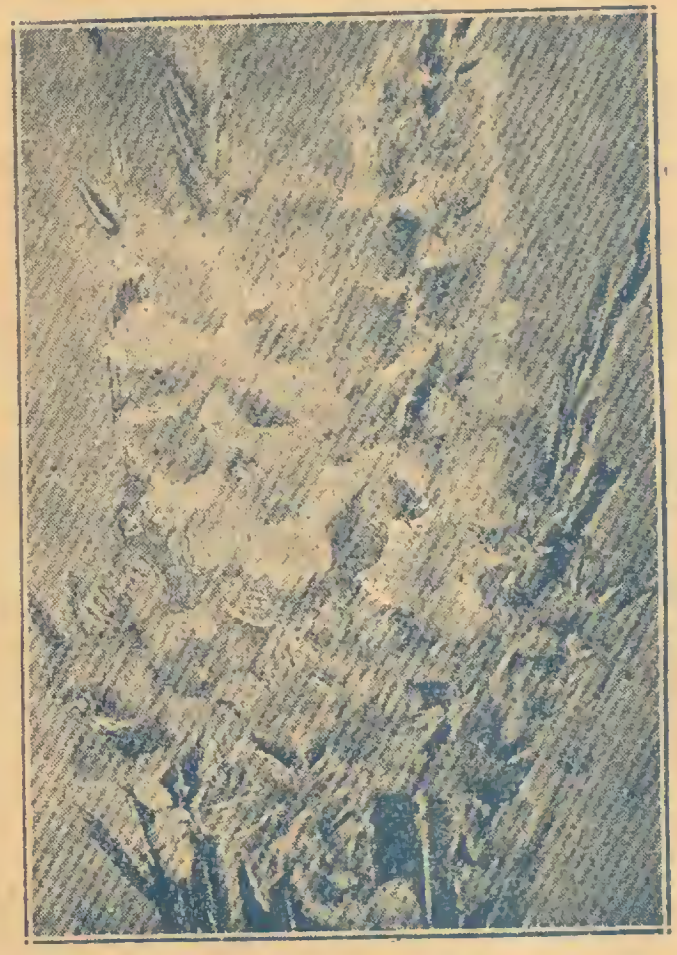
American Triumph, D, clean rich red.
Andraea Ericson, D, large pure white.
Ballego's Glory, D, mahogany, edged golden yellow
Ballet Girl, C, white ground flushed with orange.
California Beauty, D, orange yellow.
Cigarette, D. creamy white, edged bright orange.
Elite Glory, D, gigantic blooms of rich red.
Ellinor Nanderveer, D, satiny rose-pink.
Faith Garibaldi, D, large deep rose.
Frau O'Bracht, C, pale straw yellow.
Fort Mammoth, D, bright claret red.
Full Moon, D, bright canary yellow giant.
Grace Curling, D, white changing to lilac pink.
Grand Soleil d'or, D, gold with amber, immense.
Hercules, D, large deep crimson and carmine.
Jane Cowl, D, huge buff and old gold.
Jersey Beauty, D, silvery salmon pink.
Jersey Masterpiece, D, very large mahogany.
Jersey Radiant, D, dark orange amber shading.
Judge L. MacCord, D, golden yellow with rose.
Kemp's Violet Wonder, D, bright purple violet
Madame F. Braem, C, lemon shading to salmon.
Mammoth Champion, D, orange flame.
Mrs. A. B. Seal, D, old rose with violet.
Mrs. F. V. Russell, D, white centre tipped pink.
New Glory, C, deep blood red with white tips.
Paul Pfitzer, C, salmon flushed pink, yellow base.
Pride of San Francisco, D, gold, salmon shade
Prince of Persia, D, dark cardinal red.
Queen of The Garden Beautiful, D, pure yellow.
Regal, D, bronze, suffused old rose and amber.
Robert Treat, D, large velvety carmine
Sanhican Blue Bird, D, violet blue, very unique.
Sharazad, D, the pink "Jane Cowl".
Siskyou, D, large mauve pink, yellow centre.
The World, D, deep rosy magenta, long stem.
T. A. Edison, D, royal purple, strong stem.
Thomas Leavitt, D, golden yellow, shaded salmon.
Trentonian, D, old gold shaded copper, immense.
Double Orange @ 25 cts each or $ 2-50 per dozen.

BEGONIA BULBS.

Double Large Flowering @ 25 cts. each.
Double Fringed @ 25 cts. each.
Multiflora, free flowering, @ 30 cts. each.

GIANT-FLOWERED GLADIOLI.

This popular flower may be grown without difficulty throughout the year, and the beautiful blooms which last for several days are very useful for table decoration. Corms may be replanted after resting for a few months.



Twelve Special Varieties @ $1.50, one of each.

Adoration, intense glowing scarlet.
Ave Maria, lively heliotrope.
Beat All, pure light rose, dark blotch.
Capt. Boyton, soft lilac, velvety violet blotch.
Charles Dickens, bright purplish violet.
Gladness, dazzling vermillion scarlet.
Impressive, dark pink shade, large flower.
Liebesfeuer, brilliant red, extra large.
Maagd van Orleans, white giant spikes.
Orange Imperator, dark orange.
Pfeitzer Triumph, glowing brick red.
Thomas Edison, salmon orange.

Popular varieties

@ 75 cts. doz or $6-00 per 100.

America, lovely flesh pink.
Anmut, yellowish salmon rose, early.
Apricot, yellow apricot, early.

Baron Hulot, dark indigo blue.
Baron van Wijnbergen, salmon pink.
Belinde, sulphur yellow.
Bleriot, apricot rose.
Brilliant, orange scarlet.
Carolius Clusius, excellent pink.
Catharina beautiful light blue.
Crimson Glow, carmine red, early.
Duchess of York, purplish violet.
Early Sunrise,bright orange scarlet, early.
Energie, fine scarlet.
Empress of India, velvety blackish scarlet.
Flaming Sword, brilliant blood red.
Golden West, orange scarlet yellow centre
Halley, salmon red, creamy blotch, early.
Harmony,lovely pink.
Lady Boreil, delicate, rose, dark blotch.
Leviathan, pure yellow, extra large.
Lilac Wonder, very large lavender.
L'Immaculee, extra pure white.
L'Unique, extra pink, lovely shade.
Marechal Foch, bright rose, large broad truss.
Mount Everest, pure white, large flower.
Nancy Hanks, saffron orange.
Nimrod, beautiful pink.
Odin, salmon red, dark blotch, early.
Orange Queen, apricot orange.
Panama, deep pink, splendid spike.
Peace, white with pale lilac feathering.
Pink Beauty, salmon pink, wine red blotch.
Pink Perfection, apple blossom pink.
Prince of Wales, salmon orange.
Princeps, red with yellow blotch.
Princess Astrid, excellent rose.
Quo Vades lively pink.
Red Canna, dark scarlet red.
Red Emperor, crimson Scarlet.
Rose Precose, bright rose, early.
Rosette, salmon rose.
Roi Soleil, golden yellow.
Rubini, salmon red, early.
Schwaben, pure yellow.
Van der Veer, bright violet, beautiful.
Venus, white with claret blotch.
Virginia, bright scarlet.
War, deep blood red.
White Giant, purest white, large.
Yellow Standard, pure yellow, long spike.
Yvonne, blush pink, with claret blotch.
Unnamed Mixed(discontinued).

CANNAS.

Special Varieties @ 10c each or $1-00 per dozen.

C 1 Orange flowers of large size, held on long stems, leaves green.
C 2 Huge trusses of pink flowers, spotted with deeper shade, yellow tongue, leaves purplish green.
C 3 Sulphur yellow, flowers of large size, inner petals spotted purplish red, leaves green.
C 4 Crimson scarlet flowers of medium size in large clusters, leaves green.
C 5 Flesh coloured flowers of large size, purplish towards centre, leaves green.
C 6 Creamy white flowers in large trusses, leaves green.
C 7 Salmon pink flowers of moderate size in large clusters, leaves green.
C 8 Deep yellow flowers of large size, lightly spotted orange, leaves green.
C 9 Golden flowers of medium size in large trusses, leaves purplish green.
C 10 Cream ground, large flowers richly flushed and spotted pink, leaves green.
C 11 Orange red flowers of medium size in large clusters, margin of petals golden, leaves green.
C 12 Deep orange flowers of dazzling effect, leaves purplish green.
C 13 Deep yellow flowers, splashed and striped with red, inner petals red, leaves green.
C 14 Crimson flowers of large size, purple leaves.
C 15 Crimson flowers in large trusses, leaves green.
C 16 Scarlet flowers with thin yellow margin, leaves green.
C 50 Dwarf, different from other cannas, pretty orange yellow flowers @ $1.50 dozen

Ordinary Varieties @ 7c each or 75cts per dozen.

C 21 Giant scarlet flowers of immense size, leaves green.
C 22 Yellow flowers, spotted and richly flushed with orange red, leaves green.
C 23 Deep orange flowers of large size, leaves green.
C 24 Pure yellow flowers, tongue tipped orange red, leaves green.
C 25 Deep orange flowers, medium clusters, leaves dark.

GLOXINIAS.

This handsome pot plant should find a place in every garden. It may be grown from bulbs without much difficulty by any amateur. There is a wide range of colours including some beautifully spotted ones. Cultural directions supplied.

Bulbs @ 30 cts each or $3/- per dozen.

Defiance, lively red.
Kaiser Friedrich, red and white.
Montblanc, pure white.
Petri, red with white border.
Prince Albert, large dark blue.
Princess Elizabeth, white with blue border.
Progres, blue with white border.
Queen Wilhelmina, dark rose.
Tigrinia, beautifully spotted.

ANEMONE & HYACINTH BULBS.

Double Anemone @ 15 cts. each or $1-50 dozen.
Hyacinth @ 30 cts. each or $3-00 per dozen.

PERENNIAL SHRUBS IN POTS.

Barleria, pretty mauve flower	40 cts.	each
Begonia, several varieties	40 cts.	,,
Caesalpina, yellow or orange	40 cts.	,,
Casuarina, conifer	.50 to 75 cts.	,,
Cereus, Chinese Kheng Hua	75 cts.	,,
Clerodendron, several varieties	40-75 cts.	,,
Crossandra, pretty orange flower	50 cts.	,,
Ferns, asparagus or maidenhair	50-75	,,
Firs, Junipers or Cypress	50-1.50 cts.	,,
Galphimia ~~white scented~~ yellow flower	50 cts.	,,
Gardenia, white, scented	50 cts.	,,
Hydrangea, blue	50-1.00 cts.	,,
Isoloma, orange flower	50 cts.	,,
Jatropha, ~~double or single~~ red	50 cts.	,,
Kopsia, bushy, flowers pink	50 cts.	,,
Michaelmas Daisies, mauve blue	40 cts.	,,
Oleander, rose-flowered,	50–75 cts.	,,
Palms, several varieties	50-1.50 cts.	,,
Perennial Verbena, purple	50 cts.	,,
Pentas, pretty purple or red	50-75 cts.	,,
Plumbago, blue	50 cts.	,,
Poinsettia, red top	40 cts.	,,
Roses, red, pink or white	50 cts.	,,
Rose, giant yellow	1.00 cts.	,,
Russellia Juncea, scarlet	75 cts.	,,
Thunbergia Erecta, shrub	50-75 cts.	,,
Tree Jasmine	50-75 cts.	,,
Vanda Joachim Orchid	50-75-1.00 cts.	clump

LILY BULBS

Amaryllis, @ $ 1-20 per dozen.
Arum, Monarch of the East, @ 40 cts. each.
Calla, Aetiopia @ 75 cts. each.
Calla, Pearl of Stuttgart @ 75 cts. each.
Candidum or Madonna, 45 cts. each.
Crinum @ $1-50 per dozen.
Eucharis @ 1-20 per dozen.
Longiflora, @ 50 cts. each.
Regale @ 40 cts. each.
Tiger, double flowering, @ 35 cts. each.
Water Lilies, pink @ 25 cts. each

BOUGAINVILLEA.

Mauve, pink, crimson (bush) at	50c. to	1.50 each
,, ,, ,, (Standard)	1/- to	1 50 ,,
Special Orange (limited stock)		2.50 ,,

CLIMBERS OR CREEPERS IN POTS

Allamanda, yellow	35 cts	each
Bridal Creeper, white	50 cts	,,
Clematis, white	50-75 cts	,,
Clitoria Ternata, blue	40 cts	,,
Congea, mauve	50 cts	,,
Dipladenia, apricot	2.50 cts	,,
Gloriosa Superba, orange red	40 cts	,,
Honeysuckle, yellow white	40 cts	,,
Honolulu, white pink or red	35 cts	,,
Perennial Morning Glory, blue	40 cts	,,
Petrea, blue	60 cts	,,
Potato Creeper, light blue	50-75 cts	,,
Stephanotis, white	1.25-$2.00 cts	,,
Thunbergia, white or blue	40 cts	,,
Tristellatea, pretty yellow	50 cts	,,

HIBISCUS.

Standard @ 60 cts. Bush @ 50 cts. each.

H1. Double pink
H2. Double giant red
H3. Double small red
H4. Single light pink
H5a. Pink, red centre
H6. Single deep pink
H8. Cream, red centre
H9. Pure cream
H10. Giant double pink, broad leaves, bush only

Special Varieties, Bush Only.

H21. Double mauve @ 75 cts. each
H22. Double white @ 75 cts. each
H23. Double yellow @ 75 cts. each

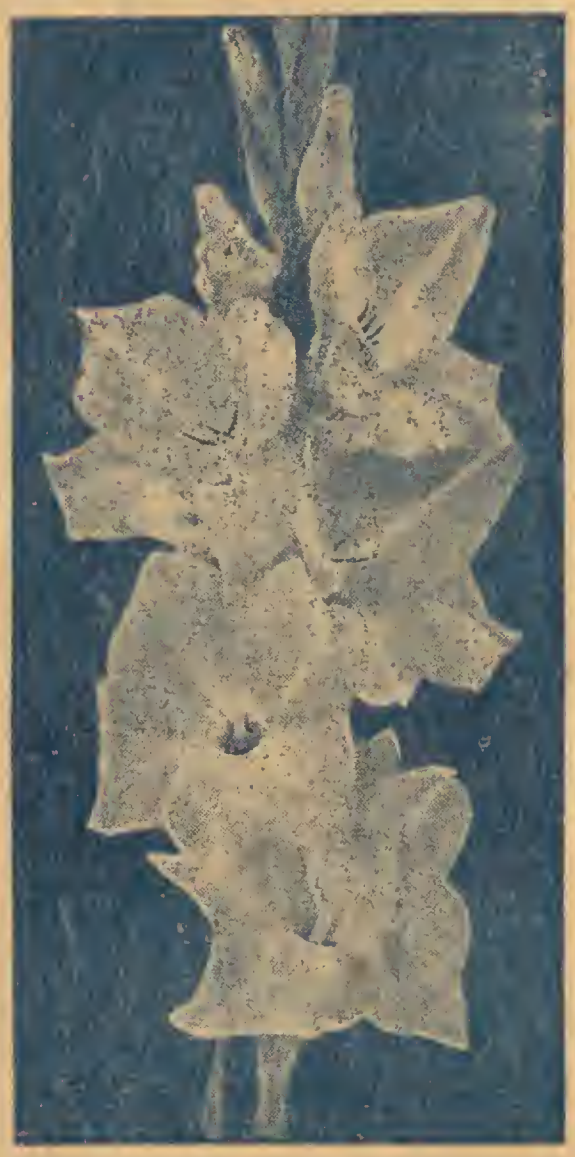
FRUIT TREES.

Chiku, large variety	1.00c.	each
Custard Apple, delicious fruit	.50c.	,,
Jambu Ayer, large sweet	.75c.	,,
Lime, large	.75 to 1.00c.	,,
Lime, small	60c.	,,
Mango, Chinese large	2,00c.	,,
Mango, local small	1.00c.	,,
Mangosteen, popular fruit	1,00c.	,,
Orange, China	1.50c.	,,
Orange, Local	1.00c.	,,
Passion Fruit	50c.	,,
Pomeio, Tambun	1.00c.	,,
Rambutan, sweet & lenkang	3.00-5.00c.	,,
West Indian Cherry	30c.	,,

IXORA at 40 cts. to $1.00 each

White, yellow, giant red, small red, orange, pink or apricot.

A STALK OF GLADIOLI FLOWERS.



FRESH CUT FLOWERS.

Bargain Parcel at $2-00, half quantity at $1-15, freight paid to any F.M.S.R. Station, delivery fee to Hospital 5c. extra.

Contents.

2¼ dozen Double Carnations
2 dozen African Daisies
1 dozen Maidenhair ferns

N. B. Joachim Orchids may be substituted for Carnations and Orange Dahlias for African Daisies if available.

GARDEN SUNDRIES

Fertabs, tonic pills for plants (60)	55c.	box
Fertabs, ,, (150)	1.10c.	box
Flower Pots, 6" to 12"	70c. to 1.70c.	doz.
Garden Forks, long handle	1.95c.	each
Hanging Pots, 9"	1.15c.	doz.
Hanging wire baskets,	20c. 25c. & 35c.	each
Hand Syringe, brass, 175, 2.25, 2.75 & 3.75c.		each
Hand Trowels or Forks	40 or 45c.	each
Hedge Shears, good quality	1.85c.	each
Hoe	1.00c.	each
Lawn Mower, Qualcast,	$15.50c.	each
Lawn Mower, Ransome,	$38.00c.	each
Metal Sieve	60c.	each
Orchid pots, special	15, 18 and 25c.	each
P.G. Fertilizer, 1 lb. tin	25c.	each
P.G. Fertilizer, 5 lb. tin	1.00c.	each
Potting Soil, sterilised, 2 piculs	2.00c.	bag
Pruning Knife	60c. & 75c.	each
Pruning Saw	75c, 1.15, 1.25c.	each
Raffia	30c.	bun.
Rake	70 & 85c.	each
Scythe Blades, good quality	2.45c.	each
Scythe Handle, strong wood	1.85c.	each
Scythe Stone	60c.	each
Secateurs, Gardener's scissors 1/- to	1.50c.	each
Seed Pots, useful for seed sowing	18c.	each
Slaked Lime	1.00c.	bag
Tuba-roots, excellent insecticide	25c.	lb.
Watering Can, large	1.10c.	each
Watering Can, small	50c.	each
Zinc Labels	35c.	doz.
Indelible Ink	45c.	bot.

Unsolicited Testimonial.

"I have been entirely pleased with the plants, bulbs and seeds with which you have supplied me to date, especially the Gloxinias and Dahlias, both of which are magnificent".

Mr. S., Banting, 9/11/37

—o—

N. B. N. This list cancels all previous prices.

Mr. Nauen

's LANDS PLANTENTUIN
GOV. BOTANIC GARDENS
BUITENZORG — JAVA — N. I.

LIST OF SEEDS

OF

HERBACEOUS PLANTS, TREES AND SHRUBS

1933

PRINTED BY THE ARCHIPEL DRUKKERIJ BUITENZORG
IN COMMISSION OF THE LANDSDRUKKERIJ BATAVIA 1933.

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INTRODUCTION

The following is a third edition of our list of seeds of herbaceous plants, trees and shrubs. These seeds are available only for exchange with Botanic Gardens, and other regular correspondents of our Institution, being not for sale.

In order to prevent misunderstanding it may be emphasized that our seed list is not issued annually, but is meant to be used for several years. As it is impossible to keep seeds in stock for a long period in the tropics, they are only available for distribution immediately after harvesting.

In the present list the families are no longer arranged systematically, the alphabetical order which is more in accordance with the purpose and the practical use of this publication being chosen from now on.

Dr. K. W. DAMMERMAN
Director Botanic Gardens.

P. M. W. DAKKUS
Curator Botanic Gardens.

PTERIDOPHYTA

Cyatheaceae

Alsophila
glabra Hook.
glauca J. Sm.
„ var. setulosa Hassk.
Cibotium
baranetz J. Sm.
Cyathea
saparuensis v. A. v. R.
Dicksonia Blumei Moore

Lycopodiaceae

Lycopodium
cernuum L.
hippuris Desv.
laxum Pr.
minutifolium v. A. v. R.
phlegmaria L.
„ var. filiforme v. A. v. R.
„ var. longifolium Spring.
phlegmarioides Gaud.
phyllanthum Hk. et Arn.
pinifolium Bl.
squarrosum Forst.
„ f. hippuroides v. A. v. R.
subfalciforme v. A. v. R.

Marattiaceae

Angiopteris
javanica Pr.
subfurfuracea v. A. v. R.
Christensenia
aesculifolia Max.
Marattia
sambucina Bl.

Parkeriaceae

Ceratopteris
thalictroides Brongn.

Polypodiaceae

Acrostichum
aureum L.
„ f. speciosa v. A. v. R.
Adiantum
aculeolatum v. A. v. R.
aemulum Moore
celebicum Christ.
ciliatum Bl.
concinnum H. B. K.
cuneatum L. et F.
„ var. hybridum Hort.
„ var. variegatum Hort.
excisum Kze.
„ var. multifidum
Fergusonii Moore
flabellulatum L.
formosum R. Br.
fragrantissimum Henders.
gracillimum Moore
hispidulum Sw.
Labarum Hort.
lunulatum Burm.
macrophyllum Sw.
Pacottii Hort.
peruvianum Kl.
polyphyllum Willd.
setulosum J. Sm.
tenerum Sw.
„ „ f.
tinctum Moore
tortuosum Hort.
trapeziforme L.
Williamsii Moore
Antrophyum
callifolium Bl.
immersum Mett.
semicostatum Bl.
Aspidium
melanocaulon Bl.
platanifolium Mett.
polymorphum Wall. var. subvariegatum
vastum Bl.
Asplenium
adiantoides C. Chr.
amboinense Willd.
Belangeri Kze.

Asplenium
caudatum Forst.
„ „ var. Schoggersii
contiguum Klf.
longissimum Bl.
nidus L.
„ f. monstruosa
nitidum Sw.
paradoxum Bl.
pellucidum Lam.
scalare Rst.
scandens J. Sm.
squamulatum Bl.
tenerum Forst.
unilaterale Lam.
Athyrium macrocarpum Bedd.
nigripes Moore
nitidulum Milde.
Blechnum
brasiliense Desv.
Finlaysonianum Wall.
orientale L.
Ceropteris
calomelanos Und.
tartarea Link.
„ var. ochracea
Coniogramma fraxinea Diels
Cyclopeltis
Presliana Berk.
Cyclophorus
abbreviatus C. Chr.
acrostichoides Pr.
adnascens Desv.
angustatus Desv.
brevipes v. A. v. R.
nummulariifolius C. Chr.
rasamalae C. Chr.
splendens C. Chr.
varius Gaud.
Cystopteris stipellata v. A. v. R.
Davallia
denticulata Mett.
dissecta J. Sm.
divaricata Bl.
pallida Mett.
pentaphylla Bl.
solida Sw.
Davallodes
hirsutum Copel.
Diacalpe aspidioides Bl.
Dictyopteris
ferruginea v. A. v. R.
hemiteliiformis v. A. v. R.
irregularis Pr.
Didymochlaena
lunulata Desv.
Diplaziopsis javanica C. Chr.
Diplazium
asperum Bl.
bantamense Bl.
cordifolium Bl.
esculentum Sw.
Forbesii Christ
grammitoides Presl
lanceum Pr.
latifolium Moore
pallidum Moore
permirabile v. A. v. R.
Petersenii Christ.
polypodioides Bl.
proliferum Thouars
„ var. accedens
silvaticum Sw.
sorzogonense Presl
subserratum Moore f. lobata
Dipteris conjugata Reinw.
Drynaria
pleuridioides Pr.
quercifolia J. Sm.
rigidula Bedd.
sparsisora Moore
Dryopteris
amboinensis O. Ktze.
appendiculata C. Chr.
Boryana C. Chr.
callosa C. Chr.
cucullata Christ
decursive-pinnata O. Ktze.
dissecta O. Ktze.
erythrosora O. Ktze.
ferox O. Ktze.
heterocarpa O. Ktze.
hirtipes O. Ktze.
immersa O. Ktze.
lineata C. Chr.
malayensis C. Chr.
megaphylla C. Chr.
mollis Hieron.
piloso-squamata v. A. v. R.
rhodolepis C. Chr.
sagittifolia O. Ktze.

Dryopteris
setigera O. Ktze.
„ var. pallida v.A.v.R.
sparsa O. Ktze.
truncata O. Ktze.
urophylla C. Chr.
vilis O. Ktze.
vinosicarpa v. A. v. R.
Wigmanii C. Chr.
Elaphoglossum callifolium Moore
Hemionitis
palmata L.
Histiopteris incisa J. Sm.
Humata hymenophylloides Copel.
Hymenolepis
spicata Pr.
„ var. Bakhuizenii v. A. v. R.
Hypolepis punctata Bedd.
var. rugulosa v. A. v. R.
Lecanopteris
Curtisii Bk.
Leptochilus
cuspidatus C. Chr.
Lindsaya cultrata Sw.
Lomaria vestita Bl.
Loxogramme
Blumeana Pr.
involuta Pr.
iridifolia Copel.
Mesochlaena
polycarpa Bedd.
sumatrensis v. A. v. R. f. habokoana
Microlepia
speluncae Moore
„ var. immersa
Nephrolepis
acuminata Kuhn
biserrata Schott
exaltata Schott
hirsutula Pr.
Odontosoria
chinensis J. Sm.
Oleandra neriiformis Cav.
Phegopteris
cuspidata Mett.
fallax v. A. v. R.
Hasseltii Mett.
lastreoides v. A. v. R.
opaca Mett.
stegnogramma Mett.
Platycerium
coronarium Desv.
Wilhelminae Reginae v. A. v. R.
Willinckii Moore
Pleocnemia
devexa v. A. v. R.
„ var. minor v. A. v. R.
Leuzeana Pr.
Pleopeltis
accedens Moore
commutata v. A. v. R.
heraclea v. A. v. R.
incurvata Moore
insignis Bedd.
longissima Moore
musifolia Moore
nigrescens Carr.
phymatodes Moore
„ var. multisecta
platyphylla Bedd.
pteropus Moore
punctata Bedd.
sinuosa Bedd.
Zippelii Moore
Zollingeriana v. A. v. R.
Polybotrya
appendiculata J. Sm.
Nieuwenhuisii Rac.
Polypodium
obliquatum Bl.
papillosum Bl.
subauriculatum Bl.
„ var. pallens
verrucosum Wall.
Polystichum
aculeatum Schott
aristatum Pr.
biaristatum Moore
coniifolium Pr.
Pteris
biaurita L.
ensiformis Burm.
excelsa Gaud.
longipinnula Wall.
quadriaurita Retz
radicans Chr. var. javanica
semipinnata L.
talamauana v. A. v. R.
Stenochlaena
Raciborskii C. Chr.

Stenosemia
aurita Pr.
Taenitis
blechnoides Sw.
Todea barbara Moore
Vittaria
elongata Sw.
Woodwardia radicans Sm.

Psilotaceae

Psilotum
nudum Griseb.

Schizaeaceae

Lygodium
circinatum Sw.
flexuosum Sw.
japonicum Sw.

GYMNOSPERMAE

Cycadaceae

Cycas
Rumphii Miq.
Encephalartos
Hildebrandtii A. Br. et Bouché.
Zamia
pumila L.

Gnetaceae

Gnetum
cuspidatum Bl.
diminutum Markgr.
Gnemon L.
„ var. ovalifolia
gnemonoides Brongn.
latifolium Bl.
„ var. funiculare Markgr.
leptostachyum Bl.
macrostachyum Hook. f.
Ula Brongn.

Coniferae

Pinaceae

Agathis
alba Foxw.
Araucaria
Bidwillii Hook.
Cunninghamii Sw.
Callitris
Muelleri Benth.
Cryptomeria
japonica Don
Cupressus
Benthamii Endl.
fastigiata Don
funebris Endl.
glauca Lam.
Goveniana Gord.
Lawsoniana Andr.
Lindleyi Klotzsch
lusitanica Mill
sempervirens L.
„ var. indica Parl.
torulosa Don
Juniperus chinensis L.
virginiana L.
Pinus
— Merkusii Jungh. et De Vriese
Montezumae Lamb.
Thuja
orientalis L.

Taxaceae

Podocarpus
amarus Bl.
Blumei Endl.
imbricatus Bl.
neriifolius Don
polystachyus R. Br.

ANGIOSPERMAE

MONOCOTYLEDONEAE

Alismataceae

Alisma
Plantago L.
Lophotocarpus
guyanensis Sm.
Sagittaria
lancifolia L.
montevidensis Cham. et Schltr.
sagittifolia L.
„ var. leucopetala Miq.
subulata Buch.
„ var. natans J. J. S.

Amaryllidaceae

Agave
americana L.
filifera Salm-Dyck (Bulbilles).
Morrisii Bak. (Bulbilles).
rubescens Salm-Dyck (Bulbilles).
sisalana Perrine (Bulbilles).
Anigosanthes
flavidus Red.
Bravoa
geminiflora Lex.
Calliphruria
Hartwegiana Herb.
Clivia
miniata Regel.
Cooperia
— Drummondii Herb.
Crinum
asiaticum L.
giganteum Andr.
„ f. Rattrayi
Kirkii Bak.
longifolium Roxb.
Moorei Hook.
pedunculatum R. Br. var. pacificum
Powellii Hort.
zeylanicum L.
Curculigo
capitulata O.K.
latifolia Dryand
Cyrtanthus
Mackenii Hook. f.
pallidus Sims.
Doryanthes
Palmeri W. Hill
Furcraea
gigantea Vent. (Bulbilles).
tuberosa Ait. (Bulbilles).
Hippeastrum
Advena Herb.
aulicum Herb.
equestre Herb.
hybridum Hort.
roseum Bak.
stylosum Herb.
vittatum Herb.
Hymenocallis
littoralis Salisb.
Lycoris
radiata Herb.
Polianthes
tuberosa L.
Zephyranthes
candida Herb.
carinata Herb.
citrina Bak.
grandiflora Hort. —
rosea Lindl.
tubispatha Herb.
verecunda Herb. —

Aponogetonaceae

Aponogeton
echinatus Roxb.

Araceae

Aglaonema
costatum N. E. Br.
grande v. A. v. R.
modestum Schott
novo-guineense Engl.
oblongifolium Kunth
„ var. Curtisii Ridl.
pictum Kunth
„ var. tricolor
robustum v. A. v. R.
Roebelenii Hort.
simplex Bl.
„ var. latifolium Bl.
Alocasia
Augustiana Lind.
bantamensis Koord.
crassifolia Engl.
indica Schott, var. metallica Hook.
porphyroneura Hall. f.
„ var.
Amorphophallus
campanulatus Bl.
oncophyllus Prain
variabilis Bl.
Anchomanes
difformis Engl. var.
Anthurium
Bakeri Hook. f.
cristallinum Lind. et And.
Ferrierense Hort.

Anthurium
Geitnerianum Reg.
Harrisii Endl.
Hookeri Kunth
hybridum Hort.
macrolobum Hort.
magnificum Lind.
pedato-radiatum Schott
regale Lind.
robustum Hort.
roseum Hort.
subsignatum Schott × ochranthum C. Koch
Arisaema
filiforme Reinw.
Colocasia
antiquorum Schott
gigantea Hook. f.
indica Hassk.
Epipremnum
ceramense v. A. v. R.
Holochlamys
guineensis Engl. et Kr.
Homalomena
coerulescens Jungh. et Schott
cordata Schott
gigantea Engl.
latifrons Engl.
lucidula v. A. v. R.
pygmaea Engl.
„ var. purpurascens
refulgens v. A. v. R.
Lasia
concinna v. A. v. R.
spinosa Thw.
„ f. simplex.
Philodendron
bipinnatifidum Schott
grandifolium Schott
pinnatifidum Kunth
sagittifolium Liebm.
squamiferum Poepp.
tripartitum Schott
Remusatia
vivipara Schott (Bulbilles).
Rhaphidophora
decursiva Schott
spathacea Schott
Schismatoglottis
acutangula Engl.
calyptrata Z. & M.
Schismatoglottis
emarginata Engl.
Engleriana v. A. v. R.
javanica Engl.
latevaginata Engl.
latifolia Miq.
„ var. rubescens
Nieuwenhuisii Engl.
Treubii Engl.
Scindapsus
hederaceus Schott
Treubii Engl.
Spathiphyllum
cannifolium Schott
commutatum Schott
Ortgiesii Regel
Patinii N. E. Br.
Typhonium
divaricatum Dcne.
flagelliforme Bl.
trilobatum Schott
Xanthosoma
violaceum Schott

Bromeliaceae

Aechmea
bracteata Mez.
bromeliifolia Bak.
calyculata Bak.
fulgens Beer.
„ „ f. discolor
Ananas
comosus Merr.
„ „ fol. var.
„ var. microcephala
Billbergia
Porteana Brongn.
Canistrum
aurantiacum E. Morr.
Cryptanthus
acaulis Beer.
Gravisia
exsudans Mez.
Karatas
Nidus puellae André
Nidularium
spectabile Moore
Pitcairnia
Altensteinii Lem.
Andreana Lind.

Pitcairnia
aphelandriflora Lem.
atrorubens Bak.
latifolia Sol.
maidifolia Dcne.
punicea Scheid.
rubiginosa Bak.
Vriesea
splendens L.

Butomaceae

Limnocharis
emarginata H. & B.

Cannaceae

Canna
albo-rosea Hort.
coccinea Mill.
discolor Lindl.
Canna
flaccida Salisb.
glauca L.
„ var. rubro-lutea
hybrida Hort.
lutea Mill.
speciosa Rosc.
Warscewiczii Dietr.

Commelinaceae

Aneilema
conspicuum Kth.
Hamiltonianum Wall.
monadelphum Kth.
nudiflorum R. Br.
ovatum Wall.
spiratum R. Br.
Commelina
auriculata Bl.
benghalensis L. fl. coeruleis
„ „ „ lilacinis
nudiflora L.
paleata Hassk.
Pohliana Seub. fl. coeruleis
„ „ „ lilacinis
salicifolia Roxb.
suffruticosa Bl.
Cyanotis
axillaris Don
capitata Clarke
cristata Don
Dichorisandra
thyrsiflora Mikan.
Floscopa
scandens Lour.
Forrestia
bicolor Clarke
monosperma Clarke
Palisota
Barteri Hook. f.
bracteosa Clarke
Pollia
thyrsiflora Endl.
Rhoeo
discolor Hance
„ „ f. vittata
Tinantia
erecta Schlecht
Tradescantia
geniculata Jacq.
virginiana L.

Cyclanthaceae

Carludovica
macropoda Klotzsch
microphylla Oerst.
palmata R. et P.
Cyclanthus
bipartitus Poit.

Cyperaceae

Cyperus
alternifolius L.
congestus Vahl
cyperoides O. K.
dilutus Vahl
elegans Link.
ferax Rich.
malaccensis Lam.
natalensis Hochst.
pilosus Vahl
platystylus R. Br.
polystachyus Rottb.
pulcherrimus Willd.
Fimbristylis
annua R. et Sch.
asperrima Boeck.
ferruginea Miq.
globulosa Kth.
glomerata Nees
miliacea Vahl

Fimbristylis
subbispicata Nees
tetragona R. Br.
Fuirena
glomerata Lam.
Heleocharis
fistulosa Link.
„ var. ochrostachys
plantaginea R. Br.
setacea R. Br.
variegata Presl
„ var. laxiflora
Kyllinga
monocephala Rottb.
Lepironia
mucronata Rich.
Mapania
bancana B. et H.
humilis Vill.
Rhynchospora
aurea Vahl
Scirpus
erectus Poir.
grossus L. f.
Scleria
elata Thw.
lithosperma Roxb.
melanostroma Boeck.
sumatrensis Retz

Dioscoreaceae

Dioscorea
alata L.
bulbifera L. (Bulbilles).
„ var. suavior (Bulbilles)
hispida Dennst.
pentaphylla L.

Eriocaulaceae

Eriocaulon
cinereum R. Br.
truncatum Ham.

Flagellariaceae

Flagellaria
indica L.
„ var.

Gramineae

Anastrophus
compressus Schlechtd.
Andropogon
aciculatus Retz
amboinicus Merr.
brevifolius Sw.
contortus L.
halepensis Brot.
intermedius R. Br.
Martini Roxb.
modestus Back.
Nardus L.
„ var. ceriferus Hack.
parviflorus Back.
pertusus Willd.
procerus R. Br.
rufus Kunth
sericeus R. Br.
Sorghum Brot.
„ var. propinquus Hack.
triticus R. Br.
zizanioides Urban
Apluda
mutica L.
Arthraxon
hispida Merr.
Arundinella
nepalensis Trin.
setosa Trin.
Bambusa
Bambos Druce
Briza
maxima L.
Cenchrus
inflexus R. Br.
tribuloides L.
Centhotheca
latifolia Trin.
Chloris
barbata Sw.
digitata Steud.
Gayana Kunth
Coix
Lacryma Jobi L.
„ „ „ var. palustris Back.

Coridochloa
cimicina Nees
Cynodon
Dactylon Pers.
Dactyloctenium
aegyptium Richt.
Dendrocalamus
strictus Nees
Digitaria
sanguinalis Scop.
Diplachne
polystachya Back.
tectoneticola Back.
Eleusine
indica Gaertn. f. corocana Hook. f.
Eragrostis
amabilis O. K.
aspera Nees
elongata Jacq.
japonica Trin.
mexicana Link.
nigra Nees
unioloides Nees
Erianthus
arundinaceus Jeswiet
ciliaris Jeswiet
var. elegans Jesw.
fulvus Nees
Euchlaena
mexicana Schrad.
Hoplismenus
compositus P. B.
undulatifolius P. B.
Hymenachne
indica Buese
interrupta Buese
Imperata
cylindrica Beauv. var. Koenigii Benth.
Isachne
globosa O. K.
Ischaemum
laxum R. Br.
muticum L.
rugosum Salisb.
timorense Kunth
Leptochloa
chinensis Nees
Lophatherum
gracile Brongn.
Melinis
minutiflora Beauv.
var. pilosa Stapf.
Miscanthus
japonicus Anderss.
Mnesithea
laevis Kunth
pubescens Ridl.
Neyraudia
madagascariensis Hk. f.
Oryza
granulata Nees et Arn.
latifolia Desv.
sativa L.
„ var.
„ var. rubribarbis
Panicum
ambiguum Trin.
barbatum Lamk.
caudiglume Hack.
colonum L.
crassi-apiculatum Merr.
Crus galli L.
distachyum L.
flavidum Retz
montanum Roxb.
muticum Forsk.
palmifolium Willd.
paludosum Roxb.
repens L.
reptans L.
stagninum Retz
trichoides Swartz
viride L. var. italicum L.
Paspalum
Royleanum Nees
scrobiculatum L.
vaginatum Swartz
Pennisetum
macrostachyum Trin.
orientale Rich.
triflorum Nees
Phyllostachys
Kumasaca Munro
Pogonatherum
paniceum Hack.
Pollinia
ciliata Trin.
Polytoca
bracteata R. Br.
macrophylla Benth.

Rottboellia
exaltata L. f.
glandulosa Trin.
Saccharum
officinarum L.
spontaneum L.
Sclerachne
punctata R. Br.
Setaria
glauca P. B.
Spinifex
littoreus Merr.
„ var. longifolius R. Br.
Sporobolus
Berteroanus Hitchc. et Chase
diander P. B.
Themeda
arguens Hack.
gigantea Hack.
imberbis Cooke
Thesanolaena
maxima O. K.
Tricholaena
rosea Nees
„ var.
Xerochloa
imberbis R. Rr.
Zea
Mays L.
Zoysia
Matrella Merr.
„ var. tenuifolia Willd.

Haemodoraceae

Xiphidium
coeruleum Aubl.
var. albidum

Hydrocharitaceae

Blyxa
malayana Ridl.
Hydrilla
verticillata Presl
Ottelia
alismoides Pers.

Iridaceae

Babiana
stricta Ker-Gawl.
Belamcanda
chinensis Lem.
„ var. humilis
Eleutherine
americana Merr.
Gladiolus
gandavensis Van Houtte
hybridus Hort.
Lemoinei Hort.
Marica
caerulea Ker-Gawl.
gracilis Herb.
humilis Lodd.
Moraea
bicolor Steud.
iridioides L.
Trimeza
martinicensis Herb.
Tritonia
crocosmiflora Hort.

Liliaceae

Agapanthus
umbellatus l'Hérit.
„ „ var. alba
Allium
fistulosum L.
Aloë
Schimperi Todd.
vera L.
Asparagus
falcatus L.
gracilis Royle
officinalis L.
plumosus Bak.
racemosus Willd.
scaber Brign.
Sprengeri Regel
virgatus Bak.
Bulbine
longiscapa Willd.
semibarbata Haw.
Chlorophytum
amaniense Engl.
elatum R. Br.
laxum R. Br.
f. javanicum
Cordyline
terminalis Kth.

Dianella
bancana Miq.
caerulea Sims.
montana Bl.
Disporum
chinense Don
Eustrephus
latifolius R. Br.
Galtonia
candicans Decne.
Gloriosa
abyssinica Rich.
superba L.
virescens Lindl.
Kniphofia
Uvaria Hook.
Lilium
longiflorum Thunb.
Lomatophyllum
borbonicum Willd.
Nothoscordum
inodorum A. & G.
Phormium
tenax Forst.
Pleomele
angustifolia N. E. Br.
flexuosa N. E. Br.
Godseffiana N. E. Br.
Sansevieria
canaliculata Carr.
longiflora Sims.
trifasciata Prain
„ var. Laurentii N. E. Br.
zeylanica Willd.
Scilla
hyacinthina Back.
Smilax
glyciphylla Sm.
leucophylla Bl.
macrocarpa Bl.
Yucca
gloriosa L.

Marantaceae

Calathea
grandiflora Schum.
Lietzei E. Morr.
ornata Koern.
undulata Lind. et And.
zebrina Lind.
Cominsia
minor Val.
Donax
canniformis Schum.
Maranta
arundinacea L.
„ „ fol. var
splendida Hort.
Phrynium
minutiflorum Val.
Stromanthe
sanguinea Sond.
Thalia
geniculata L.

Musaceae

Heliconia
Bihai L.
dasyantha Koch. et Bouché.
indica Lamk.
metallica Planch. et Lind.
Musa
brachycarpa Back.
glauca Roxb.
ornata Roxb.
zebina Van Houtte.
„ var. cerifera
Ravenala
madagascariensis Sonn.

Palmae

Acanthophoenix
rubra Wendl.
Acoelorrhaphe
Wrightii Wendl.
„ var.
„ var. hondurensis Becc.
Actinophloeus
ambiguus Becc.
angustifolius Becc.
Macarthurii Becc.
„ var.
praemorsus Becc.
propinquus Becc.
„ var. keyensis Becc.
Sanderianus Becc.
Actinorrhytis
calapparia Wendl.

hospitus Burret
cuneatus Burret

Adelonenga
pterophylla Becc.
Archontophoenix
Alexandrae Wendl. et Drude.
Areca
Alicae F. v. Muell.
Catechu L.
„ var. alba Bl.
glandiformis Houtt.
pumila Bl.
triandra Roxb.
„ var.
„ var. bancana Scheff.
Arecastrum
Romanzoffianum Becc.
Arenga
ambong Becc.
Engleri Becc.
microcarpa Becc.
obtusifolia Mart.
pinnata Merr.
Astrocaryum
aculeatum Mey.
gynacanthum Mart.
Malybo Karst.
vulgare Mart.
Attalea
Cohune Mart.
macrocarpa Lindl.
spectabilis Mart.
Bactris
major Jacq.
minor Jacq.
speciosa Karst.
Barbosa
pseudo-cocos Becc.
Bentinckia
nicobarica Becc.
Borassus
flabellifer L.
„ „ fr. minor.
Calamus
arborescens Griff.
caesius Bl.
Reinwardtii Mart.
Scipionum Lour.
Calyptrocalyx
spicatus Bl.
Caryota
Cumingii Lodd.
Caryota
furfuracea Bl.
Griffithii Becc.
„ var.
mitis Lour.
Rumphiana Mart.
„ var. Albertii
Chrysalidocarpus
lucubensis Becc.
lutescens Wendl.
madagascariensis Becc.
Cocos
nucifera L.
„ var. angustifolia
„ var. dilie
„ var. dioica
„ var. incarnata
„ var. macrocarpa Hassk.
„ var. microcarpa Hassk.
„ var. oblonga Hassk.
„ var. pumila Hassk.
„ var. stupposa Hassk.
„ var. subglobosa Hassk.
„ var. viridis Hassk.
Weddelliana H. Wendl.
Corypha
utan Lamk.
Cyrtostachys
Lakka Becc.
Renda Bl.
Daemonorops
angustifolius Mart.
elongatus Bl.
fissus Bl. fr. major.
„ „ „ minor.
„ var. cinnamomeus Becc.
Hallierianus Becc.
Hystrix Mart.
intermedius Mart.
„ var. nudinervis Becc.
Jenkinsianus Mart.
longipes Mart.
longispathus Becc.
melanochaetes Bl.
oblongus Mart.

all Caryota species
even unnamed.

Daemonorops
palembanicus Bl.
ruber Bl.
trichrous Miq.
Dictyosperma
album Wendl. et Dr.
Didymosperma
porphyrocarpa Wendl. et Dr.
Drymophloeus
olivaeformis Mart.
Elaeis
guineensis Jacq.
„ var. Lyzon
Eugeissona
tristis Griff.
Euterpe
oleraceae Mart.
„ var.
Geonoma
Pohliana Mart.
Glaziova
Treubiana Becc.
Gronophyllum
microcarpum Scheff.
Gulubia
costata Becc.
moluccana Becc.
Heterospathe
elata Scheff.
Iguanura
Wallichiana Hook. f. var. major Becc.
Korthalsia
debilis Bl.
rigida Bl.
Latania
aurea Dunc.
Commersonii Gmel.
Loddigesii Mart.
Verschaffeltii Lem.
Licuala
amplifrons Miq.
aruensis Becc.
gracilis Bl.
grandis Wendl.
paludosa Griff.
pumila Bl.
Rumphii Bl.
spinosa Thunb
Linospadix
Petrickiana Hort.
Livistona
altissima Zoll.
„ „ fr. major.
australis Mart.
chinensis R. Br.
cochinchinensis Mart.
decipiens Becc.
inermis R. Br.
Jenkinsiana Griff.
Kingiana Becc.
rotundifolia Mart.
„ „ fr. minor
Loxococcus
rupicola Wendl.
Martinezia
caryotaefolia H. B. K.
„ var.
erosa Lind.
truncata Brongn.
Maximiliana
caribaea Griseb. et Wendl.
Metroxylon
hermaphroditum Hassk.
laeve Mart.
longispinum Mart.
Rumphii Mart.
Nenga
Schefferiana Becc.
„ var.
Wendlandiana Scheff.
Nephrosperma
Van Houtteana Balf. f.
Nipa
fruticans Wurmb
Normanbya
Muelleri Becc.
Oncosperma
fasciculatum Thw.
filamentosum Bl.
horridum Scheff. fr. major.
„ „ „ minor.
Orania
aruensis Becc.
macrocladus Mart.
philippinensis Scheff.
Orbignya
Lydiae Drude

Oreodoxa
- acuminata Willd.
- oleracea Mart.
- „ var. flexuosa
- regia H. B. K.

Phoenix
- farinifera Roxb.
- humilis Royle
- pusilla Gaertn.
- reclinata Jacq.
- „ var.

Pholidocarpus
- mucronata Becc.

Phytelephas
- Poeppigii Gaud.

Pigafettia
- elata Becc.

Pinanga
- coronata Bl.
- disticha Bl.
- Kuhlii Bl.
- „ var. alba
- „ var. sumatrana Scheff.
- maculata Porte
- malayana Scheff.
- patula Bl.
- spectabilis Bull.

Plectocomia
- elongata Mart.

Ptychandra
- glauca Scheff.

Ptychococcus
- paradoxus Becc.

Ptychorhaphis
- augusta Becc.

Ptychosperma
- elegans Bl.
- Schefferi Becc.

Raphia
- Hookeri G. Mann. et Wendl.
- pedunculata Beauv.

Rhopaloblaste
- ceramica Burr.

Sabal
- Adansonii Guerns.
- mauritiiformis Griseb. et Wendl.
- mexicanum Mart.
- Palmetto Lodd.

Scheelea
- insignis Karst.
- regia Karst.

Stevensonia
- grandifolia Duncan

Syagrus
- Sancona Karst.
- Weddelliana Becc.

Thrinax
- Morrisii Wendl.

Veitchia
- Joannis Wendl.

Verschaffeltia
- splendida Wendl.

Wallichia
- disticha Anders.

Zalacca affinis Griff.
- Blumeana Mart.
- dubia Becc.
- edulis Bl.

Pandanaceae

Freycinetia
- funicularis Merr.

Pandanus
- affinis Kurz
- atrocarpus Griff.
- Bidur Jungh.
- furcatus Roxb.
- labyrinthicus Kurz
- Leram Jones
- luzonensis Merr.
- nitidus Kurz
- parvus Ridl.
- polycephalus Lamk.
- tectorius Soland.
- utilis Bory

Pontederiaceae

Monochoria
- hastata Solms.
- vaginalis Presl.

Stemonaceae.

Stemona
- javanica Engl.
- moluccana Wright

Taccaceae

Tacca
- flabellata J. J. S.
- lancifolia Z. et M.
- leontopetaloides O.K.
- macrantha Limpr.
- palmata Bl.

Velloziaceae

Barbacenia
- Rogieri Hort.

Zingiberaceae

Achasma
- foetens Val.

Alpinia
- Hookeriana Val.
- Hulstynii Val.
- malaccensis Rosc.
- melanocarpa Ridl.
- Nieuwenhuisii Val.
- oxymitra Schum.
- Romburghiana Val.
- Schumanniana Val.
- speciosa Schum.

Amomum
- aculeatum Roxb.
- „ var. ciliatum Val.
- „ var. papuanum Val.
- „ var. sulianum Val.
- Cardamomum Willd.
- „ var.
- gracile Bl.
- longipes Val.
- truncatum Gagn.

Costus
- globosus Bl.
- , var. hirsutus Val.
- Lucanusianus Schum.
- Malorteanus Wendl.
- niveus Meyer
- Rumphianus Val.
- „ var. laevis Val.
- sericeus Bl.
- speciosus Sm.
- „ var. hirsutus Bl.
- „ var. scabriusculus Bl.

Curcuma
- aeruginosa Roxb.
- aromatica Salisb.
- domestica Val.
- Kunstleri Bak.
- Zedoaria Rosc.

Elettaria
- solaris Bl.

Globba
- maculata Bl.
- var. albiflora Val. (Bulbilles).
- paniculata Val. (Bulbilles).
- paucibractea Val. (Bulbilles).
- Schomburgkii Hook. (Bulbilles).
- strobilifera Z. et M.

Hornstedtia
- elongata Schum.
- minor Val.
- mollis Val.

Nicolaia
- atropurpurea Val.
- intermedia Val.
- speciosa Horan.
- „ var. magnifica Val.

Tapeinochilus
- ananassae Schum.

Zingiber
- gramineum Bl.
- „ var. genuina f. apicalis Val.
- odoriferum Bl.

DICOTYLEDONAE

Acanthaceae

Acanthus
- ilicifolius L.
- „ var. subintegra Miq.
- montanus Andr.

Andrographis
- echioides Nees
- paniculata Nees

Anisacanthus
- Wrightii A. Gray

Aphelandra
- aurantiaca Lindl.

Asystasia
gangetica T. And.
„ var. albiflora.
intrusa Bl.
Barleria
hybrida Hort.
involucrata Nees
var. elata Clarke
lupulina Lindl.
Prionitis L.
Beloperone
plumbaginifolia Nees
Blepharis
exigua Val.
Brillantaisia
owariensis Beauv.
Daedalacanthus
macrophyllus And.
Dicliptera
Burmannii Nees
Ecbolium
Linneanum Kurz
Eranthemum
fastigiatum O. K.
macrophyllum Wall.
nervosum R. Br.
purpurascens And.
Hallieracantha maxima Moore
Hemigraphis
alternata And.
hirta And.
reptans Schum.
Hygrophila
angustifolia R. Br.
corymbosa Lind.
Hypoestes
floribunda R. Br.
moschata F. v. Muell.
polythyrsa Miq.
populifolia Miq.
Isochoriste
javanica Miq.
Jacobinia
Ghiesbrechtiana Benth. & Hook. f.
magnifica Lind.
Justicia
Adhatoda L.
ochroleuca Bl.
procumbens L.
ventricosa Wall
Justicia
vittata Hall. f.
Peristrophe
montana Nees
Rhinacanthus
Nasuta Kurz
Ruellia
amoena Nees
aruensis Moore
biflora Pav.
formosa Andr.
lanceolata Morong.
napifera Zoll.
rosea Mart.
solitaria Vell.
tuberosa L,
Ruspolia
pseuderanthemum Lind.
Sphinctacanthus
subsessilis Hall. f.
Staurogyne
elongata O.K.
Strobilanthes
cernuus Bl.
laevigatus Clarke
Thunbergia
affinis Moore
alata Boj.
„ „ var. alba
„ „ „ flava
„ „ „ lutea
coccinea Wall.
fragrans Roxb.
grandiflora Roxb.
„ fl. albis
laurifolia Lindl.
natalensis Hook.
Whitfieldia
lateritia Hook.

Aizoaceae

Mollugo
pentaphylla L.

Amarantaceae

Aerva
lanata Juss.
sanguinolenta Bl.
„ var. viridis
Allmania
nodiflora R. Br.

Alternanthera
philoxeroides Griseb.
Amarantus
atropurpureus Roxb.
Blitum L.
caudatus L.
gangeticus L.
hypochondriacus L.
spinosus L.
tricolor L.
Celosia
argentea L.
cristata L.
„ „ var. pyramidalis
trigyna L.
Cyathula
prostrata Bl.
Gomphrena
globosa L.
„ fl. purpureis
„ var. albiflora Miq.
„ var. Haageana
Iresine
Verschaffeltii Lem.
Pupalia
lappacea Moq.
„ „ var.
Telanthera
philoxeroides Moq.

Anacardiaceae

Anacardium
occidentale L.
Bouea
burmanica Griff.
macrophylla Griff.
Buchanania
arborescens Bl.
Dracontomelon
mangiferum Bl.
„ „ var. puberulum Engl.
Euroschinus
falcatus Hook. f.
Gluta
Renghas L.
Mangifera
altissima Miq.
caesia Jack
foetida Lour.
Gedebi Miq.
Mangifera
indica L.
laurina Bl.
macrocarpa Bl.
rigida Bl.
similis Bl.
Melanorrhoea
Wallichii Hook. f.
Rhus
succedanea L.
Semecarpus
Anacardium L.f.
heterophylla Bl.
Spondias
borbonica Bak.
dulcis Forst.
lutea L.

Annonaceae

Alphonsea
javanica Scheff.
Teysmannii Boerl.
ventricosa Hk. f. et Th.
Annona
glabra L.
montana Macfad.
muricata L.
Artabotrys
hamatus Bl.
odoratissimus R. Br.
„ var. intermedius Boerl.
siamensis Miq.
suaveolens Bl.
„ var. parviflorus Miq.
Cananga
odorata Hook. f. et Th.
Cyathocalyx
sumatranus Scheff.
zeylanicus Champ.
Dasymaschalon
cleistogama Burck.
Desmos
cochinchinensis Lour.
Goniothalamus
Tapis Miq.
Melodorum
manubriatum Hk. f. et Th.

Mezzettia
leptopoda King
parviflora Becc.
„ var. floribunda Boerl.
Mitrephora
celebica Scheff.
macrantha Hassk.
polypyrena Miq.
reticulata Hook. f. et Th.
„ var. acutata Boerl.
Teysmannii Scheff.
Monodora
tenuifolia Benth.
Orophea
hexandra Bl.
trigyna Miq.
Oxymitra
cuneiformis Zoll.
Polyalthia
affinis T. et B.
Bemban Boerl.
brevipedunculata Boerl.
canangioides Boerl.
„ var. angustifolia Boerl.
glauca Boerl.
lateriflora King.
„ var. Kallak Boerl.
„ „ macrophylla Boerl.
„ „ siamensis Boerl.
littoralis Boerl.
Popowia
suberosa Thw.
pisocarpa Endl.
ramosissima Hk. f. et Th.
Stelechocarpus
Burahol Hk. f. et Th.
„ var. longiflorus Sch.
Schefferi Boerl.
Trivalvaria
macrophylla Miq.
Unona
coelophloea Scheff.
Uvaria
andamanica King
concava T. en B.
hirsuta Jack
lamponga Scheff.
Uvaria
littoralis Bl.
„ var. Miquelii Boerl.
purpurea Bl.
„ var. flava Scheff.
Rosenbergiana Scheff.
rufa Bl.
Xylopia
Curtisii King

Apocynaceae.

Allamanda
cathartica L.
„ „ var. Williamsii Hort.
neriifolia Hook.
Alstonia
macrophylla Wall.
scholaris R. Br.
Alyxia
stellata R. & S.
Anodendron
paniculatum DC.
Beaumontia
grandiflora Wall.
Carissa
spinarum DC.
Cerbera
batjanica T. et B.
floribunda K. Schum.
Manghas L.
Chilocarpus
compositus Bl.
densiflorus Bl.
denudatus Bl.
Conopharyngia
longiflora Stapf
Dyera
costulata Hook. f.
Kopsia
albiflora Boerl.
flavida Bl.
fruticosa DC.
Landolphia
owariensis Beauv.
Lepiniopsis
ternatensis Val.
Leuconotis
eugeniifolius DC.

Lochnera
rosea Reichb.
„ „ fl. albis
„ „ var.
Melodinus
laevigatus Bl.
micranthus Hook. f.
paniculata Burck
Ochrosia
coccinea Miq.
glomerata Val.
Odontadenia
grandiflora Schum.
Parameria
barbata Schum.
Plumieria
acuminata Ait.
alba L.
hypoleuca Gasparr.
rubra L.
Rauwolfia
canescens L.
fruticosa Burck
serpentina L.
sumatrana Jack
var. spectabilis
f. macrocarpa
„ „ spectabilis
vomitoria Afzel.
Strophanthus
caudatus Kurz
„ var. undulata Franch.
Cumingii DC.
dichotomus DC.
var. Merckii DC.
Tabernaemontana
aurantiaca Gaud.
coronaria Willd.
fagraeoides Miq.
orientalis R. Br.
pubescens T. et B.
sphaerocarpa Bl.
Wallichiana Steud.
Tanghinia
venenifera Poir.
Thevetia
neriifolia Juss.
Voacanga
grandifolia Rolfe
Willughbeia
firma Bl.
Willughbeia
Romburghiana Pierre
Wrightia
tomentosa R. & Sch.
zeylanica R. Br.

Aquifoliaceae

Ilex
bogorensis Loes.
cassine L.
cymosa Bl.

Araliaceae

Arthrophyllum
diversifolium Bl.
Boerlagiodendron
eminens J. J. S.
pachycephalum Harms
palmatum Harms
Delarbrea
Lauterbachii Harms
Heteropanax
fragrans Seem.
Macropanax
dispermus Ktze.
oreophilum Miq.
Nothopanax
fruticosum Miq.
pinnatum Miq.
Oreopanax
guatemalense DC. et Pl.
Polyscias
elegans Harms
Schefflera
aromatica Harms
corona-Sylvae Vig.
elliptica Harms
farinosa J. J. S.
macrostachya Harms
obovata C. Koch
rigida Harms
Trevesia
palmata Vis.
sundaica Miq.

Aristolochiaceae

Apama
tomentosa Engl.
„ „ fl. flavis.
„ „ „ purpureis.

Aristolochia
arborea Linden.
brasiliensis Mart. et Zucc.
elegans Mast.
fimbriata Cham.
grandiflora Sw.
indica L.
pandurata Jacq.
ringens Vahl
Tagala Cham.
trilobata L.

Asclepiadaceae

Asclepias
curassavica L.
Calotropis
gigantea Ait.
Cryptostegia
grandiflora R. Br.
Dregea
volubilis Benth.
Gomphocarpus
fruticosus R. Br.
physocarpus E. Mey.
Gymnema
syringifolium Boerl.
Hoya
diversifolia Bl.
multiflora Bl.
Kanahia
laniflora R. Br.
Marsdenia
velutina R. Br.
Periploca
nigrescens Afzel.
Sarcolobus
globosus Wall.
Telosma
cordata Merr.
Tylophora
tenuis Bl.

Balsaminaceae

Hydrocera
triflora W. et A.
Impatiens
Balsamina L.
chonoceras Hassk.
Holstii Engl.
Impatiens
javensis Steud.
platypetala Lindl.
„ fl. albis.
Sultanii Hook. f.

Basellaceae

Basella
rubra L.
„ var.

Begoniaceae

Begonia
bipinnatifida J. J. S.
coccinea Hook.
glabra Ruiz.
goegoënsis N. E. Br.
heracleifolia Ch. et Schl.
hybrida Hort.
imperialis Lem.
„ var. smaragdina Hort.
isoptera Dryand
lepida Bl.
Lindleyana Walp.
manicata Cels.
phyllomaniaca Mart.
platanifolia Schott
Rex Putz.
ricinifolia A. Dtr.
robusta Bl.
rubella Buch.—Ham.
Verschaffeltii Reg.

Berberidaceae

Berberis
Fortunei Lindl.
nepalensis Spreng.
var. Leschenaultiana Hk. f. et Th.
sinensis Desf.
Mahonia
Fortunei Fedde
Nandina
domestica Thunb.
„ var. japonica.

Betulaceae

Alnus
japonica Thunb.

Bignoniaceae

Amphilophium
molle Cham. & Schl.
Bignonia
exoleta Vell.
unguis-cati L.
Campsis
radicans Seem.
Crescentia
cujete L.
Cydista
aequinoctialis Miers.
Dolichandrone
spathacea Schum.
Haplophragma
macrolobum v. St.
Heterophragma
adenophyllum Seem.
Jacaranda
filicifolia Don.
Kigelia
aethiopica Decne.
Markhamia
stipulata Seem.
Millingtonia
hortensis L. f.
Oroxylum
indicum Vent.
„ „ var. citrinum v. St.
Pandorea
jasminoides K. Sch.
Parmentiera
cerifera Seem.
Perichlaena
Richardii H. Baill.
Pithecoctenium
echinatum Schum.
Radermachera
glandulosa Miq.
Spathodea
campanulata Beauv.
Stenolobium
stans Seem.
Stereospermum
chelonoides DC.
fimbriatum DC.
suaveolens DC.
Tecoma
capitata Bur. et K. Schum.
Tecomaria
capensis Spach.

Bixaceae

Bixa
Orellana L.

Bombacaceae

Bombax
album Bakh.
Ceiba
pentandra Gaertn.
„ var. indica Bakh.
Durio
ceylanicus Gard.
kutujensis Becc. f. luteus.
„ „ ochroleucus.
zibethinus Murr.
Gossampinus
heptaphylla Bakh.
Valetonii Bakh.
Neesia
altissima Bl.
Pachira
affinis Bakh.

Borraginaceae

Cochranea
anchusifolia Gurke
Cordia
asperrima DC.
Collococca L.
subcordata Lam.
subpubescens DC.
Ehretia
microphylla Lam.
Heliotropium
indicum L.
Myosotis
palustris Lam.
Nonnea
rosea Link.
Tournefortia
Horsfieldii Miq.

Burseraceae

Canarium
- aspermum Benth.
- balsamiferum Willd.
- commune L.
- decumanum Gaertn.
- hirsutum Willd.
- kipella Miq.
- littorale Bl.
- Mehenbethene Gaertn.
- oleosum Engl.
- patentinervium Miq.
- pseudodecumanum Hochr.
- Vrieseanum Engl.
- zeylanicum Bl.

Garuga
- pinnata Roxb.

Protium
- javanicum Burm.

Cactaceae

Cereus
- grandiflorus Mill.
- peruvianus Mill.

Opuntia
- monacantha Haw.

Campanulaceae

Campanula
- bononiensis L.

Campanumoea
- javanica Bl.

Isotoma
- longiflora Presl

Lobelia
- laxiflora H. B. K.
- succulenta Bl.

Platycodon
- grandiflorum DC.
- „ fl. albis.

Pratia
- montana Hassk.
- nummularia Kurz

Sphenoclea
- zeylanica Gaertn.

Capparidaceae

Capparis
- Heyneana Wall.
- micracantha DC.
- pubiflora DC.

Cleome
- ciliata Schum. & Thonn.

Crataeva
- Nurvala Ham.

Gynandropsis
- speciosa DC.
- „ var. alba

Polanisia
- viscosa DC.

Caprifoliaceae

Sambucus
- canadensis L.
- javanica Reinw.

Viburnum
- lutescens Bl.
- sambucinum Bl.

Caricaceae

Carica
- papaja L.

Caryophyllaceae

Agrostemma
- Githago L.

Dianthus
- chinensis L.

Drymaria
- cordata Willd.

Polycarpaea
- corymbosa Willd

Saponaria
- officinalis L.

Silene
- Armeria L.
- „ fl. albis.

Casuarinaceae

Casuarina
- equisetifolia Forst.
- glauca Sieb.
- Junghuhniana Miq.
- Rumphiana Miq.
- sumatrana Jungh.

Celastraceae

Catha
- edulis Forsk.

Celastrus
- japonicus C. Koch
- paniculata Willd.

Euonymus
- attenuatus Wall.
- javanicus Bl.
- parviflorus Burck

Gymnosporia
- emarginata Thw.

Siphonodon
- celastrinus Griff.

Chenopodiaceae

Chenopodium
- amaranticolor Coste et Reyn.
- ambrosioides L.
- „ f. pubescens.
- „ var. anthelminticum Berth.

Chloranthaceae

Chloranthus
- officinalis Bl.

Cochlospermaceae

Cochlospermum
- balicum Boerl.
- vitifolium Spr.
- „ var. trinitatis Boerl.

Combretaceae

Combretum
- abbreviatum Engl.
- chinense Roxb.
- decandrum Roxb.
- latifolium Bl.
- pilosum Roxb.
- punctatum Bl.
- quadrangulare Kurz
- sundaicum Miq.

Terminalia
- arborea K. et V.
- Arjuna W. et A.
- belerica Roxb.
- bialata Kurz
- Catappa L.
- chebula Retz
- edulis Merr.
- mollis T. et B.
- sumatrana Miq.

Compositae

Achillea
- condensata Miq.
- Millefolium L.

Adenostemma
- Lavenia O. K.

Ageratum
- conyzoides L.
- mexicanum Sw.

Arctotis
- grandis Thunb.
- stoechadifolia Berg.

Artemisia
- lactiflora Wall.
- scoparia W. et K.
- vulgaris L.

Aster
- ericoides L.
- incisus Fisch.
- novae-angliae L.
- versicolor Willd. f. albiflora.

Asteromoea
- indica Bl.

Baltimora
- recta L.

Bidens
- chinensis Willd.
- leucantha Willd.
- pilosus L.

Blumea
- balsamifera DC.
- lacera DC.
- sylvatica DC.

Boltonia
- asteroides L'Hérit.

Calendula
- arvensis L.
- officinalis L.

Centaurea
- americana Nutt.

Centipeda
- orbicularis Lour.

Centratherum
- intermedium Less.

Chrysanthemum
- Leucanthemum L.
- maximum Ramond.

Clibadium
- surinamense L.
- „ var. asperum Bak.

Coreopsis
bicolor Bosse
Drummondii Torr & Gray
grandiflora Nutt.
hybrida Hort.
tinctoria Nutt.
Cosmos
bipinnatus Cav.
caudatus H. B. K.
hybridus Hort.
Crepis
japonica Benth.
Dahlia
hybrida Hort.
Maxonii Saff.
Eclipta
alba Hassk.
„ var. erecta
Elephantopus
scaber L.
spicatus Aubl.
Eleutheranthera
ruderalis Sch.
Epaltes
australis Less.
Erechtites
hieracifolia Rafin.
valerianifolia DC.
Erigeron
linifolius Willd.
Eupatorium
ianthinum Hemsl.
pallescens DC.
„ var. javanicum Boerl.
riparium Regel
triplinerve Vahl
Ferdinanda
eminens Lag.
Gaillardia
Drummondii DC.
grandiflora Hort.
pulchella Fouger.
Galinsoga
brachystephana Reg.
parviflora Cav.
Gerbera
Jamesonii Bol.
Grangea
maderaspatana Poir.
Guizotia
oleifera DC.
Gynura
procumbens Back.
Helenium
tenuifolium Nutt.
Helianthus
angustifolius L.
annuus L.
„ var. macrocarpus DC.
argophyllus Torr. et Gray
Bolanderi Gray
debilis Nutt. var.
„ var. cucumerifolius A. Gray
doronicoides Lam.
laetiflorus Pers.
Helichrysum
bracteatum Andr.
Lactuca
indica L.
Lagascea
mollis Cav.
Laggera
purpurascens Schultz
Matricaria
inodora L.
nigellaefolia DC.
Montanoa
grandiflora Hemsl.
Pluchea
indica Less.
Rolandra
argentea Rottb.
Rudbeckia
columnaris Pursh.
„ var. pulcherrima Torr. et Gray
laciniata L.
purpurea L.
speciosa Wend.
Senecio
Notonia Back.
Petasitis DC.
sonchifolius Moench
Siegesbeckia
orientalis L.
Silybum
Marianum Gaertn.

Solidago
fuscata Desf.
serotina Ait.
Sonchus
arvensis L.
asper Vill.
Sparganophorus
Vaillantii Gaertn.
Spilanthes
Acmella Murr.
radicans Schrad.
Stifftia
chrysantha Mikan.
Synedrella
nodiflora Gaertn.
Tagetes
erecta L.
„ var. aurantiaca
lucida Cav.
patula L.
„ var. nana
Taraxacum
officinale Wigg.
Tithonia
diversifolia Gray
rotundifolia Blake
Tridax
procumbens L.
Verbesina
alata L.
ericulioides B. et H.
occidentalis Walt.
pinnatifida Cav.
virginica L.
Vernonia
arborea Ham.
chinensis Less.
Vittadinia
triloba DC.
Wedelia
biflora DC.
calendulacea Less.
glabrata B. et H.
„ var. luxurians
montana Boerl.
Xanthium
canadense Mill.
Zinnia
elegans Jacq.
Haageana Reg.
Zinnia
linearis Benth.
verticillata Andr.

Connaraceae

Agelaea
javanica Schellenb.
Connarus
ellipticus King
grandis Jack
luccus Schellenb.
mutabilis Bl.
parallelinervius Schellenb.
siamensis Schellenb.
sinensis Schellenb.
Hemiandra
villosa Schellenb.
Roureopsis
javanica Planch.
pubinervis Planch.
Santalodes
humile O. Ktze.
mimosoides O. Ktze.

Convolvulaceae

Aniseia
martinicensis Chois.
Argyreia
capitata Chois.
Hookeri Clarke
mollis Chois.
Bonamia
semidigyna Hall. f.
„ var. farinacea Hall. f.
Calonyction
aculeatum House
Convolvulus
tricolor L.
Erycibe
parvifolia Hall. f.
Rheedii Bl.
tomentosa Bl.
Evolvulus
alsinoides L.
Hewittia
bicolor W. et A.
var. concolor
sublobata O. K.
var. concolor

Ipomoea
acuminata R. et Schl.
„ var.
Batatas Lam.
„ var.
denticulata Chois.
digitata L.
hederacea Jacq.
hederifolia L.
heterophylla R. Br.
Horsfalliae Hook.
Leari Paxt.
longiflora R. Br.
obscura Ker-Gawl.
Pes caprae Sweet.
Pes tigridis L.
sinuata Orteg.
trichosperma Bl.
triloba L.
tuberosa L.
verrucosa Bl.
Jacquemontia
Martii Chois.
Lepistemon
flavescens Bl.
urceolatus F. v. Muell.
Merremia
emarginata Hall. f.
gemella Hall. f.
hastata Hall. f.
nymphaeifolia Hall. f.
quinquefolia Hall. f.
umbellata Hall. f.
var. occidentalis Hall. f.
Operculina
Turpethum Manso
Porana
volubilis Burm.
Quamoclit
coccinea Moench
pinnata Boj.
„ var. albiflora Hall.

Cornaceae

Alangium
begoniifolium Baill.
costatum Wang.
javanicum Wang.
salviifolium Wang.
Aucuba
japonica Thunb.
Cornus
capitata Wall.
Marlea
tomentosa Endl. var.
„ rotundifolia K. et V.

Crassulaceae

Kalanchoe
laciniata DC.
pinnata Pers.

Cruciferae

Hesperis
matronalis L.
Nasturtium
indicum DC.

Cucurbitaceae

Alsomitra
sarcophylla Roem.
Coccinia
cordifolia Cogn.
Cucumis
metuliferus E. Mey.
Cucurbita
villosa Bl.
Gymnopetalum
leucostictum Cogn.
Luffa
acutangula Roxb.
cylindrica Roem.
Macrozanonia
macrocarpa Cogn.
Melothria
maderaspatana Cogn.
Momordica
Charantia L.

Cunoniaceae

Callicoma
serratifolia Andr.
Schizomeria
serrata Val.
Weinmannia
fraxinea Smith

Dilleniaceae

Dillenia
indica L.
ovata Hook. f. et Th.
pentagyna Roxb.
retusa Thunb.
„ var. integra Boerl.
Saurauia
bracteosa DC.
cauliflora DC.
distasosa Korth.
nudiflora DC.
oligolepis Miq.
pendula Bl.
Reinwardtiana Bl.
Schumacheria
castaneifolia Vahl
Tetracera
borneensis Miq.
hirsuta Boerl.
moluccana Mart.
rigida Bl.
scaberrima Miq.
Wormia
excelsa Jack
mollissima Boerl.
ochreata Miq.
pteropoda Miq.
suffruticosa Griff.
triquetra Rottb.

Dipterocarpaceae

Anisoptera
marginata Korth.
Balanocarpus
bancanus Boerl.
sibogae Boerl.
Dipterocarpus
alata Roxb.
Dyeri Pierre
grandiflora Blanco
Hasseltii Bl.
intricata Dyer
littoralis Bl.
retusa Bl.
trinervis Bl.
turbinata Gaertn. f.
Doona
nervosa Thw.
zeylanica Thw.
Dryobalanops
aromatica Gaertn. f.
lanceolata Burck
Hopea
dryobalanoides Miq.
fagifolia Miq.
linggensis Boerl.
menggarawan Miq.
odorata Roxb.
Pierrei Hance
Shorea
balangeran Burck
cochinchinensis Pierre
compressa Burck
eximia Scheff.
lepidota Bl.
pinanga Scheff.
robusta Gaertn. f.
scaberrima Burck
selanica Bl.
seminis v. Sl.
Vatica
bancana Scheff.
bantamensis Burck
papuana Dyer
sumatrana v. Sl.
Teysmanniana Burck

Ebenaceae

Diospyros
affinis Thw.
Diepenhorstii Miq.
discolor Willd.
Ebenum Koen
macrophylla Bl.
malabarica Kostel.
maritima Bl.
montana Roxb.
Pseudo-ebenum K. et V.
siamensis Hochr.
subtruncata Hochr.
Maba
hermaphroditica Zoll.

Elaeagnaceae

Elaeagnus
latifolia L.

Elaeocarpaceae

Elaeocarpus
- angustifolius Bl.
- edulis T. et B.
- grandiflorus Smith
- obtusus Bl.
- oxypyrena K. et V.
- stipularis Bl.
- Teysmannii K. & V.
- Treubii Hochr.

Muntingia
- Calabura L.

Ericaceae

Gaultheria
- fragrantissima Wall.

Rhododendron
- javanicum Benn.

Vaccinium
- laurifolium Miq.
- varingifolium Miq.

Erythroxylaceae

Erythroxylon
- burmanicum Griff.
- Coca Lam.
- lanceum Boj.
- novogranatense Hieron.
- ovatum Cav.

Euphorbiaceae

Acalypha
- hybrida Hort.
- indica L.
- marginata Hort. f. Godseffiana.

Actephila
- javanica Miq.

Agyneia
- bacciformis Juss.

Aleurites
- moluccana Willd.
- trisperma Blanco

Antidesma
- Bunius Spreng.
- montanum Bl.

Aporosa
- arborea Muell. Arg.
- frutescens Bl.
- microcalyx Hassk.

Baccaurea
- bracteata Muell. Arg.
- deflexa Muell. Arg.
- dulcis Muell. Arg.
- javanica Muell. Arg.
- Motleyana Muell. Arg.
- multiflora Burck
- nanihua Merr.
- racemosa Muell. Arg.
- sanguinea J. J. S.
- sumatrana Muell. Arg.

Baliospernum Muell. Arg.
- montanum Muell. Arg.

Bischofia
- javanica Bl.

Blumeodendron
- Elateriospermum J. J. S.
- Tokbrai Kurz

Breynia
- cernua Muell. Arg.
- racemosa Muell. Arg.

Bridelia
- glauca Bl.
- minutiflora Hook. f.
- monoica Merr.
- obtusifolia J. J. S.
- stipularis Bl.

Cephalomappa
- malloticarpa J. J. S.

Chondrostylis
- bancana Boerl.

Cleistanthus
- collinus Benth.
- ferrugineus Muell. Arg.

Cnesmone
- javanica Bl.

Codiaeum
- variegatum Bl.
- „ var. moluccanum M. A.

Coelodepas
- bantamense Hassk.

Croton
- caudatus Geisel.
- „ f. multiglandulosus
- Guildingii Gris.
- Tiglium L.

Dalechampia
- bidentata Bl.

Dalechampia
- spathulata Baill. var. rosea

Drypetes
- assamica Pax & Hoffm.
- glabridiscus J. J. S.
- laevis Pax. et Hoffm.
- macrostigma J. J. S.

Euphorbia
- Fournieri Hort.
- geniculata Ort.
- heterophylla L.
- hirta L.
- plumerioides Teysm.
- prostrata Ait.
- pulcherrima Willd.
- sciadophila Boiss.
- serrulata Reinw.
- splendens Boj.
- thymifolia L.

Excoecaria
- Agallocha L.
- bicolor Hassk.

Flueggia
- virosa Baill.

Galearia
- filiformis Boerl.

Gelonium
- glomerulatum Hassk.

Glochidion
- arborescens Bl.
- borneense Boerl.
- insigne J. J. S.
- littorale Bl.
- molle Bl.
- obscurum Hook. f.
- philippicum Roxb.
- rubrum Bl.
- zeylanicum Juss. var. malayanum J. J. S.

Hevea
- brasiliensis Muell. Arg.

Homalanthus
- populneus O. K.

Homonoia
- javensis Muell. Arg.
- riparia Lour.

Hura
- crepitans L.

Jatropha
- Curcas L.
- gossypiifolia L.
- „ var. elegans Muell. Arg.
- multifida L.
- pandurifolia Andr. var. latifolia Pax
- podagrica Hook.

Joannesia
- Princeps Vell.

Macaranga
- triloba Muell. Arg.

Mallotus
- floribundus Muell. Arg.
- moluccanus Muell. Arg.
- philippinensis Muell. Arg.
- repandus Muell. Arg.
- resinosus Merr.
- tiliifolius Muell. Arg.

Manihot
- Glaziovii Muell. Arg.
- utilissima Pohl
- „ fol. var f. monstruosa

Ostodes
- paniculata Bl.

Pedilanthus
- bracteatus Boiss.
- tithymaloides Poit.

Phyllanthus
- buxifolius Muell. Arg.
- distichus Muell. Arg.
- Emblica L.
- gracilis Baill.
- indicus Muell. Arg.
- Hasskarlianus Muell. Arg.
- microcarpus Muell. Arg.
- f. glaber
- „ „ pubescens
- Niruri L.
- pulcher Wall.
- reticulatus Poir.
- „ f. glaber
- tenellus Muell. Arg. var. Roxburghianus Muell. Arg.
- Urinaria L.
- virgatus Forst.

Ricinus
communis L.
„ fr. inermibus
Sapium
indicum Willd.
sebiferum Roxb.
virgatum Hook. f.
Sauropus
androgynus Merr.
Llanosii Gage
rhamnoides Bl.
spectabilis Miq.
Strophioblachia
fimbricalyx Boerl.
Sumbaviopsis
albicans J. J. S.
Trewia
nudiflora L.

Fagaceae

Castanea
javanica Bl.
tunggurut Bl.
Quercus
costata Bl.
discocarpa Hance
lineata Bl.
var. Merkusii Wenz.
platycarpa Bl.
Rajah Hance
sericea Scheff.
sundaica Bl.
Teysmannii Bl.

Flacourtiaceae

Flacourtia
inermis Roxb.
Jangomas Raeusch.
montana J. Grah.
Rukam Zoll. et Mor.
Hemiscolopia
trimera v. Sl.
Homalium
tomentosum Benth.
Hydnocarpus
alpina Wight
venenata Gaertn.
Pangium
edule Reinw.

Ryparosa
javanica Kurz
Scolopia
spinosa Warb.
Taraktogenos
heterophylla v. Sl.
Xylosma
amara Kds.

Geraniaceae

Pelargonium
australe Jacq.
malvifolium Jacq.
Radula l'Hérit.
„ var. roseum Willd.
tomentosum Jacq.
villosum Sw.
zonale l'Hérit.

Gesneriaceae

Cyrtandra
heterophylla De Vr.
picta Bl.
Episcia
fulgida Hook. f.
Epithema
saxatile Bl.
Monophyllaea
Horsfieldii R. Br.
Rhynchoglossum
obliquum Bl.
Saintpaulia
kewensis Clarke
Sinningia
purpurea Hort.
speciosa Hiern
Trichosporum
albidum Nees

Gonystylaceae

Gonystylus
Miquelianus T. et B.

Goodeniaceae

Scaevola
frutescens Krause

Guttiferae

Calophyllum
Inophyllum L.
javanicum Miq.
Kunstleri King
„ var. longifolium Boerl.
soelattri Burm.
„ var. ceramicum Boerl.
„ „ Diepenhorstii Boerl.
„ „ Miquelii Boerl.
tomentosum Wight
Clusia
Hilariana Schl.
Cratoxylon
celebicum Bl.
polyanthum Korth.
Garcinia
bancana Miq.
Benthami Pierre
caloneura Boerl.
celebica L.
ceramica Boerl.
cornea L.
dioica Bl.
dulcis Kurz
„ var. pyriformis Boerl.
„ „ sylvestris Boerl.
echinocarpa Thw.
fusca Pierre
Grahami Pierre
Hanburyi Hook. f.
indica Chois.
Kydia Roxb.
lateriflora Bl.
„ var. javanica Boerl.
Livingstonei Andr.
Loureiri Pierre
mangostana L.
parviflora Miq.
picrorhiza Miq.
„ var. limonorhiza Boerl.
porrecta Wall.
„ var. schizogyna Boerl.
Rheedii Pierre

Garcinia
sizygiifolia Pierre
Treubii Pierre
Xanthochymus Hook. f.
Hypericum
chinense L.
Mammea
americana L.
Ochrocarpus
congregata Boerl.
siamensis Andr.
Pentadesma
butyracea Sab.

Hamamelidaceae

Altingia
excelsa Noronha
Rhodoleia
Teysmannii Miq.

Hernandiaceae

Hernandia
ovigera L.
peltata Meissn.

Hippocrateaceae

Hippocratea
indica Willd.
Salacia
Brunoniana W. et A.
Buddinghii Scheff.
cerasiformis T. et B.
coromandeliana T. et B.
longifolia Hook. f.
macrophylla Bl.
oblonga Wall.
oblongifolia Bl.
ovalis Korth.
polyantha Korth.
prinoides DC.
Radula Hassk.
reticulata Wight
Roxburghii Wall.
verrucosa Wight

Hydrocaryaceae

Trapa
bicornis L. f.
quadrispinosa Roxb.

Hydrophyllaceae

Hydrolea
spinosa L.
zeylanica Vahl
Wigandia
Kunthii Chois.

Icacinaceae

Gonocaryum
fuscum Hochr.
fusiforme Hochr.
melanocarpum Hochr.
obovatum Hochr.
pyriforme Scheff. var
„ var. corrugatum Hochr.
„ „ planifolium Hochr.
Teysmannianum Scheff.
Phytocrene
macrophylla Bl.
Stemonurus
scorpioides Becc.

Juglandaceae

Engelhardtia
serrata Bl.
spicata Bl.

Labiatae

Acrocephalus
indicus O. Ktze
Anisomeles
indica O. Ktze
„ var. albiflora
Coleus
aromaticus Benth.
brevipes Poit.
hybridus Hort.
tuberosus Rich.
Dysophylla
auricularia Bl.
verticillata Benth.
Gomphostemma
javanicum Benth.
phlomoides Benth.
Hyptis
brevipes Poit.
capitata Jacq.
pectinata Poit.
Leonotis
Leonurus R. Br.
nepetifolia Ait.
Leonurus
sibiricus L.
Leucas
aspera Link.
flaccida R. Br.
lavandulifolia Sm.
Mentha
arvensis L.
Mesona
palustris Bl.
Moschosma
polystachyum Benth.
Ocimum
Basilicum L.
„ var. densiflorum
canum Sims.
gratissimum L.
sanctum L.
„ var. album
„ var. nigrum
Orthosiphon
aristatus Miq.
grandiflorum Bold.
Paraphlomis
oblongifolia Prain
Plectranthus
javanicus Benth.
Pogostemon
Cablin Benth.
carnosus Miq.
Heyneanus Benth.
Pycnostachys
Dawei N. E. Br.
Salvia
aurita Thunb.
azurea Lam.
var. grandifolia
coccinea Juss.
„ fl. rosea
„ var. lactea
farinacea Benth.
ianthina Otto & Dtr.
leucantha Cav.

Salvia
occidentalis Sw.
Roemeriana Scheele
splendens Ker - Gawl.
tiliifolia Vahl
uliginosa Benth.
Scutellaria
Copelandii Merr.
discolor Colebr.
var. concolor Roxb.
Sideritis
canariensis L.

Lauraceae

Beilschmiedia
undulata Miq.
Cassytha
filiformis L.
Cinnamomum
Burmannii Bl.
iners Reinw.
zeylanicum Nees
Eusideroxylon
Zwageri T. et B.
Litsea
amara Bl.
chinensis Lam.
latifolia Bl.
„ var. areolata
sebifera Bl.
Nectandra
angustifolia Nees
Persea
gratissima Gaertn. f.
Phoebe
declinata Nees

Lecythidaceae

Barringtonia
asiatica Kurz
gigantostachya K. et V.
racemosa Roxb.
sarcostachys Miq.
spicata Bl.
sumatrana Miq.
Chydenanthus
excelsus Miers.
„ var. sumatranus
Couroupita
guianensis Aubl.
Gustavia
augusta L.
Planchonia
sundaica Miq.

Leguminosae

Abrus
laevigatus E. Mey.
precatorius L.
Acacia
arabica Willd.
auriculiformis A. Cunn.
Catechu Willd.
concinna DC.
Farnesiana Willd.
pennata Willd.
podalyriifolia Cunn.
spadicigera Cham. et Schlecht.
Acrocarpus
fraxinifolius Wight
Adenanthera
microsperma T. et B.
pavonina L.
Aeschynomene
americana L.
„ var. javanica
Elaphroxylon Taub.
falcata DC.
indica L.
Albizzia
Acle Merr.
chinensis Merr.
Lebbeck Benth.
littoralis T. et B.
lucida Benth.
procera Benth.
rotundata Bl.
rufa Benth.
saponaria Bl.
Welwitschii Oliv.
Alysicarpus
ludens Wall.
nummulariifolius DC.
Andira
inermis H. B. K.
Arachis
hypogaea L.

Baphia
nitida Lodd.
Bauhinia
binata Blanco
malabarica L.
monandra Kurz
purpurea L.
racemosa Lam.
tomentosa L.
„ var.
variegata L.
violacea Hort.
Brownea
capitella Jacq.
grandiceps Jacq.
hybrida Hort.
Caesalpinia
cinclidocarpa Miq.
Crista L.
Jayabo Maza
Nuga Ait.
pulcherrima Sw.
sappan L.
sepiaria Roxb.
tinctoria Domb.
Cajanus
cajan Millsp.
Calliandra
brevipes Benth.
haematocephala Hassk.
portoricensis Benth.
Calopogonium
mucunoides Desv.
Calpurnia
aurea Bak.
sylvatica Mey.
Canavalia
ensiformis DC.
„ var. mollis
„ „ nana
obtusifolia DC.
virosa W. et A.
Cantharospermum
barbatum Kds.
molle Taub.
scarabeoides Kds.
Cassia
Absus L.
alata L.
auriculata L.
bacillaris L. f.
bicapsularis L.
didymobotrya Fresen
Fistula L. f.
glauca Lam.
„ var. flava
grandis L.
hirsuta L.
javanica L.
laevigata Willd.
Leschenaultiana DC.
marginata Roxb.
mimosoides L.
moschata H. B. K.
multijuga Rich.
nodosa Ham.
obovata Collad.
patellaria DC.
quinquangulata Rich.
racemosa Mill.
rotundifolia Pers.
siamea L.
Sophora L.
timorensis DC.
Tora L.
Castanospermum
australe A. Cunn.
Centrosema
Plumieri Benth.
pubescens Benth.
„ fl. albis
„ „ violaceis
virginianum Benth.
Clianthus
scandens Merr.
Clitoria
heterophylla Lam.
laurifolia Poir
ternatea L.
„ fl. albis
„ „ caeruleis
„ „ violaceis
Crotalaria
acicularis Ham.
alata Roxb.
albida Heyne
anagyroides H. B. K.
fulva Roxb.
Grantiana Harv.

Crotalaria
incana L.
juncea L.
linifolia L.
mysorensis Roth.
prostrata Roxb.
pseudo-eriosema Vatke
retusa L.
striata DC.
Tweediana Benth.
usaramoensis Bak. f.
Valetonii Back.
verrucosa L.
Cynometra
cauliflora L.
polyandra Roxb.
ramiflora L.
Dalbergia
ferruginea Roxb.
Jaherii Burck
parviflora Roxb.
pseudo-sissoo Miq.
sissoo Roxb.
Derris
elegans Benth.
elliptica Benth.
heptaphylla Merr.
heterophylla Back.
microphylla Val.
scandens Benth.
Teysmanniana Prain
timorensis Bl.
Desmanthus
virgatus Willd.
Desmodium
auriculatum DC.
capitatum DC.
Cephalotes Wall.
elegans Benth.
gangeticum DC.
gyrans DC.
gyroides DC.
heterocarpum DC.
heterophyllum DC.
intortum Fawc. et Rndl.
latifolium DC.
„ var. Telfairi
pulchellum Benth.
purpureum Fawc. et Rndl.
Scalpe DC.
stipulaceum DC.
Desmodium
triflorum DC.
triquetrum DC. var. glabriusculum
umbellatum DC.
virgatum DC.
Detarium
senegalense J. F. Gmel.
Dialium
indum L.
Dioclea
Lablab DC.
Dolichos
Lablab L.
„ fl. albis
fl. purpureis
„ var. sundanensis
Dunbaria
conspersa Benth.
Dysolobium
grande Prain
Entada
phaseoloides Merr.
Erythrina
fusca Lour.
lithosperma Miq.
microcarpa K. et V.
picta L. forma concolor
Erythrophloeum
guineense Don
Euchresta
Horsfieldii Benn.
Flemingia
congesta Roxb.
„ „ var. minor
lineata Roxb.
semialata Roxb.
strobilifera R. Br. f. elatior
Galactia
tenuiflora W. et A.
Gliricidia
maculata H. B. K.
sepium Steud.
Glycine
Soja S. et Z.
Humboldtia
laurifolia Vahl
Hymenaea
Courbaril L.
verrucosa Gaertn.

Indigofera
arrecta Hochst.
Dosua Buch.-Ham.
„ var. tomentosa Bak.
galegoides DC.
guatemalensis Moç. Sess. et Cerv.
hirsuta L.
linifolia Retz
suffruticosa Mill.
sumatrana Gaertn.
Teysmannii Miq.
trifoliata L.
Inocarpus
edulis Forst.
Intsia
amboinensis Thouars
palembanica Miq.
Lespedeza
sericea Benth.
Leucaena
glauca Benth.
Lonchocarpus
macrostachyus Hook. f.
violaceus Oliver
Lourea
reniformis DC.
vespertilionis Desv.
„ fl. violaceis
Maniltoa
gemmipara Scheff.
Schefferi K. Schum.
Mastersia
Bakeri Back.
Mecopus
nidulans Benn.
Medicago
sativa L.
Millettia
atropurpurea Benth.
dasyphylla Hook.
sericea W. et A.
Mimosa
asperata L.
„ var. hirsutior
invisa Mart.
pudica L.
rubricaulis Lam.
Speggazzinii Pirott.
Mucuna
acuminata R. Grah.
Mucuna
gigantea DC.
pruriens DC.
„ var. capitata
„ „ utilis
Myroxylon
Balsamum Harms
„ „ forma
„ „ var. Pereirae Baill.
Neptunia
plena Benth.
Ormocarpum
glabrum T. et B.
Ormosia
dasycarpa Jack
macrodisca Bak.
sumatrana Prain
Pachyrrhizus
bulbosus Kurz
Pahudia
javanica Miq.
Parkia
africana R. Br.
biglobosa Benth.
speciosa Hassk.
Peltophorum
dasyrhachis Kurz
pterocarpum Back.
Phaseolus
calcaratus Roxb.
Caracalla L.
lunatus L.
radiatus L.
semi-erectus L.
sublobatus Roxb.
vulgaris L.
Pithecolobium
Clypearia Benth.
dulce Benth.
fagifolium Bl.
hymenaefolium Benth.
Junghuhnianum Benth.
lobatum Benth.
umbellatum Benth.
Poinciana
regia Boj.
Pongamia
pinnata Merr.
Pseudarthria
viscida W. et A.

Psophocarpus
palustris Desv.
tetragonolobus DC.
Pterocarpus
indica Willd.
Pueraria
phaseoloides Benth.
Rhynchosia
acuminatissima Miq.
Candollei Dcne.
mollissima Z. et M.
rufescens DC.
viscosa DC.
Samanea
Saman Merr.
Saraca
declinata Miq.
indica L.
minor Miq.
Schizolobium
excelsum Vog.
Serianthes
grandiflora Benth.
Sesbania
grandiflora Pers.
„ fl. albis
paludosa Prain
paulensis Barb.
sericea DC.
Sindora
javanica Bak.
Wallichii Benth.
Smithia
sensitiva Ait.
Sophora
tomentosa L.
Spatholobus
ferrugineus Benth.
gyrocarpus Benth.
littoralis Hassk.
Swartzia
pinnata Willd.
Tamarindus
indica L.
Tephrosia
candida DC.
cathartica Urb.
maxima Pers.
noctiflora Boj.
Tephrosia
purpurea Pers.
„ var. glabra
villosa Pers.
Vogelii Hook.
Teramnus
labialis Spr.
Uraria
crinita Desv.
lagopodioides DC.
picta Desv.
Vigna
Hosei Back.
marina Merr.
pilosa Back.
sinensis Endl.
vexillata Benth.
Voandzeia
subterranea Thouars
Wagatea
spicata Dalz.
Zornia
diphylla Pers.

Linaceae

Ixonanthes
grandiflora Hochr.
Reinwardtia
trigyna Planch.

Loganiaceae

Buddleia
Davidii Franch.
Fagraea
borneensis Scheff. —
carnosa Jack
euneura Scheff.
fragrans Roxb.
imperialis Miq.
lanceolata Bl.
litoralis Bl. —
Mitreola
paniculata Wall.
Nicodemia
diversifolia Ten.
Spigelia
anthelmia L.
Strychnos
laurina Wall.
Tieute Lesch.

Loranthaceae

Elytranthe
gemmiflora Don
globosa Engl.
Loranthus
atropurpureus Bl.
pentandrus L.
Viscum
articulatum Burm.
orientale Willd.

Lythraceae

Cuphea
Balsamona Ch. et Schell.
Hookeriana Walp.
micropetala H. B. K.
platycentra Benth.
procumbens Cav.
Ginoria
americana L.
Heimia
myrtifolia Cham. & Schl.
Lagerstroemia
floribunda Jack
indica L.
speciosa Pers.
subcostata Koehne
Lawsonia
inermis L.
„ „ fl. rubris
Rotala
hexandra Koehne
leptopetala Koehne

Magnoliaceae

Kadsura
cauliflora Bl.
scandens Bl.
Magnolia
Blumei Prantl
grandiflora L.
obovata Thunb.
Michelia
Champaca L. f.
velutina Bl.
Talauma
Candollei Bl.

Malpighiaceae

Byrsonima
spicata Rich.
Galphimia
gracilis Bartl.
Malpighia
coccigera L.
glabra L.
Sphedamnocarpus
pruriens Planch

Malvaceae

Abelmoschus
angulosus W. & A.
esculentus Moench.
Manihot Médic.
moschatus Médic.
Abutilon
atropurpureum Don
Bedfordianum St. Hil.
crispum Sw.
hirtum Sw.
indicum Sw.
molle Sw.
Anoda
lavateroides Médic.
Gossypium
acuminatum Roxb.
arboreum L. var. sanguineum Watt.
barbadense L.
purpurascens Poir.
Hibiscus
Archeri Wats.
cannabinus L.
Eetveldianus Willd. et Dur.
grewiifolius Hassk.
hybridus Hort.
lavateroides Moric.
macrophyllus Roxb.
mutabilis L.
panduriformis Burm. f.
platanifolius Sw.
Sabdariffa L.
similis Bl.
surrattensis L.
tiliaceus L.
„ var. hirsutus Hochr. f. subeglandulosa
vitifolius L.

Lagunaria
Patersonii Don
Lavatera
trimestris L.
Malachra
bracteata Cav.
capitata L.
fasciata Jacq.
Malvastrum
coromandelianum Garcke.
spicatum Gray
Malvaviscus
arboreus Cav.
„ var. mexicanus Schlecht.
Sida
acuta Burm.
cordifolia L.
glutinosa Cav.
linifolia Cav.
rhombifolia L.
thyrsiflora Miq.
Thespesia
Lampas Dalz.
populnea Soland.
trilobata Bak. f.
Urena
lobata L.
„ „ fl. albis
Wissadula
contracta Fr.
periplocifolia Presl

Martyniaceae

Martynia
annua L.

Melastomataceae

Bellucia
Axinanthera Triana
Calvoa
sessiliflora Cogn.
Clidemia
hirta Don
Dissochaeta
divaricata Naud.
Heterocentron
roseum A. Braun
Kibessia
azurea DC.
Medinilla
crassinervia Bl.
radicans Bl.
speciosa Bl.
venosa Bl.
Melastoma
malabathricum L.
„ fl. albis
Memecylon
caeruleum Jack
floribudum Bl.
myrsinoides Bl.
oligoneurum Bl.
Osbeckia
rubicunda Arn.
Pachycentria
constricta Bl.
Phyllagathis
rotundifolia Bl.
Pogonanthera
pulverulenta Bl.
Tibouchina
Langsdorffiana Baill

Meliaceae

Aglaia
elaeagnoidea Benth. var. glabrescens Val.
elliptica Bl.
„ var. ceramica Miq.
„ „ lanceolata Val.
Forstenii Miq.
Ganggo Miq.
glabrata T. et B.
heptandra K. et V.
mucronulata DC.
odoratissima Bl.
oligophylla Miq.
oxypetala Val.
rufa Miq.
var. celebica Miq.
speciosa Bl.
tomentosa T. et B.
Amoora
Rohituka W. et A.
Aphanamixis
grandifolia Bl.
Azadirachta
indica A. Juss.

Carapa
procera DC.
var. Gentilii De Willd.
Cedrela
odorata L.
Chisocheton
divergens Bl.
var. robustus Val
macrophyllus King
var. moluccanus Val
Dysoxylum
acutangulum Miq.
alliaceum Bl.
„ var. genuinum Val
„ „ lanceolatum K. et V.
amooroides Miq.
var. othophorum K. et V.
cauliflorum Hiern
caulostachyum Miq.
densiflorum Miq.
excelsum Bl.
macrothyrsum Miq.
nutans Miq.
ramiflorum Miq.
urens Val
Khaya
senegalensis A. Juss.
Lansium
domesticum Corr.
„ var. pubescens K. et V.
humile Hassk.
Melia
Azedarach L.
„ var. javanica K. et V.
dubia Cav.
Sandoricum
borneense Miq.
glaberrimum Hassk.
Koetjapi Merr.
Swietenia
macrophylla King
Walsura
pinnata Hassk.
quadrilocularis Val

Menispermaceae

Albertisia
papuana Becc.
Cocculus
laurifolius DC.
sarmentosus Diels
Cyclea
peltata Hook. f. et Thoms.
Fibraurea
chloroleuca Miers.
Hypserpa
cuspidata Miers.
Pycnarrhena
celebica Diels
Stephania
hernandifolia Walp.
Tinospora
crispa Miers.
Teysmannii Boerl.

Monimiaceae

Hortonia
floribunda Wight
Kibara
coriacea Tul.
„ var. serrulata
Matthaea
calophyllum Perk.

Moraceae

Antiaris
toxicaria Lesch.
Artocarpus
altissima J. J. S.
communis Forst.
dasyphylla Miq.
elastica Reinw.
glauca Bl.
integra Merr.
Lakoocha Roxb.
pomiformis T. et B.
rigida Bl.
Broussonetia
papyrifera Vent. var.
Conocephalus
suaveolens Bl.

Dorstenia
arifolia Lam.
convexa De Wild.
indica Wall.
Fatoua
japonica Bl.
Ficus
ampelas Burm.
Benjamina L.
elastica Roxb.
fistulosa Reinw.
fulva Reinw.
glomerata Roxb.
hirta Vahl
Korthalsii Miq.
leucantatoma Poir
obscura Bl.
parietalis Bl.
pumila L.
purpurascens Bl.
quercifolia Roxb.
ramentacea Roxb.
recurva Bl.
religiosa L.
retusa L.
„ var. nitida
Ribes Reinw.
rigida Miq.
Roxburghii Wall.
subulata Bl.
truncata Miq.
variegata Bl. var.
vasculosa Wall.
Morus
alba L.
nigra L.
Streblus
asper Lour.

Moringaceae

Moringa
oleifera Lam.

Myoporaceae

Bontia
daphnoides L.

Myricaceae

Myrica
esculenta Ham. var. Lobbii Chev.

Myristicaceae

Horsfieldia
batjanica Warb.
globularia Warb.
Iryaghedi Warb.
sylvestris Warb.
Knema
intermedia Warb.
laurina Warb.
tomentella Warb.
Myristica
cinnamomea King
fatua Houtt.
fragrans Houtt.
guatteriifolia DC.
iners Bl.
malabarica Lam.
montana Roxb.
speciosa Warb.
succedanea Bl.
Teysmannii Miq.

Myrsinaceae

Ardisia
attenuata Wall.
crispa DC.
cymosa Bl.
escallonioides Cham. et Schl.
fertilis Miq. var.
floribunda Wall.
humilis Vahl
„ forma obovata Mez
„ forma obovata Mez
„ „ subf. affinis
„ „ subf. rubella
involucrata Kurz
lurida Bl.
macrophylla Reinw.
mamillata Hance
purpurea Reinw.
serrata Pers.
solanacea Roxb.
tuberculata Wall.
virens Kurz
Embelia
javanica DC.
Rapanea
Hasseltii Mez.

Myrtaceae

Callistemon
coccineus F. v. Muell
lanceolatus Sw.
linearis DC.
phoeniceus Lindl.
rigidus R. Br.
salignus Sw.
Decaspermum
paniculatum Kurz
rubrum Baill
Eucalyptus
alba Reinw.
amygdalina Labill
botryoides Sm.
capitellata Sm.
corymbosa Sm.
globulus Labill
maculata Hk.
var. citriodoro F. v. Muell
piperita Sm.
saligna Sm.
Stuartiana F. v. Muell
tereticornis Sm. var. latifolia Benth.
Eugenia
acuminatissima Kurz
aquea Burm. f.
aromatica Berg.
borneensis Miq.
bracteata Roxb.
buxifolia Willd.
cymosa Lam.
„ var.
decipiens K. et V.
densiflora Duth.
formosa Wall.
intermedia K. et V.
jamboloides K. et V.
Jambos L.
javanica Lam. fr. albis
„ var.
lineata Duth.
malaccensis L.
Michelii Lam.
paucipunctata K. & V.
polyantha Wight
ruminata K. et V.
stipularis Miq.
Eugenia
subglauca K. et V.
tetraptera Miq.
Leptospermum
flavescens Sm.
Melaleuca
genistifolia Sm.
Leucadendron L.
Metrosideros
petiolata Koord.
vera Nied.
Psidium
Araça Raddi
Cattleyanum Sab.
Guajava L.
Rhodomyrtus
macrocarpus Benth.
tomentosus Wight
Syncarpia
glomulifera Nied.
Tristania
conferta R. Br.
laurina R. Br.

Nepenthaceae

Nepenthes
coccinea Hort.
gymnamphora Nees

Nyctaginaceae

Boerhaavia
chinensis Asch. et Schweinf.
diandra Burm.
Mirabilis
Jalapa L.
Pisonia
hirtella H. B. K.

Nymphaeaceae

Nelumbium
Nelumbo Druce
„ var. alba
Nuphar
japonicum DC.
Nymphaea
capensis Thunb.
var. zanzibarensis Conard
gigantea Hook.
var. violacea Conard

Nymphaea
Lotus L.
„ var. rubra
Victoria
regia Lindl.

Ochnaceae

Brackenridgea
Hookeri A. Gray
Ochna
Kirkii Oliver
Moonii Thw.
squarrosa L.
Wallichii Planch.
Ouratea
angustifolia Baill
olivaeformis Engl.

Olacaceae

Strombosia
zeylanica Gardn.
var. lucida Hochr.

Oleaceae

Jasminum
glabrum Willd.
Ligustrum
japonicum Thunb.
Walkeri Dcne.
Linociera ramiflora Wall. et DC.
Myxopyrum
nervosum Bl.
Nyctanthes
Arbor tristis L.

Onagraceae

Fuchsia
coccinea Ait.
corymbiflora Ruiz. et Pav.
triphylla L.
Jussieua
linifolia Vahl
peruviana L.
repens L.
Ludwigia
parviflora Roxb.
Xylopleurum
roseum Raim.

Oxalidaceae

Averrhoa
Bilimbi L.
Carambola L. f. dulcis
Biophytum
sensitivum DC.
Oxalis
corniculata L.
„ var. repens
corymbosa DC.
Deppei Lodd.
„ var. Tweediana
grandifolia DC.
sepium St. Hil.

Papaveraceae

Argemone
grandiflora Sw.
mexicana L.
Bocconia
frutescens L.
Dicentra
thalictrifolia Hook. f. et Thoms.
Papaver
Rhoeas L.

Passifloraceae

Passiflora
edulis Sims.
foetida L.
„ var. ciliata Mast.
hybrida Nees
laurifolia L.
quadrangularis Sims.
spathulata Mast.
suberosa L.

Pedaliaceae

Sesamum
indicum L.
orientale L.

Phytolaccaceae

Petiveria
alliacea L.
Rivina
humilis L.
„ f. fr. aurantiacis

Piperaceae

Heckeria
peltata Kunth
Peperomia
laevifolia Miq.
Verschaffeltii Lem.
Piper
acutistipulum DC.
aduncum L.
arifolium Miq.
Betle L.
„ „ f. densum DC.
„ „ var. Siriboa DC.
brasiliense DC.
caninum Bl.
concinnum DC.
costatum DC.
elongatum Vahl
hirsutum Sw.
„ var. magnifolium DC.
malamiris L.
miniatum Bl.
nigrum L.
pseudonigrum DC.
sarmentosum Roxb.
tiliifolium Cham.
unguiculatum R. et P.

Pittosporaceae

Pittosporum
ferrugineum Ait.
timorense Bl.

Plantaginaceae

Plantago
lanceolata L.
major L.
„ var. purpurea

Plumbaginaceae

Plumbago
aphylla Boj.
capensis Thunb.
indica L.
„ var. superba
pulchella Boiss
zeylanica L.

Polemoniaceae

Cobaea
scandens Cav.
Phlox
Drummondii Hook.

Polygalaceae

Polygala
glomerata Lour.
javanica DC.
paniculata L.
Securidaca
longepeduncelata Fres.
Xanthophyllum
excelsum Bl.
vitellinum Nees

Polygonaceae

Antigonon
guatemalense Meissn.
leptopus Hook. et Arn.
„ var. album
Muehlenbeckia
platyclada Meissn.
Polygonum
barbatum L.
capitatum Don.
chinense L.
„ var. runcinatum Don
Hydropiper L. f. microcarpum Dans.
lapathifolium L.
longisetum De Br.
orientale L.
perfoliatum L.
pubescens Bl.
Rumex
abyssinica Jacq.
alpinus L.
sagittatus Thunb.

Portulacaceae

Portulaca
oleracea L.
„ var. sylvestris
pilosa L.
quadrifida L.
tuberosa Roxb.

Talinum
paniculatum Gaertn.
triangulare Willd.

Primulaceae

Cyclamen
persicum Mill.
Primula
imperialis Jungh.

Proteaceae

Grevillea
Banksii R. Br.
„ var. alba
robusta A. Cunn.
Macadamia
ternifolia F. v. Muell

Punicaceae

Punica
Granatum L.

Ranunculaceae

Clematis
paniculata Thunb.
smilacifolia Wall
zeylanica Poir
var. normalis O. K.

Resedaceae

Reseda
lutea L.

Rhamnaceae

Colubrina
asiatica Brongn.
nepalensis G. Don
reclinata Brongn.
Gouania
domingensis L.
leptostachya DC.
tiliifolia Lam.

Rhizophoraceae

Bruguiera
eriopetala W. et A.
gymnorrhiza Lam.
Gynotroches
axillaris Bl.
Weihea
zeylanica Gard.

Rosaceae

Eriobotrya
japonica Lindl.
Fragaria
indica Andr.
Parinarium
excelsum Sab.
Griffithianum Benth.
scabrum Hassk.
„ var. lanceolatum K. et V.
„ „ macrophyllum K. et V.
sumatranum Benth.
Prunus
javanica Miq.
persica Sieb. et Zucc.
triflora Roxb.
Pygeum
parviflorum T. et B.
var. subcordatum K. et V.
Rosa
microphylla Roxb.
sempervirens L.
Rubus
alceifolius Poir.
ellipticus Sm.
elongatus Sm.
„ var. celebicus
fraxinifolius Poir. var. celebicus
Hasskarlii Miq.
moluccanus L.
peltinervius Focke
rosifolius Sm.
trivialis Mich.
Spiraea
Blumei Don
Thunbergii Sieb.

Rubiaceae

Amaracarpus
pubescens Bl.
Anthocephalus
indicus Rich.
Antirrhoea
hexasperma Merr.
Aphaenandra
sumatrana Miq.

Argostemma
montanum Bl.
Borreria
hispida Schum.
laevis Griseb.
latifolia Schum.
ocimoides DC.
Chasalia
curviflora Thw.
„ f. brevistylis
„ „ longistylis
Coffea
arabica L.
bengalensis Roxb.
canephora Pierre
excelsa Cheval.
Laurentii De Wild.
robusta Lind.
Crusea
rubra Cham. et Schlecht.
„ var. alba
Dentella
repens Forst.
Diodia
sarmentosa Swartz
Exostemma
longiflorum R. et Sch.
Fernelia
obovata Lam.
Gardenia
erythroclada Kurz
Gjellerupii Val.
jasminoides Ell.
tubifera Wall.
Geophila
herbacea Schum.
Hamelia
sphaerocarpa R. et P.
ventricosa Sw.
Hemidiodia
ocymifolia Schum.
Hydnophytum
formicarum Jack
simplex Becc.
Ixora
amboinica DC.
amoena Wall.
coccinea L.
„ var. grandiflora
cuneata Warb.
„ var. grandiflora Val.
Ixora
grandiflora Z. et M.
jambosifolia Val.
javanica DC.
paludosa Kurz
parviflora Vahl
pauciflora Val.
pulcherrima Val.
salicifolia DC.
stricta Roxb.
timorensis Decne.
„ var.
Leptodermis
lanceolata Wall.
Morinda
bracteata Roxb.
citrifolia L.
leparensis Val.
umbellata L.
Mussaenda
cylindrocarpa Arech.
frondosa L.
rufinervia Miq.
Teysmanniana Miq.
Myrmecodia
tuberosa Jack
Nauclea
excelsa Bl.
var. mollis K. et V.
lanceolata Bl.
purpurascens Korth.
Oldenlandia
auricularia F. v. M.
corymbosa L.
costata Koord.
hispida Lam.
pterita Miq.
Oxyanthus
tubiflorus DC.
Paederia
densiflora Miq.
foetida L.
Palicourea
gardenioides Benth. et H. f.
Pavetta
indica L.
gardenioides Benth. et Hk. f.
lanceolata Eckl.
Zimmermanniana Val.

Pentas
carnea Benth.
Posoqueria
latifolia R. et S.
Psychotria
angulata Korth.
„ f. brevistylis
bacteriophila Val.
malayana Jack.
„ var.
„ f. brevistylis
sarmentosa Val.
„ var. bancana
viridiflora Reinw.
Randia
densiflora Benth.
dumetorum Lam.
maculata DC.
malleifera Benth. et Hook. f.
multiflora K. et V.
scandens DC.
tomentosa Bl. var.
uliginosa Poir
Versteegii Val.
Richardsonia
brasiliensis Gomez
Rondeletia
odorata Jacq.
Rubia
cordifolia L.
Sarcocephalus
cordatus Miq. var. pubescens Hawl.
subditus Miq. var.
Scyphostachys
coffeoides Thw.
Spermacoce
tenuior L.
Tarenna
fragrans K. & V. var. lucida Miq.
incerta K. et V.
odorata Val.
Uncaria
cirrhiflora Roxb.
glabrata DC.
pilosa Roxb.

Rutaceae

Acronychia
laurifolia Bl.
Aegle
Marmelos Corr.
„ var. macrocarpa T. et B.
„ „ „ f. major
„ „ „ f. minor
Atalantia
bilocularis Wall.
monophylla Corr.
„ var. macrophylla Oliver.
puberula Miq.
Citrus
amara Hassk.
Aurantium L.
var. microcarpa Hort.
decumana L.
grandis Hassk.
„ var. oblonga Hassk.
„ „ sphaerocarpa Hassk.
Hystrix DC.
japonica Thunb.
macracantha Hassk.
medica L.
nobilis Lour. var. Unshui
Papaya Hassk.
Clausena
anisata Hook. f.
excavata Burm.
Evodia
aromatica Bl.
batjanica Val.
hortensis Forst.
latifolia DC.
Ridleyi Hochr.
triphylla DC. var.
Feronia
elephantum Corr.
lucida Scheff.
Glycosmis
pentaphylla Corr.
„ var. angustata Hochr.
„ „ dilatata Hochr.
Limonia
alata Wall.

Lunasia
amara Blanco
„ var. genuina Hochr.
Luvunga
eleutherandra Dalz.
Micromelum
pubescens Bl.
„ var. genuinum Oliv.
Murraya
heptaphylla Span.
Koenigii Spr.
omphalocarpa Hay.
paniculata Jack
Pilocarpus
pennatifolius Lem.
Ruta
chalepensis L.
Triphasia
trifolia Wils.

Sabiaceae

Meliosma
lanceolata Bl.
„ var. chartacea
nitida Bl.
„ var. cerasiformis

Santalaceae

Santalum
album L.

Sapindaceae

Allophylus
Cobbe Bl.
Aphania
Boerlagei Val.
Cardiospermum
grandiflorum Sw. f. elegans Radlk.
Halicacabum L.
Cupania
americana L.
Dodonaea
viscosa Jacq.
Euphoria
cinerea Radlk.
malayensis Radlk.
Filicium
decipiens Thw.
Guioa
pleuropteris Radlk.
Harpullia
arborea Radlk.
cupanioides Roxb.
thanatophora Bl.
Hebecoccus
ferrugineus Radlk.
Jagera
serrata Radlk.
Lepisanthes
angustifolia Bl.
Mischocarpus
sumatranus Bl.
Nephelium
lappaceum L.
leiocarpum F. v. Muell
mutabile Bl.
„ var. trigyna
Otophora
alata Bl.
amoena Bl.
spectabilis Bl.
Pometia
pinnata Forst.
tomentosa T. et B.
Sapindus
marginatus Bl.
Rarak DC.
trifoliatus L.
Serjania
communis Camb. var. glabra Radlk.
Tristiropsis
canarioides Boerl.
Xerospermum
xanthophyllum Radlk.

Sapotaceae

Achras
Zapota L.
„ var. lobata DC.
Burckella
oxycarpa H. J. L.
Chrysophyllum
Cainito L.
Manilkara
Kauki Dub.

Mimusops
Elengi L.
Northia
fasciculata H. J. L.
Palaquium
calophyllum Pierre
Gutta Baill.
hexandrum Baill.
javense Burck
obtusifolium Burck
quercifolium Burck
Payena
Leerii Kurz
Planchonella nitida Dub.

Saururaceae

Houttuynia
cordata Thunb.

Saxifragaceae

Brexia
madagascariensis Thou.
Dichroa
febrifuga Lour.

Scrophulariaceae

Alonsoa
Warscewiczii Regel
Angelonia
goyanensis Benth.
Antirrhinum
majus L.
Artanema
longiflorum Wettst.
Bacopa
Monnieria Wettst.
Calceolaria
gracilis H. B. K.
Capraria
biflora L.
Curanga
Fel-terrae Merr.
Dopatrium
junceum Buch.-Ham.
Ilysanthes
serrata Urb.
veronicifolia Urb.
Limnophila
javanica DC.
Linaria
Cymbalaria Miq.
Lindenbergia
philippinensis Benth.
Lindernia
crustaceaF. v. M.
Maurandia
antirrhiniflora Humb.
erubescens A. Gray
Pentstemon
campanulatus Willd.
Russelia
juncea Zucc.
Scoparia
dulcis L.
Tetranema
mexicanum Benth.
Torenia
Fournieri Lndl.
„ fl. albis
polygonoides Benth.
Verbascum
blattaria L.
phoeniceum L.
Thapsus L.
Veronica
longifolia L.
spicata L.

Simarubaceae

Ailanthus
moluccana DC.
Brucea
amarissima Desv.
Harrisonia
Brownii A. Juss.
paucijuga Oliv.
Quassia
amara L.
Samadera
indica Gaertn.
mekongensis Engl.

Solanaceae

Browallia
americana L.
demissa L.
Brunfelsia
americana L.
uniflora Don —

Capsicum
annuum L.
„ var. longum
„ „ nigrum
bicolor Jacq.
frutescens L.
„ var. baccatum
Cestrum
aurantiacum Lindl.
calycinum H. B. K.
elegans Schltr.
foetidum Médic.
nocturnum L.
pallidissimum Back.
Parqui l'Hérit.
Cyphomandra
betacea Sendt.
Datura
fastuosa L.
„ fl. albis
„ „ violaceis
Lycium
chinense Mill.
Nicandra
physaloides Gaertn.
Nicotiana
Sanderae Lindl.
Petunia
hybrida Hort.
Physalis
minima L.
Pseudodatura
arborea v. Zijp
Solanum
aculeatissimum Jacq.
Blumei Nees
crinitum Lam.
glaucum Dun.
grandiflorum R. et P.
indicum L.
Lycopersicum L.
macranthum Dun.
macrocarpon L.
mammosum L.
Melongena L.
„ var. breve-violacea
„ „ viride
nigrum L.
quitoense Lam.
torvum Swartz
Solanum
triste Jacq.
verbascifolium L.
Streptosolen
Jamesonii Miers.

Sonneratiaceae

Duabanga
moluccana Bl.
sonneratioides Buch.-Ham.
Sonneratia
acida L.

Sterculiaceae

Abroma
augusta L. f.
fastuosa R. Br.
Brachychiton
acerifolius F. v. M.
Buettneria
angulata Hassk.
celebica Hochr.
Cola
acuminata Schott et Endl.
Ballayi Cornu
Dombeya
acutangula Cav.
Firmiana
colorata Br.
Guazuma
ulmifolia Lam.
Helicteres
angustifolia L.
hirsuta Lour.
Isora L.
viscida Bl.
Heritiera
littoralis Dryand
Kleinhovia
hospita L.
Melochia
borbonica Cav.
corchorifolia L.
„ fl. albis
pyramidata L.
Pentapetes
phoenicea L.
Pterocymbium
javanicum R. Br.

Pterospermum
acerifolium Willd.
celebicum Miq.
javanicum Jungh.
„ f. arborescens
Lamarckianum Hochr.
lancifolium Roxb.
„ f. angustifolium
„ f. genuinum
macrocarpum Hochr.
semisagittatum Roxb.
Sterculia
foetida L.
javanica R. Br.
laevis Wall.
„ „ var. bracteata Pierre
macrophylla Vent.
„ var. falco Hochr.
rubiginosa Vent.
spectabilis Miq.
Treubii Hochr.
urceolata Sm.
Tarrietia
amboinensis Hochr.
f. trifoliata
Theobroma
Cacao L.
„ fr. flavidis
„ var. amenolado
„ „ Calabacillo
„ „ Criolo
„ „ Forastera Jaune
pentagona Bern.
Waltheria
indica L.

Styracaceae

Styrax
Benzoin Dryand

Symplocaceae

Symplocos
odoratissima Chois.

Theaceae

Adinandra
dumosa Jack
Eurya
japonica Thunb.
Gordonia
excelsa Bl.
Pyrenaria
serrata Bl.
„ „ var. oidocarpa Boerl.
Schima
Noronhae Reinw.
Ternstroemia
elongata Koord.
Thea
sinensis Sims.

Thymelaeaceae

Aquilaria
malaccensis Lam.
Edgeworthia
chrysantha Lindl.
Phaleria
capitata Jack
„ var. fruticosa Val.
„ „ urens
papuana Warb.
„ var. Wichmannii
Wikstroemia
Candolleana Meissn.

Tiliaceae

Actinophora
fragrans R. Br.
Berrya
javanica Burr.
Colona
javanica Bl.
scabra Burr.
Corchorus
acutangulus Lam.
argutus H. B. K.
capsularis L.
„ var. bengalensis
olitorius L.
pilolobus Link.
trilocularis L.
Grewia
acuminata Juss.
„ var. brevistipitata Hochr.
„ „ odorata Hochr.
Koordersiana Burr.

Honckenya
ficifolia Willd.
„ var. alba
Microcos
ceramensis Burr.
hirsuta Burr.
tomentosa Sm.
Schoutenia
Buurmannii K. & V.
ovata Korth.
Triumfetta
villosiuscula Bl.

Tropaeolaceae

Tropaeolum
majus L.

Turneraceae

Piriqueta
racemosa Sw.
Turnera
subulata Sm.
ulmifolia L.

Ulmaceae

Celtis
Wightii Planch.
Gironniera
subaequalis Planch.

Umbelliferae

Carum
Roxburghianum Benth. et Hook. f.
Centella
asiatica Urb.
Coriandrum
sativum L.
Cryptotaenia
canadensis DC.
Eryngium
foetidum L.
Hydrocotyle
javanica Thunb.
sibthorpioides Lam.
Oenanthe
javanica DC.
Sanicula
europaea L.

Urticaceae

Boehmeria
candicans Hassk.
nivea Gaud.
„ var.
pilosiuscula Hassk.
platyphylla Don.
„ var. scabrella Wedd.
Elatostema
acuminatum Brongn.
insigne Hall. f.
macrophyllum Brongn.
mesargyreum Hall. f.
paludosum Miq.
pictum Hall. f.
robustum Hall. f.
rostratum Hassk.
sesquifolium Hassk.
strigosum Hassk.
Laportea
stimulans Miq.
Leucosyke
capitellata Wedd.
Myriocarpa
longipes Liebm.
Pilea
angulata Bl.
microphylla Liebm.
serpyllifolia Wedd.
smilacifolia Wedd.
Pipturus
repandus Wedd.
Pouzolzia
zeylanica Benn.
Villebrunea
integrifolia Gaud.
rubescens Bl.

Verbenaceae

Bouchea
incrassata Lange
Callicarpa
acuminata Roxb.
cana L.
var. sumatrana H. J. L.
japonica Thunb.
var. dichotoma Bakh.

Callicarpa
longifolia Lam.
macrophylla Vahl
pedunculata R. Br.
pentandra Roxb.
„ f. hexandra Bakh.
tomentosa Murr.
Clerodendron
Buchanani Walp.
„ var. fallax Bakh.
calamitosum L.
capitatum Schum. et Thonn.
Cunninghamii Benth.
disparifolium Bl.
var. eriosiphon Bakh.
fragrans Willd.
hastatum Lindl.
incisum Klotzsch
var. macrosiphon Bakh.
indicum O. Ktze.
inerme Gaertn.
Minahassae T. et B.
nutans Wall.
Sahelangii Koord.
serratum Spreng.
splendens G. Don
squamatum Vahl
„ var. Buchaneanum Bakh.
Thomsonae Balf. f.
„ fol. var.
villosum Bl.
Duranta
Plumieri Jacq.
stenostachya Tod.
Faradaya
splendida F. v. Muell
Gmelina
arborea Roxb.
asiatica L.
var. philippinensis Bakh.
„ „ villosa Bakh.
Hymenopyramis
brachiata Wall.
Lantana
Camara L.
canescens H. B. K.
Lantana
stricta Sw.
trifolia L.
Lippia
nodiflora Rich.
„ var. repens Schau.
Peronema
canescens Jack
Premna
acuminata R. Br.
integrifolia L.
oblongifolia Merr.
var. major H. J. L.
pubescens Bl.
var. odorata H. J. L.
var. subglabra H. J. L.
tomentosa Willd.
Priva
lappulacea Pers.
Sphenodesma
unguiculata Schau.
Stachytarpheta
cayennensis Vahl
indica Vahl
jamaicensis Vahl
mutabilis Vahl
Tectona
grandis L. f.
Teysmanniodendron
bogoriense Koord.
pteropodum Bakh.
Verbena
angustifolia Michx.
bonariensis L.
„ var. rigida O. Ktze.
canadensis Britt.
carolina Michx.
hybrida Hort.
laciniata Briq.
officinalis L.
supina L.
Vitex
altissima L. f.
cofassus Reinw.
Negundo L.
„ var. bicolor H. J. L.
„ „ typica H. J. L.

Vitex
pubescens Vahl
trifolia L.
var. trifoliolata Schau.

Violaceae

Rinorea
cymulosa O. Ktze.
echinocarpa O. Ktze.
„ var. Zollingeri
Viola
inconspicua Bl.
odorata L.
tricolor L.

Vitaceae

Ampelocissus
imperialis Planch.
polythyrsa Gagnep.
Cayratia
carnosa Gagnep.
pedata Juss.
Leea
aculeata Bl.
aequata L.
angulata Korth.
divaricata T. et B.
indica Merr.
„ var. sundaica
macropus K. Schum.
rubra Bl.
Tetrastigma
lanceolarium Planch.
Vitis
geniculata Miq.

Zygophyllaceae

Tribulus
cistoides L.

Government of Bengal

Agriculture and Industries Department

Delectus
Seminum et Fructuum
Quae
Hortus Botanicus Calcuttensis
Pro
Mutua Commutatione
Offert

Gratis

A

Abroma augusta Linn.
Abrus precatorius Linn.
Abutilon indicum Sweet.
Acacia arabica Willd.
Acacia Catechu, Willd.
Acacia farnesiana Willd.
Acalypha indica Linn.
Acanthus ilicifolius Linn.
Acer oblongum Wall.
Achras Sapota Linn.
Achyranthes aspera Linn.
Actinophloeus MacArthuri Becc.
Adansonia digitata Linn.
Adenanthera pavonina Linn.
Adhatoda Vasica Nees.
Aegiceras majus Gaertn.
Aegle Marmelos Corr.
Aerva lanata Juss.
Ageratum conyzoides Linn.
Aglaia odorata Lour.
Aglaia Roxburghiana Miq.
Ailanthus excelsa Roxb.
Alangium Lamarckii Thw.
Albizzia indica Benth.
Albizzia Lebbek Benth.
Albizzia odoratissima Benth.
Albizzia procera Benth.
Aleurites triloba Forst.
Allium Cepa Linn.
Alpinia Allughas Rosc.
Alstonia scholaris R. Br.
Amherstia nobilis Wall.
Amoora Rohituka Wight and Arn.
Amorphophallus campanulatus Bl.
Anacardium occidentale Linn.
Ananas Sativus Schult.
Andropogon, condensatus H. B. and K.
Anona muricata Linn.
Anona palustris Linn.
Anona reticulata Linn.
Anona squamosa Linn.
Anthocephalus morindaefolius korth.
Antidesma Bunius Spreng.
Antidesma diandrum Roth.
Antidesma Ghesaembilla Gaertn.
Antigonon leptopus Hook and Arn.
Aphelandra fulgens Decne.
Araucaria Cunninghamii Sweet.

A

Ardisia neriifolia Wall.
Areca Catechu Linn.
Areca triandra Roxb.
Arenga saccharifera Labill.
Aristolochia indica Linn.
Artabotrys odoratissimus R. Br.
Artocarpus Chaplasha Roxb.
Artocarpus integrifolia Linn.
Artocarpus Lakoocha Roxb.
Asclepias Curassavica Linn.
Asystasia chelonoides Nees.
Atalantia monophylla DC.
Averrhoa Carambola Linn.

B

Bactris major Jacq.
Balanites Roxburghii Planch.
Baliospermum axillare Bl.
Bambusa nana Roxb.
Bambusa Tulda Roxb.
Barleria caerulea Roxb.
Barleria cristata Linn.
Barringtonia acutangula Gaertn.
Barringtonia racemosa Roxb.
Basella alba Linn.
Basella rubra Linn.
Bassia latifolia Roxb.
Bassia longifolia Linn.
Bauhinia acuminata Linn.
Bauhinia malabarica Roxb.
Bauhinia purpurea Linn.
Bauhinia rufescens Lamk.
Bauhinia tomentosa Linn.
Bauhinia variegata Linn.
Beilschmiedia Roxburghiana Nees.
Benincasa cerifera Savi.
Berria Ammonilla Roxb.
Bignonia Unguis-cati Linn.
Bischofia javanica Bl.
Bixa Orellana Linn.
Bixa purpurea Sweet.
Blumea lacera DC.
Boehmeria nivea Gaudich.
Boerhaavia repens Linn.
Bombax malabaricum DC.
Borassus flabellifer Linn.
Bridelia retusa Spreng.

B

Broussonetia papyrifera Vent.
Brownea Ariza Benth.
Brownea coccinea Jacq.
Brownea grandiceps Jacq.
Brunfelsia americana Linn.
Bryonopsis laciniosa Naud.
Bryophyllum calycinum Salisb.
Buddleia madagascariensis Lamk.

C

Caesalpinia Cacalaco Humb. and Bonpl.
Caesalpinia coriaria Willd.
Caesalpinia digyna Rottl.
Caesalpinia pulcherrima Sw.
Caesalpinia Sappan Linn.
Caesalpinia sepiaria Roxb.
Caesalpinia tortuosa Roxb.
Cajanus indicus Spreng.
Calliandra haematocephala Hassk.
Callistemon lanceolatus Sweet.
Calophyllum Calaba, Linn.
Calophyllum Inophyllum Linn.
Calophyllum spectabile Willd.
Calophyllum Wightianum Wall.
Calotropis gigantea Dryand.
Calotropis procera Dryand.
Cananga odorata Hook. f. and Thoms.
Canella alba Murr.
Capparis horrida Linn. f.
Carallia integerrima DC.
Cardiospermum Halicacabum Linn.
Careya arborea Roxb.
Careya sphaerica Roxb.
Carica Papaya Linn.
Carissa Arduina Lam.
Carissa Carandas Linn.
Carthamus tinctorius Linn.
Carum Carvi Linn.
Carum copticum Benth and Hook. f.
Caryota mitis Lour.
Caryota urens Linn.
Casearia tomentosa Roxb.
Cassia alata Linn.
Cassia auriculata Linn.
Cassia Fistula Linn.

C

Cassia glauca Lamk.
Cassia grandis Linn. f.
Cassia javanica Linn.
Cassia nodosa Ham.
Cassia siamea Lamk.
Cassia Tora Linn.
Castanospermum australe A. Cunn. and Fraser.
Casuarina equisetifolia Linn.
Catesbaea spinosa Linn.
Cedrela Toona Roxb.
Celastrus paniculatus Willd.
Cerbera Odollam Gaertn.
Chrysobalanus Icaco Linn.
Chrysophyllum Cainito Linn.
Cinnamomum Camphora T. Nees and Eber.
Cinnamomum iners Reinw.
Citharexylum subserratum Sw.
Clausena Wampi Oliver.
Clavija macrophylla Miq.
Cleome viscosa Linn.
Clerodendron aculeatum Griseb.
Clerodendron infortunatum Gaertn.
Clerodendron Siphonanthus R. Br.
Clitoria Ternatea Linn.
Cochlospermum Gossypium DC.
Cocos flexuosa Mart.
Cocos nucifera Linn.
Coffea arabica Linn.
Coffea bengalensis Roxb.
Coffea liberica Hiern.
Coix Lacryma-Jobi Linn.
Colvillea racemosa Boj.
Combretum grandiflorum G. Don.
Commelina benghalensis Linn.
Congea tomentosa Roxb.
Cordia Myxa Linn.
Cordia Sebestena Linn.
Cordyline terminalis Kunth.
Corypha elata Roxb.
Corypha Taliera Roxb.
Corypha umbraculifera Linn.
Cossinia pinnata Comm.
Costus speciosus SM.
Couroupita guianensis Aubl.
Crataeva religiosa Forst.
Cratoxylon polyanthum Korth.
Crescentia Cujete Linn.
Crinum asiaticum Linn.
Crossandra undulaefolia Salisb.
Crotalaria capensis Jacq.

C

Crotalaria juncea Linn.
Crotalaria laburnifolia Linn.
Cryptocaria amygdalina Nees.
Curcuma longa Linn.
Cycas Rumphii Miq.
Cynometra polyandra Roxb.

D

Daedalacanthus nervosus, T. And.
Dalbergia cultrata, R. Grah.
Dalbergia lanceolaria Linn f.
Dalbergia latifolia, Roxb.
Dalbergia melanoxylon, Guill and Perr.
Dalbergia Sissoo Roxb.
Datura fastuosa Linn.
Datura stramonium Linn.
Datura suaveolens, Humb and Bonpl.
Derris canarensis Baker.
Derris scandens Benth.
Derris uliginosa Benth.
Desmodium Cephalotes Wall.
Desmodium gangeticum DC.
Desmodium gyrans DC.
Desmodium umbellatum DC.
Dichrostachys cinerea Wight and Arn.
Dillenia indica Linn.
Dillenia pentagyna Roxb.
Dillenia retusa Thunb.
Dillenia scabrella Roxb.
Dioscorea alata Linn.
Diospyros discolor Willd.
Diospyros emarginata Hiern.
Diospyros-montana Roxb.
Diospyros nigricans Wall.
Diospyros Toposia, Buch-Ham
Dipterocarpus alatus Roxb.
Dodonaea viscosa Jacq.
Dolichandrone Rheedii Seem.
Dolichandrone stipulata Benth. and Hook. f. 6.
Dolichos Lablab Linn.
Dombeya acutangula Cav.
Dombeya Mastersii Hook. f.
Duabanga sonneratioides, Buch-Ham.
Duranta Plumieri Jacq.

E

Ehretia acuminata R. Br.
Ehretia buxifolia Roxb.
Ehretia laevis Roxb.
Elaeagnus latifolia Linn.
Elaeis guineensis Jacq.
Elaeocarpus floribundus Bl.
Elaeodendron glaucum Pers.
Eleusine indica Gaertn.
Encephalartos (of) villosus Lem.
Enhydra paludosa DC.
Entada scandens Benth.
Enterolobium saman Prain.
Eriodendron anfractuosum DC.
Eriolaena Candollei Wall.
Erythrina indica Lam.
Erythrina ovalifolia Roxb.
Erythrina stricta Roxb.
Erythrochiton brasiliensis Nees and Mart.
Eucalyptus Globulus Labill.
Eugenia caryophyllaea Wight.
Eugenia fruticosa Roxb.
Eugenia Jambolana Lam.
Eugenia javanica Lem.
Eugenia malaccensis Linn.
Eugenia uniflora Berg.
Euonymus glaber Roxb.
Eupatorium repandum Willd.
Eupatorium triplinerve Vahl.
Euphorbia antiquorum Linn.
Euphorbia neriifolia Linn.
Euphorbia Tirucalli Linn.
Evolvulus alsinoides Linn.
Exacum tetragonum Roxb.

F

Feronia elephantum Correa.
Ficus altissima Bl.
Ficus Benjamina Linn.
Ficus elastica Roxb.
Ficus glomerata Roxb.
Ficus hispida Linn.
Ficus indica Linn.
Ficus infectoria Roxb.
Ficus mysorensis Heyne.
Ficus nitida Bl.
Ficus religiosa Linn.
Ficus Roxburghii Wall.
Ficus Rumphii Bl.
Flacourtia cataphracta Roxb.
Flacourtia sepiaria Roxb.

F

Flemingia congesta Roxb.
Furcraea gigantea Vent.

G

Galphimia gracilis Bartl.
Garcinia cornea Linn.
Garcinia dulcis Kurz.
Garcinia Livingstonei T. Anders.
Garcinia Mangostana Linn.
Garcinia Xanthochymus, Hook. f.
Gardenia jasminoides Ellis.
Garuga pinnata Roxb.
Gelonium multiflorum A. Juss.
Glycosmis pentaphylla Correa.
Gmelina arborea Roxb.
Gmelina asiatica Linn.
Gmelina Hystrix Schult.
Gnaphalium indicum Linn.
Goniothalamus Griffithii, Hook. f. and T.
Gossypium arboreum Linn.
Gossypium herbaceum Linn.
Grevillea robusta A. Cunn.
Grewia asiatica Linn.
Grewia columnaris Sm.
Grewia Microcos Linn.
Guaiacum officinale Linn.
Guazuma tomentosa, H. B. and K.
Guizotia abyssinica Cass.
Gustavia augusta Linn.
Gymnosporia emarginata Thw.
Gymnosporia neglecta M. Laws.
Gynandropsis pentaphylla Dc.

H

Haematoxylon campechianum Linn.
Hamelia patens Jacq.
Helicteres hirsuta, Lour.
Helicteres Isora Linn.
Heliotropium indicum Linn.
Heritiera Fomes Buch-Ham.
Heritiera littoralis Dryand.
Heritiera macrophylla Wall.
Hernandia peltata, Meissn.
Herpestis Monnieria, H. B. and K.
Hibiscus collinus Roxb.
Hibiscus elatus Sw.
Hibiscus mutabilis Linn.

H

Hiptage Madablota Gaertn.
Holarrhena antidysenterica Wall.
Homalium tomentosum Benth.
Hopea odorata Roxb.
Hura crepitans Linn.
Hydnocarpus Wightiana, Bl.
Hydrocotyle asiatica Linn.
Hygrophila spinosa T. Anders.
Hymenaea Courbaril Linn.
Hymenodictyon excelsum Wall.
Hymenopyramis brachiata Wall.
Hyphaene thebaica Mart.

I

Ichnocarpus frutescens R. Br.
Ilex Dahoon Walt.
Indigofera Dosua Buch-Ham.
Inocarpus edulis Forst.
Ipomoea aquatica Forsk.
Ipomoea Batatas Poir.
Ipomoea Quamoclit Linn.
Ipomoea rubro-caerulea Hook.
Isotoma longiflora Presl.
Ixora barbata Roxb.
Ixora coccinea Linn.
Ixora parviflora Vahl.
Ixora stricta Roxb.
Ixora undulata Roxb.

J

Jacaranda ovalifolia R. Br.
Jacquinia arborea Vahl.
Jacquinia ruscifolia Jacq.
Jatropha multifida Linn.
Jussieua repens Linn.
Jussieua suffruticosa Linn.
Justicia Gendarussa Burm. f.
Justicia Neesiana Wall.

K

Kigelia pinnata, DC.
Kleinhovia Hospita Linn.

L

Lagerstroemia Flos-Reginae Retz.
Lagerstroemia indica Linn.

L

Lagerstroemia Loudoni Teijsm and Bonn.
Lathyrus Aphaca Linn.
Lawsonia alba Lam.
Leea hirta Banks.
Leea sanguinea Wall.
Leonurus sibiricus Linn.
Lepidium sativum Linn.
Leucas aspera Link.
Licuala peltata Roxb.
Licuala spinosa Thunb.
Limnanthemum cristatum Griseb.
Limonia alata Wall.
Lippia nodiflora Michx.
Litsea Sebifera Pers.
Livistona australis Mart.
Livistona chinensis R. Br.
Livistona Hoogendorpii Hort.
Livistona rotundifolia Mart.
Luffa acutangula Roxb.
Lycopersicum esculentum Mill.

M

Maba buxifolia Pers.
Mallotus philippinensis, Muell.
Malpighia coccigera Linn.
Malpighia glabra Linn.
Malpighia punicifolia Linn.
Mangifera indica Linn.
Marsdenia tinctoria R. Br.
Melaleuca Leucadendron Linn.
Melia arguta DC.
Melia Azadirachta Linn.
Melia Azedarach Linn.
Melochia arborea Blanco.
Melodinus monogynus Roxb.
Memecylon edule Roxb.
Mesua ferrea Linn.
Mezoneurum cucullatum Wight and Arn.
Michelia Champaca Linn.
Mikania scandens Willd.
Miliusa velutina, Hook. f. and T.
Millettia ovalifolia Kurz.
Millettia tetraptera Kurz.
Mimosa pudica Linn.
Mimusops Elengi Linn.
Mimusops hexandra Roxb.
Momordica Charantia Linn.
Momordica cochinchinensis Spreng.
Morinda citrifolia Linn.
Morinda tinctoria Roxb.

M

Mucuna pruriens DC.
Murraya exotica Linn.
Murraya Koenigii Spreng.
Mussaenda frondosa Linn.
Myristica fragrans Houtt.
Myroxylon Pereirae Klotzsch.

N

Napoleona imperialis Beauv.
Naravelia zeylanica, DC.
Nasturtium indicum DC.
Nelumbium speciosum, Willd.
Nephelium Lit-chi Camb.
Nephelium Longana Camb.
Nephelium tomentosum F. Muell.
Neptunia oleracea Lour.
Nerium odorum Ait.
Nicotiana plumbaginifolia Viv.
Niebuhria linearis DC.
Nipa fruticans Thunb.
Noronhia emarginata Thou.
Nyctanthes Arbor-tristis Linn.
Nymphaea alba Linn.
Nymphaea lotus Linn.
Nymphaea stellata Willd.

O

Ochna atropurpurea DC.
Ochna squarrosa Linn.
Ochna Wallichii Planch.
Ochrocarpos longifolius Benth. and Hook. f.
Ochrosia Ackeringae, Miq.
Ochrosia borbonica J. F. Gmel.
Ocimum gratissimum Linn.
Ocimum sanctum Linn.
Odina Wodier Roxb.
Olax scandens Roxb.
Oncoba spinosa Forsk.
Oreodoxa regia H. B. and K.
Ormocarpum glabrum Teijsm. and Bonn.
Oroxylum indicum Vent.
Oxalis cernua Thunb.

P

Pachira cyathophora Casar.
Pachira Spruceana Decne.

P

Pajanelia multijuga DC.
Pandanus furcatus Roxb.
Pandanus odoratissimus Hort.
Parkinsonia aculeata Linn.
Parmentiera cereifera Seem.
Passiflora holosericea Linn.
Passiflora suberosa Linn.
Persea gratissima Gaertn.
Petalidium barlerioides Nees.
Peucedanum graveolens Benth. and Hook. f.
Phlogacanthus thyrsiflorus Nees.
Phoenix acaulis Buch-Ham.
Phoenix paludosa Roxb.
Phoenix reclinata Jacq.
Phoenix rupicola T. Anders.
Phoenix sylvestris Roxb.
Phyllanthus Emblica Linn.
Physalis minima Linn.
Physalis, peruviana Linn.
Pimenta acris Kostel.
Pinus longifolia Roxb.
Piper longum Linn.
Pithecolobium dulce Benth.
Pittosporum ferrugineum Ait.
Pleurostylia Wightii W. A.
Plumbago zeylanica Linn.
Plumeria alba Linn.
Poinciana regia Boj.
Polyalthia longifolia Benth and Hook. f.
Polygala chinensis Linn.
Polygonum lanigerum R. Br.
Pongamia glabra Vent.
Porana paniculata Roxb.
Pritchardia pacifica Seem.
Psidium Cattleianum Sabine.
Psidium Guajava Linn.
Pterocarpus indicus Willd.
Pterocarpus Marsupium Roxb.
Pterocarpus santalinus Linn f.
Pterospermum acerifolium Willd.
Pterospermum lanceaefolium Roxb.
Pterospermum suberifolium Lam.
Pueraria tuberosa DC.
Punica Granatum Linn.
Putranjiva Roxburghii Wall.

Q

Quassia amara Linn.
Quisqualis indica Linn.

R

Randia uliginosa Poir.
Rauwolfia serpentina Benth.
Ravenala madagascariensis J. F. Gmel.
Ravenia spectabilis Engl.
Rhinacanthus communis Nees.
Rhus simarubaefolia A. Gray.
Ruellia ciliata Hornem.
Ruellia tuberosa Linn.

S

Sabal Adansoni Guerns.
Saccharum spontaneum Linn.
Salacia prinoides DC.
Salvadora persica Linn.
Sansevieria zeylanica Willd.
Santalum album Linn.
Sapindus saponaria Linn.
Sapindus trifoliatus Linn.
Sapium baccatum Roxb.
Saraca indica Linn.
Sarcocephalus cordatus Miq.
Sarcocephalus esculentus Afzel.
Schleichera trijuga Willd.
Scolopia crenata Clos.
Scoparia dulcis Linn.
Semecarpus Anacardium Linn. f.
Semecarpus Prainii King.
Semecarpus subpanduraeformis Wall.
Serjania curassavica Radlk.
Sesbania aegyptiaca Poir.
Sesbania grandiflora Poir.
Seseli indicum Wight and Arn.
Shorea robusta Gaertn.
Sida acuta Burm. f.
Sida rhombifolia Linn.
Sideroxylon ferrugineum Hook and Arn.
Sideroxylon longepetiolatum King and Prain.
Simaruba versicolor A. St. Hill.
Solanum indicum Linn.
Solanum Melongena Linn.
Solanum tuberosum Linn.
Solanum verbascifolium Linn.
Solanum xanthocarpum Schrad.
Sonchus arvensis Linn.
Sophora tomentosa Linn.
Soymida febrifuga Juss.

S

Spathodea campanulata Beauv.
Spondias dulcis Forst.
Spondias mangifera Willd.
Stachytarpheta orubica Vahl.
Stephania hernandifolia Walp.
Sterculia alata Roxb.
Sterculia foetida Linn.
Sterculia lanceaefolia Roxb.
Sterculia villosa Roxb.
Stereospermum chelonoides DC.
Streblus asper Lour.
Strobilanthes nutans T. Anders.
Strobilanthes scaber Nees.
Strophanthus dichotomus DC.
Strophanthus hispidus DC.
Strychnos Nux vomica Linn.
Swietenia humilis Zucc.
Swietenia macrophylla King.
Swietenia Mahagoni Jacq.

T

Tamarindus indica Linn.
Tamarix dioica Roxb.
Tecoma stans Juss.
Tectona grandis Linn. f.
Tectona Hamiltoniana Wall.
Tephrosia candida DC.
Terminalia Arjuna, Wight and Arn.
Terminalia bellerica Roxb.
Terminalia Catappa Linn.
Terminalia citrina Roxb.
Terminalia paniculata Roth.
Terminalia procera Roxb.
Terminalia tomentosa Wight and Arn.
Thespesia populnea Soland.
Thevetia nereifolia Juss.
Thevetia nereifolia var alba.
Thevetia nereifolia var rubra.
Thrinax argentea Lodd.
Thrinax parviflora Sw.
Thunbergia fragrans Roxb.
Thunbergia grandiflora Roxb.
Thuya orientalis, Linn.
Tiliacora racemosa Colebr.
Tinospora cordifolia Miers.
Trapa bispinosa Roxb.
Trewia nudiflora Linn.
Tribulus terrestris Linn.
Trichosanthes palmata Linn.

T

Tridax procumbens Linn.
Triphasia Aurantiola Lour.
Turnera ulmifolia Linn.
Typha elephantina Roxb.

U

Uraria crinita Desv.
Uraria lagopoides, DC.
Uraria picta Desv.
Uvaria macrophylla Roxb.

V

Vandellia crustacea Benth.
Vigna Catjang Walp.
Vitex Leucoxylon, Linn.
Vitex Negundo Linn.
Vitis pedata Vahl.
Vitis repanda Wight and Arn.

W

Wallichia disticha, T. Anders.
Walsura piscidia, Roxb.
Wedelia calendulacea Less.
Wikstroemia viridiflora Meissn.
Woodfordia floribunda Salisb.
Wrightia coccinea Sims.
Wrightia tinctoria R. Br.

X

Xylia dolabriformis, Benth.
Xylosma longifolium, Clos.

Y

Yucca gloriosa, Linn.

Z

Zephyranthes citrina Baker.
Zingiber Cassumunar Roxb.
Zingiber officinale Rose.
Zizyphus Jujuba Lam.
Zizyphus Oenoplia Mill.
Zizyphus sativa Gaertn.

B. G. Press—10-1-1928—871M—1,000—S. D.

Hibiscus Standard in Shinagawa

No. 5 " " 1 plant
" 7 " " 4 "
" 8 " " 7 "
" 12 " " 4 "
" 20 " " 1 "
" 27 " " 3 "
" 44 " " 8 "
" 48 " " 4 "
" 57 " " 1 "
" 59 " " 4 "
" 59 " " 3 "
" 62 " " 2 "
" 74 " " 1 plants

40

Sir,

Your obedient servant,

V.C.G.Gatrell,
Atg.Superintendent.

ts,

29.5.37

Ho Hibiscus standard (in Hedges)

30 Boug. Calcutta. n. 2
15- " " n. 13
25- " Cypheri
4 " formosa
~~20~~ 10 " glabra Var. Sanderiana
23 " " pale rose variety
10 " lateritea
18 " Mrs. Butt
~~30~~ " Mrs. Fraser
4 " Mrs. Lancaster
35- " Mrs. Mc Lean
30 " Rosa-catalina
17 " Thomasii
4 " spectabilis

Tyerrall Gate Border

Arundina - Lake side

Plant Ixora coccinea, flava, javanica bandhuca in groups.

Office Ring Road.

(1) Tabebuia rosea

(2) Cassia fistula

20 Large Cement Tubs for Plant House

Phosphate for Salix, Magsana & Poinciana

Leaf mould & manure stirred into surface of Band Stand Canna beds.

7. Rumex sucker from 6. planus

7. Weed Indigofera patch Barn Ld.

8. Morphijia coccinea seed.

9. Bird Ridge, Henderson House.

10 Weed young Bongoca Barn L.

11 Cut bark Carbon by Lynedoch Rd. Gate

12. Burnt Earth.

13 Leaves on Caesalpinia ferrea.

14. Stabo for Pachyrrhizus Rumphii ✓

15. Petrocarpia on Bark Stand in plane & Lecoma Stans

16. Cut bark Barg. & Henderson House.

8/6
12/
7 4

B53/47

Borg. by Podocarpus Rumphii and Rand bank.

Borg. Lady Hudson to propagate

" Mrs. Lancaster "

2. Replace Sago with Barringtonia + Cerbera
also Casuarina glauca if necessary.

3. Drain by Sago.

4. Canna — for side of Lake. ✓

5. Protect ground under Pelentang.

B5-3/48

CITY OF DURBAN.

15th March 1940.

Subject Exchange of Seed: Ref. 44/40.

Sir,

I beg to acknowledge the receipt of your communication of 6th Feb. 1940. which is receiving attention.

Yours faithfully,

DIRECTOR Parks & Beaches.

Curator.

Botanic Gdns - Singapore

Straits Settlements

B B5 3/49

S.060-046. H.J.P.(DBN)

T G 17

DRAFT

Fair Copy
Signed by } 44/40

6th Feb. 1940.

To The Director
Parks & gardens Section
City & Water Engineers Dept.
Durban

Dear Sir,

I beg to acknowledge receipt of your letter of 27th Dec. together with list of seeds required by you. Of those listed we can supply the following:—

Cassia fistula
" " nigra
Coelogyne cumingii
Cordia sebestena
Dillenia indica
Kleinhovia hospita
Thespesia populnea.

We will send these seeds as they become available. ~~Owing~~ As there are no distinct seasons various seeds ripen at different times of the year

I should be glad if you could let us have seeds of any succulents. by way of exchange.

Yours faithfully,

Mr. Robinson
If you do not wish to send these
Let me know.
MH.

To the Curator.

B5.3/50

S 060/053 Roberts' P. & B.W., DBN.

HJS/P.7/1.

CORPORATION OF THE CITY OF DURBAN.

27th December 1939

The Director,
The Botanic Gardens,
Singapore,
Strait Settlements.

Dear Sir,

I am very keen to obtain seeds of the trees I have listed herewith, and would be very grateful if you could see your way clear to assist me in procuring seeds of any of these trees.

If there should be seeds of any trees from these parts in which you may be interested, I shall be only too pleased to let you have any which may be available.

Yours faithfully,

P Robertshaw.

DIRECTOR

Cassia fistula
" renigera
Cochlospermum gossypium
Cordia sebastena
Dillenia indica
Kleinhovia hospita
Thespesia populnea.

In Kwala
We might ask for seeds?
Any other suggestions?
22.1.40.

B5.3/51

T

G 39

247/40

MEMORANDUM

From	To
Botanic Gardens	Asst. Curator
Singapore	Botanic Gardens
9.5.40	Darwin

Dear Sir.

No. 40/109

I have to acknowledge your letter of 29th April.

Copied 9/5/40

we can supply only one Amherstia nobilis. This plant is very difficult to propagate & cultivate & it would be very inadvisable to remove it from the pot. The weight of pot & plant is 4 lbs 7 oz. Would you prefer to have it sent by ship. The cost of the plant is $5.00.

we can get six Garcinia mangostana from the Dept. of Agriculture Kuala Lumpur @ .25 cts each plus freight & packing. These, of course, could be removed from the pots, packed in moss & sent by air. They would however, stand the sea trip quite well as I believe the fruit

B53/52

TEL. ADDRESS:
"ADMIN."
DARWIN.

COMMONWEALTH OF AUSTRALIA.

NORTHERN TERRITORY ADMINISTRATION,
BOTANIC GARDENS,
DARWIN.

IN REPLY
PLEASE QUOTE
NO. 40/109

29/4/40

247/40
6.5.40

The Director,
Botanic Gardens,
SINGAPORE.

S.S.

Dear Sir,

I desire to acknowledge the receipt of your donations of Palm seeds, listed hereunder and now tender my best thanks to you.

Orania Philippinensis.
Borassus Machadonis.
Coloeoceus Caroliniensis.
Normanbya Merrillii.
Rhapatablaste hexandra.
Nenga Wendlandiana.
Pinanga fuffuracea.

4 lbs 7/6.

2. We would be glad to purchase a few plants each of Amherstia nobilis and Garcinia Mangostana, as we have been unsuccessful in raising these from seeds.

Would you please advise where these could be obtained, or, if you could supply, please quote price for a half dozen of each. It is proposed to have them forwarded by air fransport.

Yours faithfully,

H.E.Hill

(H.E.Hill).
Asst/Curator.

Mr Ewart
Will you pl reply.
We could get Inspections from Dept of Agriculture
H Hill. R 6.5.40.

B53/53

TEL. ADDRESS:
"ADMIN."
DARWIN.

COMMONWEALTH OF AUSTRALIA.

NORTHERN TERRITORY ADMINISTRATION,
BOTANIC GARDENS,
DARWIN.
4/12/39

IN REPLY
PLEASE QUOTE
NO. 39/A.9

The Director,
Botanic Gardens,
SINGAPORE.
F.M.S.

Dear Sir,

I acknowledge the receipt of and now thank you for the three lots of seeds which came to hand on the 24th ult.

In response to your letter of Oct. 3rd I wish to advise that we are forwarding a parcel containing several lots of seed recently collected and hope you will find some of them interesting.

This parcel will go forward by the M.V. Merkur, leaving Darwin about 18th inst.

Yours faithfully,

H.E.Hill,
Assistant Curator.

11.12.39

B5.3/54

TEL. ADDRESS:
"ADMIN."
DARWIN.

COMMONWEALTH OF AUSTRALIA.

NORTHERN TERRITORY ADMINISTRATION,
BOTANIC GARDENS,
DARWIN. 20/10/39

IN REPLY
PLEASE QUOTE
NO. 39/A9

The Director
Botanic Gardens,
SINGAPORE.
S. S.

Dear Sir,

I have to acknowledge the receipt on the 28th ult. of your kind gift of a selection of seeds for which I thank you.

The seeds arrived in nice condition and some have already germinated in the nursery.

We appreciate very much your actions in sending us samples of various seeds as you have done.

Yours faithfully,

H.E.Hill.
Assistant Curator.

Mr. Ewart.
H Hill
R
24.10.39

B5 3/55

THE PANAMA CANAL
CANAL ZONE
SUPPLY DEPARTMENT
Canal Zone Experiment Gardens

IN REPLY REFER TO FILE

551|39

Summit, Canal Zone,
June 14, 1939.

Botanic Gardens, Singapore,
Straits Settlements.

Dear Sir:-

We are very pleased to acknowledge the receipt of the following seeds which arrived yesterday in apparently good condition.

Adenanthere savonina
Areca glandiformis
Aristolochia hians
Caesalpinia pulcherrima var. aurea
Cassia elata
Clerodendron serratum
Strophanthus dichotoma
Thunbergia laurifolia
Wormia subsessilis

Mr. Henderson's letter of May 1st has also been received and we are listing you for the seeds requested. Several of the species will be available shortly while others may not be available until next spring. The following seeds are being sent at this time:

Adonidia merrillii
Attalea gomphococca
Euterpe edulis
Oenocarpus panamensis

With many thanks for the seeds, I remain

Very truly yours,

Walter R. Lindsay

Walter R. Lindsay,
D i r e c t o r.

WEL*dgj.

B53|56

THE PANAMA CANAL
CANAL ZONE
SUPPLY DEPARTMENT

IN REPLY REFER TO FILE

Canal Zone Experiment Gardens

Summit, Canal Zone,
July 14, 1939.

5551|39
12-9-39

Mr. R. E. Holttum, Director,
Botanic Gardens,
Singapore, Straits Settlements.

Dear Mr. Holttum:

We wish to acknowledge, with many thanks, the following seeds which you sent us recently:

Anthurium cristallinum
Brownea ariza
Chrysalidocarpus decipiens

We are sending you seeds of Garcinia cornea and Eugenia dombeyi at this time.

Very truly yours,

Walter R. Lindsay

Walter R. Lindsay,
D i r e c t o r .

WRL/ca

B53|57

Sent Seed list 13/6/38

HARRY BLOSSFELD

CAIXA POSTAL 2189 - SÃO PAULO BRASIL

Your ref.
Nº 55/38.

April 8th, 1938.

Botanic Gardens,
Straits Settlements,
Singapore, India.

Gentlemen,

Thank you for your kind letter of February 14th in which you were kind enough to state addresses of three firms in India dealing in native flower plants. However, I have been in contact with all of these already, having asked them in the beginning of this year to send me their price lists, but failed to receive them from Messrs. Hobbie & Co. and from the Model Nursery. I have written now to both firms once more in this respect.

I am specially grateful for your kindness, and in case you are interested in exchange of native seeds from India for native seeds from Brasil, I shall gladly be ready to consider your suggestions in this respect.

Yours faithfully,
Harry Blossfeld.
Harry Blossfeld.

M. Fawcett

B5.3/58

N.V. STRAITS JAVA TRADING CO.

(INCORPORATED IN BATAVIA)

PHARMACEUTICAL/CHEMICAL DEPT.

SINGAPORE, S.S.

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LEVERKUSEN,
FRANKFURT,
BERLIN.
AND OTHER
PHARMACEUTICAL AND CHEMICAL
MANUFACTURERS.

vD/TCB

FILE 534/21 LETTER No.

SINGAPORE, 17th April 1937

The Hon. Secretary,
Singapore Gardening Society,
S I N G A P O R E.

Dear Sir,

Our principals at home have recently drawn our attention to the use of Peat Moss in gardening for improving the soil. We have also received information from other countries, for instance, Siam, that the regular use of Peat Moss is being made already. We have no doubt that this matter will also be of great interest to yourgoodself, since, especially in Malaya, the ba[illegible] soil gives difficulties in many respects. We therefore, take free to send you herewith a few write-ups and pamphlets on the use of Peat Moss and should be pleased if you would kindly let us have your opinion on this subject. Small samples are in our possession down here, but we have no doubt that our principals will gladly be prepared to put at your disposal bigger quantities, in case you wish to carry out experiments to a larger extent.

We shall also be pleased to give you any further information you might require as well as put at your disposal a few photographs which we have received from home, showing the striking comparison of the development of plants growing on Peat Moss, respectively on ordinary soil.

Yours faithfully,
p.p.N.V. STRAITS JAVA TRADING CO.

MANAGER.

B56/59

The Value of

PEAT MOSS for plants

How to use PEAT MOSS

(Reprint from Garden Digest, May 1934.)

WITH the replacement of horses by motor cars and the increasing demands of commercial gardeners for manure, the home gardener often finds it difficult to obtain supplies of manure for his garden. Then, there are many who prefer a substance which is less odorous and less inclined to be polluted with weed seeds.

The manufacture of artificial manure from litter and straw by methods devised by agricultural experiment stations has been widely advocated and practised with a good deal of success. This consists of the addition of chemical ingredients to a pile of decaying vegetable matter with the object of aiding decomposition by furnishing the needed nutrients to the bacteria which bring about decomposition.

Peats and mucks offer an excellent substitute for manure and are gradually coming into their own as our knowledge of soils and their fertility is becoming more accurate. Peat acts as a soil improver, as a source of additional nutrients, as a water holder and also serves as a medium for propagation of roots and bulbs.

The terms peat and muck are often used interchangeably. Peat is the partially carbonized organic residue produced by the laying down of successive generations of plants growing in standing water. This submerging of roots, trunks of trees, twigs, seeds, shrubs, mosses, sedges and grasses prevents decay in a manner characteristic of tillable soils. The reduction of air acts as a preservative and produces incomplete decomposition.

Peat contains a large proportion of carbon of the original vegetable matter. It is usually acid and contains a very small percentage of mineral matter; sometimes as low as four per cent. Muck contains a high percentage of uncarbonized matter and represents a further stage of decay. Peats frequently are higher in nitrogen than mucks.

The phosphorus and potash content of these materials is so low as to be negligible. When used for nutritive purposes the addition of these two elements becomes necessary, the former in the shape of superphosphate and the latter as hardwood ashes, potassium sulphate, or potassium sulphate, or potassium chloride. Many complete fertilizers supply these ingredients in the needed proportions and their use is to be preferred to that of the separate materials.

The acidity of peats makes them particularly desirable for many acid-loving plants, as azaleas, rhododendrons, and laurel. Many of our soils are alkaline, or the water applied may have an alkaline reaction. The use of acid peats helps to neutralize this effect.

Sold commercially, peat comes as a soft brown-colored material, dried and easy to handle.

The value of peats from the standpoint of their nutrient content has been questioned by many authorities, but recent experimental work has led to the belief that the nitrogen contained is quite readily available through the action of cellulose decomposing bacteria. Since the bacteria causing its decomposition are found in manures, the addition of a small portion of stable manure is suggested. One part to twenty is a likely ratio.

Let us consider various uses to which peat may be put in the garden. If you have had trouble in securing a stand of lawn grass, use peat. Sow the seed as usual, then place a mulch of one-half inch of peat over the seeding. Water well and keep moist for the first few days. Germination will start almost at once and in a short time the ground is covered with green, the peat disappearing under the mat that is rapidly formed. Peat may be used as a mulch in the spring, mixed with fine manure or with complete fertilizers.

After seed is sown in rows or broadcast, both out of doors and in boxes in the home or the hotbed, the only overing which is needed will be peat. Being a sterile medium, of high water-holding capacity and free of weeds, this covering is superior to soil, no matter how light. The fact that bacteria and parasitic fungi are rarely present in peat reduces the danger from "damping off" to a minimum.

After plants have become established in their beds—be they roses, shrubs, herbaceous perennials, annuals or bulbs—a mulch of peat will be benificial as a conserver of moisture and (if placed deeply enough) as weed control. Such a mulch reduces the labor incident to garden operations, to a large degree. The brownish color of the peat furnishes a fitting background for the green of he plants.

Peonis benefit from such applications, gladiolus thrive better, dahlias are partial to it, coniferous evergreens enjoy it and the broadleaved evergreens, such as rhododendrons, demand it. The actual application will vary with the needs, but a mulch of one inch is preferable; 100 pounds will cover an area 200 square feet, one inch deep.

Peat may be used as a winter mulch. In many instances peat is desirable as a humus to mix with the soil. It is surprising how roots like to feel their way through this medium and how luxuriant their growth becomes. With strong root development comes greater top growth. Placed in furrows under gladiolus, in trenches under small lining-out stock for the nursery, mixed with soil in and about dahlia and peony roots, or substituted for other forms of humus in the potting soil for many plants, peat is hard to excel.

In mixing with soil, use at the rate of one-fourth of the whole mixture, or if its use is to be limited to outdoor operations, work in one inch into the top four inches of soil. Tests have proved that sphagnum peat serves the purpuse of mixing with the soil best, while sedge peat is better as a mulch.

DEUTSCHE
TORFHANDELSGESELLSCHAFT M. B. H.
BREMEN

MOSS PEAT

Sanitary Poultry Litter

As a Paying Proposition

Poultry Litter and Egg Production.

FEW things connected with the management of Poultry are of more importance than Litter. The best Poultry Farmers are finding more than ever before that the health and production of the flock, and consequently the profits, depend to a large degree upon the right kind of litter. This matter, so often not given the care and attention it deserves, may easily mean the difference between profit and loss in the year's business.

WHY USE LITTER?

The reason is clear if we consider the purpose for which litter is used. What is the litter for, and what should it do?

In the first place, it **promotes exercise.** It conceals a part of the scratch grain, making the birds work to find it. This exercise is good for the birds, of course. In fact it is essential for hens confined to the laying houses.

Another object is **cleanliness.** The litter should furnish a clean environment for the flock. It should catch and dry up the droppings, and keep them from sticking to the floor. It thus helps to keep clean the feet and feathers of the birds themselves, and indirectly the eggs they lay.

But there is a still more important purpose. A good litter helps to control the **temperature** and **humidity** of the poultry house. It acts as an insulator. In winter it keeps the birds off the cold, damp floor, and prevents much of the room heat from escaping. Likewise, it tends to keep the houses cool during the heat of summer. Its greatest benefit, however, is in absorbing atmospheric moisture, and keeping the interior of the house dry. This is more important even than ventilation. Cold, damp houses are among the chief contributing reasons for the spread of such diseases as roup and chicken pox, which so seriously reduce production. The trouble is lessened in houses properly littered.

THE DESIRABLE LITTER.

If a litter is to do all this, it must have certain essential qualities. It should be **light and loose**; that is, it should bulk up into large volume when spread out. In addition, it should be **dry,** and should be a **good absorbent.** These are necessary if the litter is to absorb the atmospheric moisture and keep the house dry. It should, at the same time, dry up the droppings and absorb odours, thus keeping the atmosphere of the poultry house pleasant. It should prevent conditions that cause the spread of disease, and it should be unfavourable to the development of lice and other vermin.

The desirable litter is one that is **easily handled, durable and economical.** It should not need to be changed often, and should not stick to the floor. When removed, it should make a good fertiliser or compost. Finally, it should not be of a readily inflammable material.

KINDS OF LITTER.

Before the importance of litter was properly appreciated, numerous materials were commonly used, which to-day are considered unsatisfactory by the best Poultrymen.

Leaves, grass and weeds, for example, quickly break up, become dirty and dusty, pack down, and are not absorbent. Coarse hay also becomes packed, is susceptible to dampness, and may soon turn mouldy.

Straw, a litter often used, is a very poor absorbent, on account of its glazed surface, and unless changed often, may result in a damp, clammy house. Besides, it contributes considerably to the risk of fire.

Sawdust and shavings act as absorbents, but only to a limited

extent. Young birds are likely to become crop-bound from eating them, and they possess little or no fertilising value.

Large numbers of the most successful Poultrymen are to-day using moss peat as a litter. None of the materials mentioned comes nearer to the perfect litter than does moss peat, provided it is **high-grade peat.** Poor quality peat is likely to be heavy, solid, dirty and non-absorbent, but the best peat derived from sphagnum moss, is clean, light, loose, dry, absorbent, and makes an excellent litter.

WHY "MOSS PEAT" SANITARY POULTRY LITTER IS THE BEST LITTER.

The finest material does not give of its best unless it is properly prepared for the use to which it is put. Our Poultry Litter is selected from the highest quality of Sphagnum Moss Peat. After drying in the sun for 12 to 15 months, it is ground and graded over screens. The coarsest and loosest portions best suited for litter are put up into well-compressed bales, after having redundant dust removed. Each bale measures about 12 cubic feet, and when opened and broken up the material increases greatly in volume, and one bale is sufficient to cover from 90 to 100 square feet of floor to a depth of three inches.

Our Poultry Litter is a Moss Peat, brown or light brown in colour, and formed thousands of years ago by the growth and decay of mosses and various aquatic plants. It is characterised by its ability to absorb moisture, chiefly because of its vast internal surface, which it owes to its cellular structure—and its affinity for ammonia.

Progressive Poultrymen who have tried Moss Peat Poultry Litter have been quick to adopt it. They have found it superior not only to other forms of litter, but to other grades of Peat as well. Here are some of the reasons they give for using our Poultry Litter:—

(1) It is a labour saver. It does not need to be changed often. Many Poultrymen leave it down a year before replacing.

(2) It prevent dampness, because of its great absorbing power. It is dry and will absorb several times its own weight of water.

(3) It is sanitary. It appears to have certain germicidal properties. Laboratory tests have shown it to be remarkably free from bacterial and parasitic life.

(4) It prevents the spread of disease, by keeping the house dry and clean.

(5) It absorbs offensive odours, keeping the atmosphere of the house clean and pleasant.

(6). It keeps the birds clean. It prevent droppings from sticking to them, and thus reduces the number of dirty eggs.

(7) It makes an ideal dust bath. It has a tendency to reduce lice, probably by suffocation.

(8) It keeps the house warm in winter, by acting as an insulator. It keeps the birds off the cold, damp floor.

(9) It may keep the house cool in summer. Some Poultry men, in unusually hot weather, wet down the peat litter, thus making it several degrees cooler in the house than outside.

(10) It is economical. Though the original cost may be slightly higher, it outlasts other litter two or three times, and save the labour of handling.

(11) It does away with most of the unpleasant work in caring for Poultry. A thin layer can be spread on the dropping boards, which makes it easy to remove the manure, and prevents the liberation of ammonia fumes.

(12) It is easily handled. It does not stick to the floor or to tools.

(13) It provides a light springy mat for the birds. Heavy birds do not injure themselves when alighting, thereby reducing bumble foot and lameness.

(14) It prevents fire. It takes an intense heat even to make Moss Peat Poultry Litter smoulder, and it will never blaze.

(15) It makes a valuable fertiliser. Not only does it preserve the plant-food value of the droppings, but the organic matter in moss peat itself is highly beneficial to the soil. Many

Poultrymen sell their Moss Peat Poultry Litter manure mixture to gardeners, florists and nurserymen at a high price.

(16) It does not injure the birds if eaten. Poultry ordinarily will not eat our Poultry Litter, but such particles as may stick to the feed have no injurious effect.

Our Poultry Litter places the birds "close to nature." Though confined in an artificial environment, the birds are provided with a close approach to natural conditions, where they can scratch, pack and wallow in a clean and sanitary bed closely resembling the floor of the forest. It means busy, healthy, hungry, singing hens—**hens that lay, and therefore hens that pay.**

WHY YOU SHOULD PURCHASE MOSS PEAT BY BULK—NOT BY WEIGHT.

All moss peat is not alike. It differs greatly in texture and quality, as also in composition and stages of decomposition.

The excellence of our Poultry Litter as compared with other moss peat litters lies not only in the fact that it is put through a special drying and screening process—it is based on scientific principles. Many factors enter into the selection of the proper moss peat for our Poultry Litter; age as well as decomposition is considered.

It is dug from selected deposits of soft, spongy, slightly disintegrated moss peat that is light in weight—containing just enough of the moss fibre to be recognised—and having high test absorption properties for both moisture and ammonia.

The economy of Moss Peat as a litter lies not only in its durability, absorbing and insulating properties, but also in its low specific gravity weight, which controls the spreading capacity per unit volume.

In a test made against some ordinary peat litter against the same **weight** of our Moss Peat, the latter, when loosened out, measured 108 cubic inches, while the other treated exactly in the same way only gave $53\frac{3}{4}$ cubic inches. This means a lot to the buyer, and our Poultry Litter is just such light-weight Moss Peat carefully selected and properly prepared. A bale of our Moss

Peat Litter gives maximum quantity at minimum cost. It has the greatest covering capacity in proportion to its weight, and it is light because it is dry, and because it is made of the right kind of moss peat.

HOW TO USE IT.

Break up fine and loose. Spread on the floor of the laying house three inches deep—deeper if less than four square feet of floor space per bird is provided, or in houses with floors that drink or seep moisture from the ground.

Feed scratch grain in the litter, to stimulate exercise.

Add enough fresh litter from time to time as the old litter gets thin, to keep it about three inches deep.

Replace with fresh litter only when the old litter shows signs of getting dirty, is worked to a powder, or an odour is noticed. While straw litter may need to be replaced every four or six weeks, our litter need not be changed more than once or twice a year. year.

Some Poultrymen use it as a base litter under straw. It will absorb the moisture from the droppings, control smell, and prevent the straw litter from matting.

Spread a thin layer on the dropping boards. It makes them easy to clean and lessens the disagreeable smells which are characteristic of some poultry houses. When the litter on the dropping board becomes saturated, or a smell is noticed, renew with litter from the scratch floor, replacing that removed with fresh litter.

Spread one-half inch deep in the Brooder House. It is a fine protection for the young chicks.

It is also ideal for use in coops, scratching pens, and other places where birds are kept confined.

INSTRUCTIONS FOR OPENING BALES.

Our Sanitary Poultry Litter is packed in bales under hydraulic pressure. To open, place bale on side, cut wire, remove sticks and end packing, when the litter can readily be spread out with a rake. Do not attempt to dig out of one end.

Our
MOSS PEAT
Sanitary Poultry Litter

Is the very best and most suitable Moss Peat, specially prepared in the light of long experience, for the use of Poultry-keepers.

It is sold in press-packed bales, each containing enough litter when broken up to cover 90 to 100 sq. feet to a depth of three inches.

Small boxes are also available, containing enough litter to cover 30 sq. feet one inch deep.

Our Moss Peat is also prepared with equal care and knowledge in the form of mould for Gardeners and Nurserymen.

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WHY PEAT?
WHAT PEAT?
AND HOW!

WHY PEAT?

WHAT PEAT?

AND HOW!

MUCH interest is being shown by growers in the use of Peat, and as there are nearly as many kinds of peat as there are races of mankind, it is interesting to see how various types compare. The subjoined Table gives particulars which are the result of careful testing of various specimens.

When studying this information, it is necessary to consider what are the objects of using peat at all, but before doing so, let it first be stated that peat is not manure, and is not used or usable for the same purpose as chemical fertilisers, or for which organic ones like fish manure, bone meal, etc. are employed. It however supplies what is missing from these,—a reserve of humus or humus-forming material. Furthermore it gives very definite aid to fibrous root growth, which in turn leads to stronger and better plants and to plants which are therefore less subject to the attacks of disease and soil pests, and which are better calculated to resist such attacks.

Stable and farm-yard manure serve a two-fold purpose, the most important of which is the provision of humus and the improvement of soil texture, and the second of which is to provide plant nutriment. Such manures of good quality are none too plentiful, and they do unquestionably carry a lot of weed seed and other troubles. Leaf mould too varies very much in quality and often harbours fungus spores and insect pests.

The regular use of chemical fertilisers without adding to the humus content of the soil leads to soil impoverishment up to the point where it is worse than waste of money to apply them.

Soil Texture. Coming now to the functions of peat. One of these is to improve the mechanical condition or texture of both heavy and light soils, and it stands to reason that the peat which is the bulkiest is the most valuable, while that which takes longest to decompose or work out is the most economical, because its beneficial effect on the soil is felt for a longer time.

Moisture Absorption. Another valuable property possessed by peat, but in an enormous varying degree, is that of moisture absorption and retention. In this direction it will be readily appreciated that SPHAGNUM peat scores heavily, by virtue of the peculiar cellular structure of the Sphagnum Mosses of which it consists. The less it is decomposed too, the greater is its capacity for taking up and holding moisture, because in the process of decomposition the water-holding cells are broken down.

Light Soils. On light and porous soils the value of this property is obvious because water, instead of filtering down to levels where it is useless to plant life, is held by the peat at the disposal of the plant roots, to draw upon as required.

Heavy Soils. On heavy soils, the effect of the water-filled cells is to hold and keep apart the soil particles, and to prevent them from adhering together into the sticky mass which some soils form when wet. This same property is also a safeguard against caking or packing down of the surface, caused by the too close adherance of soil particles which have been washed together by rain or watering, or which have been trodden together when walked over.

Acidity. Another point about peat is its relative acidity. In the past it is perhaps this factor beyond all others which rendered peat unpopular, except for definitely acid-loving subjects, and there was good reason for this because a great part of the peat available was too acid for general horticultural use. This also applies to-day to a lot of the peat on the market.

It is now possible however, to get peat which is almost if not quite, non-acid, and such peat is being used

with eminently satisfactory results for a very wide range of subjects. It is this possibility of getting peat suitable for general horticultural work which has led to the recent very much awakened interest in a material which is proving itself to be of great value. The old peats however, which gave trouble in the past, are still with us, and unless discrimination is used when buying, there is likely to be a recurrence of the old troubles.

Humus. So much for soil improvement and moisture retention as reasons for using peat. Another reason is the fact that while it is performing these services, it is gradually working down into humus,—which is another sound reason for its employment.

Mulching. Peat is such an excellent insulator that as a mulch in summer or winter, it protects against the effects of heat and cold and prevents the evaporation of soil moisture.

Propagation and Potting. The above remarks cover the use of peat in the soil out-of-doors or under glass, but not less important is its value when propagating and potting.

In these operations it may be taken for granted that a medium which makes moisture control easier, which aids root growth, and which does not introduce weed seeds, fungus spores or insect life, is a valuable component of composts; and good Sphagnum Peat with its great moisture retaining capacity makes such control much easier and prevents the alternate over-wet and over-dry conditions which it is not easy to avoid, and which are likely to cause trouble. Unlike most leaf-mould and some peat, good Sphagnum peat is entirely free from weed seeds, fungus spores and insect life, with the result that it is a much safer medium to use. Another feature about good Sphagnum peat from a reliable source, is that it is always uniform and the same.

Experience has shown that cuttings root more readily when it is used, and that seeds germinate earlier and in higher percentage,—while there is much less trouble from stem-rot, damping-off, etc.

Bulb Covering and Plunging. The insulating properties, lightness and softness of such peat make it an excellent covering for bulbs, while its moisture retaining capacity makes it valuable for plunging.

We now come to the table to which the above remarks form an introduction.

TABLE.

		1.	2.	3.	4.
	Type	**Bulk/Weight Ratio** as sold. Cu. yds. per ton.	**Moisture Absorbing Capacity.** No. of times dry weight.	**Acid Reaction** pH value	**Degree of Decomposition.** Swedish Scale.
"SORBEX"	Sphagnnm	12·61	16·07	5·6	H1/H2.
OTHER PEATS					
Sample A ..	Sphagnum	7·83	10·62	2·56	H4.
Sample B ..	Sphagnum	6.16	7·12	2·8	H5.
Sample C ..	Sedge	3·25	5·80	3·46	H6.

NOTES.—**Col. 1.** All peat when sold contains some moisture, and figures in this column are based on peat bought in the open market. Small bulk in proportion to weight is due to moisture content and over-decomposition.

Col. 2. Figures are based on samples from which *all* water was extracted before testing.

Col. 3. In this scale for comparing acidity, 7 = neutral. The lower the figure below 7, the greater the acidity,—thus 5·6 shows much less acidity than 2·56.

Col. 4. In this scale H10 = complete decomposition, and H1 = no decomposition at all. The higher the index figure therefore, the greater the extent of decomposition.

The above table is compiled from careful tests of representative samples of standard peats, and while it is possible that other samples from the same sources may show variations from the figures given, the Table shows on general lines the essential differences between the types of peat compared.

Apart from these varieties of peat, quantities are dug from local heaths, commons and woodland. Some of these are entitled to be called peat, but most of them contain a high percentage of sand or soil, bracken and other roots, and other impurities; while fungus spores, insect life and weed seeds are very likely to be present.

It will be seen from the Table that SORBEX compares very favourably in the essential properties of,—

Bulk/weight ratio,

Moisture retaining capacity,

Freedom from acidity,

Degree of decomposition,

while its uniformity from year to year is guaranteed by the great extent of the deposits from which it comes, and the care with which it is selected.

Methods of Use.

For all purposes SORBEX should be thoroughly damped down before or when using.

For Soil Improvement. The quantity depends to a great extent on the nature of the soil to be treated, but for general purposes one bale per 200 to 300 sq. ft. is suggested. Economy can be effected by using SORBEX only in the rows in which planting is done, or in the case of trees, shrubs and the larger herbaceous subjects, when filling up the plant holes. If this latter method is adopted, a 50/50 mixture of top soil and SORBEX has proved satisfactory.

For subjects which are definitely lime-lovers, it is desirable to add a little horticultural lime, but generally speaking, if SORBEX is spread over the area to be treated a few days before being worked in, this will be sufficient to neutralise any slight acidity which may be present.

On porous soils, dig SORBEX in to root level, where its moisture retaining capacity will be of most value.

On heavy land it is most useful if hoed into the surface, where it will prevent caking and cracking, and will keep the surface open to light, air and moisture. Such soils are usually sufficiently retentive of moisture in themselves, but for the more deeply rooting subjects SORBEX will prove beneficial if dug into the lower levels as well. In such cases it prevents the soil from becoming water-logged and aids drainage.

For Propagation from Seed. Good results are being obtained with a wide variety of subjects by sowing in SORBEX alone, as it contains sufficient nutriment to bring the seedlings

along to the pricking-out stage. This method takes full advantage of the fact that SORBEX contains none of the fungi which cause damping-off, while the possibility it gives of avoiding alternate over-dry and over-wet conditions is another safeguard against this trouble. Not only is there less risk of trouble after germination, but a higher percentage of germination and stronger seedlings may be looked for. Alternatively, use a 50/50 mixture of SORBEX and loam, with a little sand. For seeds which are specially sensitive to acidity add 2 lbs. of lime per cubic yard (or bale) of SORBEX.

For Propagation from Cuttings. Ease of moisture control and the sterility of SORBEX are again advantages, as they lead to much less risk of loss from stem-rot and other fungoid troubles, while SORBEX definitely speeds up and gives better and stronger rooting. One part of SORBEX to three or four parts of sand is recommended for most soft-wooded plants. Most ericaceous subjects root best in SORBEX alone, but some Azaleas, especially those of the Kurume type, prefer a 50/50 mixture of SORBEX and loam.

For Potting. As a component of potting composts, SORBEX possesses several advantages over leaf-mould and most other peat. Chief of these are its capacity for retaining moisture, the encouragement it gives to fibrous root growth, and the fact that it is quite free from fungus spores and dormant insect life, which are often present in leaf-mould and some kinds of peat.

For first potting 33/50% of well-moistened SORBEX should be used, the balance being made up with loam and a little sand. For re-potting into larger pots, the proportion of SORBEX should be reduced to 20/25%. It is an advantage to put about half an inch of dry SORBEX at the bottom of each pot.

For subjects which are known to be lime-lovers use about 2-lbs. of lime per bale of SORBEX when making up the compost, but generally speaking the acid re-action of SORBEX is so slight that it needs no more treatment in this way than does leaf-mould.

The proportion of SORBEX to be used in potting composts varies according to the nature of the loam, but users readily ascertain the best quantity in order to get the texture they desire.

SORBEX

MOSS PEAT MOULD

is **Sphagnum Peat** of the very best quality obtainable. Its quality is maintained from year to year because the deposits from which it comes are so large, that it is possible to select only the best of the peat for horticultural use, and still maintain the very considerable output at a high standard. This is of interest to you, because if you are satisfied with the trials you make now (and we are sure you will be), you can depend on getting just the same material again.

SORBEX is stocked in two grades,—**standard,** for general horticultural work, including propagation and potting and **fine,** which is preferred by some users for propagation and potting, and which is excellent for top-dressing lawns and greens.

SORBEX is sold in bales averaging 20 bushels (about 1 cubic yard) and not by weight. It is in your interest to buy by bulk, because weight can be made up by moisture content and over-decomposed (and therefore denser) material.

J. C. & A. T. Sawtell, Ltd, Printers, Sherborne

Deutsche Torfhandelsgesellschaft
mit beschränkter Haftung
Bremen

Sphagnum Moss Peat for Gardens

What MOSS PEAT will do for you.

MOSS PEAT will prepare any soil for garden purpose and will improve the best growing soil, both physically and in fertility.

It breaks up and renders more friable heavy and clay soils. It binds and gives more body to loose sandy soil. It assures a constancy of moisture about the plant root level at all times. It acts as a reservoir for plant food applied in a form of commercial fertilizer.

A FACTOR OF IMPORTANCE

To the average gardener peat of any sort suggests a medium for the culture of plants, notably ericaceous. The fact that fibrous peat, or moss peat, can be a valuable agent in general cultivation is not nearly so well known as it deserves to be. Continental horticulturists long ago discovered the immense possibilities of this material, and have made its use a regular practice in practical gardening, private and commercial. These astute

growers, however, demand a moss peat of sound character. Their ideal is a substance of flaky, spongy texture which granulates easily and is free from that acidity which is common to many kinds. Nature's reserves have been tapped, an ideal horticultural moss peat was secured, compressed, and put on the market ready for immediate use.

What, then, are the uses of this material? In the first place it is an absorber of water. The most absorptive of all forms of humus, it takes up moisture like a sponge, and holds it under the most trying conditions for an extraordinary length of time. Thus, added to a sandy or otherwise light, hot soil, it not only keeps this moist and cool, but it binds the particles together, and in conserving the moisture, prevents the otherwise inevitable loss of plant foods by seepage. It becomes a reservoir for both the natural fertilising elements of the soil and any artificial stimulants we may put into it.

EFFECT ON HEAVY SOILS

On the other hand, this moss peat is no less beneficial in effect upon stiff, clay ground, which it will render freer and more workable. In such soil it breaks up the clods, accelerates drainage, prevents caking and cracking, and so transforms a cold, adhesive medium into a warm and friable, easily-worked loam, which will ensure earlier and better crops of most things. For improving both light land and heavy the efficacy of moss peat has been so satisfactory in results, so economical in application, that its regular use in all phases of garden work may be enthusiastically advocated.

There are various forms of moss peat, differing in their texture and other attributes. It is as great an advantage to secure the best as in the case of loam or potting sand. Our moss peat is virtually pure sphagnum in a state of suspended decay. It is soft and flaky to handle, crumbles to a loose brown mould when damp, and so absorptive is it that it will soak up and retain more than twelve times its own weight of water. Of no other natural humus can so much be said. One may go further and emphasise the significant fact that the best sphagnum peat offered for garden use is in a state of such perfect sterilisation that it contains not a suspicion of weed seeds, insect pests, fungus spores, or any other of those risks which accompany the use of manures and various other forms of humus.

As a mulching material, this purity is obviously of the very highest value, but sphagnum peat here again proves in a mechanical way its unique merits as a holder of moisture. In summer — and especially with dry soils — it will so check evaporation and retain water that, whether used in the kitchen garden the orchard, among choice shrubs, or the flower borders, it is often the means of averting failure and bringing about success. It is also utilised for covering the roots of tender plants against frost. In both cases, the effect may be regarded as very similar, for the peculiar function of the moss is to provide an insulating jacket against both heat and cold. And, no matter how it is applied, it will soon be obvious to the user that here is a material which tends to aerate rather than to pack and bind, a feature of signal importance, whether it is used in the soil or upon it.

Among the many other virtues of this sphagnum moss peat is its amazing durability. Just as it has lain for countless ages in the storerooms of earth, defying the most potent agents of destruction, so, when put into the soil, it still resists disintegration, and its influence can almost be regarded as permanent. Thus,

here again, is suggested economy in one of its most attractive forms, economy in both material and labour, plus a standard of efficiency which is rare.

As a root-promoting medium this substance has a strangely stimulative effect. What it is which causes this root activity science does not yet clearly understand. But there is, nevertheless abundant testimony to prove that sphagnum moss not only encourages fibrous root energy to a remarkable degree in the ordinary course of cultivation, but also in propagation of difficult subjects by cuttings, in seed raising, bulb culture, propagation from tubers, forcing, and a host of other ways, has yielded surprising results.

There was a time when we pinned our faith to stable manure and leaf mould, which provided both humus and nitrogen, but in sphagnum moss peat we have found that which does all that the old manures did as providers of humus, and a great deal more. It has proved to be one of the most reliable elements ever used for the fixing of nitrogen and other plant foods, which it holds in solution for root absorption. Its natural purity places it far beyond leaf mould and the like, and at the same time it is clean to handle, light, portable, and extremely easily applied.

How to use it.

Damp the Moss Peat down well and do not dig it in too deep. On light and sandy soils one pit is quite sufficient, as it will then be correctly placed to hold moisture where it is most wanted. On heavy soils it is enough to hoe it into the top layer where its presence will ensure against caking and binding and will aid the necessary aeration of the soil.

Generally speaking, a layer of Moss Peat Mould about two inches thick spread over the soil and either dug or hoed in, as suggested for light and heavy soils respectively, will be enough for the first treatment, and this should be repeated from time to time until a soil of the required character has been developed. If the soil is particularly porous or stiff as the case may be, a greater quantity of Moss Peat can be used for the first treatment with advantage.

On opening a bale of Moss Peat, break it up as fine as possible, wet it thoroughly and expose it to the air for two or three days before application. In wet weather, all that is necessary is to break up the bale and let the rain do the rest.

SOLUTIONS to the MANURE QUESTION.

HOW TO USE GRANULATED GERMAN PEAT MOSS
as the basis of a rich organic Fertiliser.

One Way. Break up a bale of Peat Moss thoroughly, so that no lumps are left. This is done by cutting the wires, removing the battens, and then beating the peat down with a rake, another way is to rub the peat through a ¼-in. mesh screen. Then moisten the peat with as much water as it will absorb. If liquid manure is available for this purpose, so much the better. Leave the heap of moistened peat for a few days to give it time to soak and swell, then moisten it again.

The peat which should now be in a crumbly condition, is then spread over the bed to be treated about one inch thick and mixed as thoroughly as possible with the soil by raking or hoeing it in.

When using Peat Moss as a soil improver in the Autumn it is helpful to add 15 lbs. of Basic Slag and 15 lbs. of Kainit. If Peat Moss is used in the Spring, add 20 lbs. of Nitro-phoska instead. In each case these quantities of fertiliser are per bale of Peat Moss used.

A Better Way is the making and use of Peat Moss-compost. After a bale of Peat Moss has been broken up as suggested above, add 11 lbs. of Calcium Cyanamide, 15 lbs. of Kainit and 15 lbs. of Basic Slag. Mix these well in with the peat and add as much water as it will absorb. This moist peat mixture is then placed in a heap of triangular section about 4 ft. wide at the base, and 2 ft. high. Beat it together firmly with a spade and cover with about three inches of good soil. Leave the peat to stand for at least four weeks. If it is made in the Autumn, it can stand all through the Winter.

The next thing to do is to turn over this peat-compost heap with a spade in such a way that the soil covering it is thoroughly mixed in with the peat. Then build it into a new triangular heap, hollow out a channel along the ridge, and pour water into this channel to moisten the compost again. Cover the heap with not more than two inches of soil again in order to prevent evaporation. Three weeks later turn the entire heap over again with a spade, when the material will be ready for use. You will now have a rich peat manure, dark in colour, and having the structure and smell of a good compost.

The heap can be built up and treated in the place where it is to be used.

From one bale of Peat Moss, 41 lbs. of fertiliser, about 90 gallons of water and about 12 cu.ft. of soil, a heap of rich compost, about 10 feet long is obtained,- sufficient to fertilise an area of 1000 sq.feet.

The proportion of plant food to organic matter in this peat compost or manure is equivalent to that of good stable manure. This rich manure is cheaply and easily prepared, and is useful for all purposes.

The Best Way is the preparation of peat-humus soil by combining Peat Moss with any available liquid or solid manure from large or small animals or birds, and by composting the mixture in heaps. The object of this procedure is to eliminate the disagreeable properties of the manure, such as its smell and its influence on the quality of vegetables, etc., while the decomposition of the peat particles is hastened at the same time.

In the case of cattle and other animals the peat is used as litter in the usual way. Shake the litter up every day and add a little fresh peat to replace that removed with the manure from time to time. In the case of birds and poultry, spread a thin layer of Peat Moss on the dropping boards. Rake this over daily, and only remove it when it begins to smell.

Build up the mixture of manure and peat to obtained into a heap of triangular section about 2 ft. high and immediately cover it with soil. It is essential that poultry manure be well moistened before this is done. As more and more manure is collected, add it to the length of the heap, not to its height. When enough has been obtained, dig the heap over thoroughly, build it up into triangular shape as before, and cover with soil. In a few weeks time turn it over again. The addition of 6 lbs. of Kainit per bale of Peat Moss used is recommended to make up for deficiency of Potash in the manure. Leave the heap a few more weeks, when it will have the structure and smell of good compost, and is ready for use as a very efficient fertiliser.

If this method is adopted, an excellent organic manure is obtained in a short time (about two months), and at a minimum of expense.

Peat Moss should also be used for composting kitchen and garden refuse, leaves, etc. Arrange the refuse in alternate layers with a mixture of Peat Moss and soil. The section of the heap should be triangular and its maximum height 2 ft. 6 ins., while it is essential to keep it in a moist condition. The addition of fertilisers as suggested under the heading "A Better Way" is also desirable, because in addition to the provision of plant food, they help to accelerate the decomposition of the garbage and refuse.

Treated in this way, the mixture will be ready for use in the short time of five or six months. The addition of Peat and the fertilisers suggested promotes and hastens the decomposition of kitchen and garden refuse. The presence of the peat leads to better aération of the heap and keeps it moister, while the peat itself is converted into the right material for the development of the so essential soil bacteria.

PEAT MOSS IN TOBACCO SEED BEDS.

Report on practical tests with Peat Moss in Tobacco- Seedbeds carried out in Brazil.

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1) Application: About 2¼ lbs. of Granulated PEAT MOSS was used for the treatment of one square yard each of the seed beds.

After breaking up the peat as fine as possible it was spread over the bed and hoed into the soil about 2½ inches deep. The experiments were carried out at the beginning of August, which is rather late for the conditions of this climate. Though the soil contained sufficient moisture at this time, the seed beds were watered well once more, thus giving the soil the proper amount of moisture, it then was slightly pressed down by means of a plank, so that the seed bed became absolutely smooth. After working into it as fertilizer 10 lbs. of Nitrophoska C per 100 square yards, a table- spoon full of good tabacco-seed was used for that area. Then a fine spray of about ½ inch of dry Peat Moss was employed as a mulch and again slightly pressed down as above. The seed beds, prepared in this way, were in a very elastic condition, due to the Peat Moss employed. After 5 to 6 days time the seed germinated strongly and healthily, it may be mentioned that in this country during the month of August the soil produces sufficient warmth to addelerate the germinating process. Weather conditions were favourable, so that the test-beds did require no further watering. Besides the insulating layer of ½ inch of Peat Moss spread over the beds guarded against evaporation and effects of the heat.

2) Observations on the growth: The young plants showed a quick, strong and healthy development, so that they were transplanted already at the end of October/ beginning of November. On account of the loose elastic structure of the soil, which withstood even violent showers of rain and which remained in the same good condition all along, the tobacco seedlings developed a tremendous root system with an abundance of fine and fibrous feeding- roots and consequently a healthy foliage. It was often noticed here that tobacco seedlings could not develop a strong root system for reason of the unfavourable physical condition of the soil. In such instances the main root is striving into the depth without developing sufficient feeding-roots, so that the weak plants cannot resist the attacks of diseases of any kind, when often 60 to 70 % of them succumb. It is a confirmed fact that the PEAT MOSS vastly improves the physical condition of the soil and gives the plants a considerable resistance power against diseases.

3) Transplanting: Seed beds treated with PEAT MOSS show the enormous advantage, that the seedlings can be pulled out easily without the slightest injury to the plant or fine feeding-roots. The delicate root system remains fully intact, the customary set- back in growth after transplantation did not occur, but

the young plants thrived beautifully and quickly. The main root was short but strong, the fine feeding- roots had solidly grown into particles of the peat, with which the seedlings could be transplanted into the fields. It was a pleasure to observe how extremely well the plants withstood the detrimental effects of transplantation and how quickly and evenly the growth continued. Furthermore they showed a diceded tendency to feed on the fertilizers to a much greater extent than ordinarily, in fact the Peat Moss- treatment evidently results with the plants in all the preliminary conditions for producing quality- tobaccos.

In this country the seed beds generally suffer from various kinds of fungus - diseases which often kill 100% of the seedling specially so on a sandy soil. A cover of algae forms on the beds preventing the essential air- circulation in the soil, while at the same time the moisture helps the growth of the fungus. In order to counteract these evils the beds were systematically given a thin cover or spray of dry Granulated Peat Moss just high enough that the young green leaves remained visible here and there. Whenever the fine peat layer was washed off the leaves by rain, the treatment was repeated until transplantation-time. Already after the second spray with peat dust, the algae disappeared and the upper soil showed the desirable loose structure, permitting the seedlings to develop an abundance of feeding-roots and to grow healthily. The dry peat dust evidently absorbs any excess in leaf-moisture and consequently prevents spreading of the fungus. When the plants which had already sufferd from this disease subsequently resumed their growth, the beds were treated with fertilizers such as Nitrophoska B and partly also with sulphate of ammonia. In this manner seed beds which were already doomed could eventually be saved, a great result. Such treatment of the beds with dry peat dust should be undertaken as soon as the plants develop the 4th, 5th leaf. Peat Moss has the further great tendency that it prevents the growth of weeds.

The many kinds of diseases to which tobacco-seed beds are subjected require special precautions and methods, still no radical remedies seem to exist so far. The safest preventative against the effects of seed bed- diseases seems to be to obtain in the beds a soil of the best possible physical condition, which permits raising strong, healthy seedlings. Only such seedlings have a good chance to withstand the attacks from fungus and other enemies, and practical experience has taught that the use of PEAT MOSS in tobacco seed beds is a reliable medium to ensure a final success.

GERMAN PEAT MOSS IN CELERY CULTURE

Translation from Die Gartenbauwirtschaft dated February 22,1934.

"What may be accomplished in celery culture by proper attention to the soil through the use of German peat moss is demonstrated by the results obtained in the first year of a practical experiment performed at the experimental station of the Gardner's Training School at Wolbeck,province of Westfalia,in Germany.

"Eight species of celery were planted on new soil,each species occupying 5 rows of 80 plants to the row,making 400 plants of each species. About June first the whole surface was given a dressing of nitrogen salt(such as kainit). As soon as this top dressing had worked into the soil one half the surface was covered with peat moss as taken from the bales. During the following weeks when the ground was cultivated it was evident how loose and open the soil remained where peat moss had been used and how badly the soil had clogged on the area not covered with peat moss. And this difference was particularly noticeable in the better growth of the plants on the peat moss treated soil.

"In order to proceed uniformly the third row of each variety of celery was harvested during the last week of October. All the harvested celery was cleaned and dressed in the same manner and then the weights were taken. Therefore there were available for comparison 40 stalks of each variety which had been grown on peat moss covered soil and the same number of each variety grown on uncovered soil. The comparative weights follow.

Variety of ready dressed celery knobs	Grown under Peat Moss covering		Grown without Peat Moss covering	
	No. of Pieces	Lbs.	No. of Pieces	Lbs.
Magdeburger	40	121	40	66
Schneeball	40	94.5	40	56
Riesenkugel	40	79	40	54
Alabaster	40	74	40	49.5
Delikatess	40	69	40	43
Imperator	40	58	40	35
Kurzl.Apfel	40	55	40	37.5
Prager Riesen	40	52	40	38.5
		Lbs. 602.5		Lbs. 379.5

"It is natural that there is considerable variation in weight of the different varieties,but the important feature is that without exception the crop grown under German peat moss was much heavier than that grown where the ground was not so treated.The total weight of the celery grown under the German peat moss exceeds the total weight of that grown without peat moss by exactly 59%.The facts gained by this experiment are substantiated by like experiences in various parts of Germany."

The German peat moss in this case was used as a mulch instead of being mixed with the soil because a soil suitable for celery pro-

duction had been selected for this experiment, therefore additional vegetable organic matter in the soil was not absolutely necessary, but using German peat moss as a mulch even on such favorable soil served as an insulator to prevent sudden changes of temperature, prevented evaporation of soil moisture, prevented the growth of weeds and kept the soil in a loose and workable condition with the above remarkable results.-

One bale of German peat moss will cover 300 square feet of ground one inch in depth.

Water Holding Capacity of Soils aided by the Use of Peat Moss

Recent scientific experiments tend to prove that the addition of peat moss to soils materially aids the constancy of water supply, as well as increasing the maximum amount of water soils will hold. It is evident from the preliminary work already done, and which serves as a basis for arriving at this conclusion, that this soil amendment is a most satisfactory means of building up the water-holding capacity of garden soils to the desired point.

Tables 1 and 2, a summary of the early determinations, show the steadily increasing amounts of total water heavy, and light soils will hold when blended with varying amounts of peat moss, and serves as a basis for arriving at the conclusion regarding the effectiveness and the economical feasibility of the particular type organic matter.

Table 1 - Water-holding capacity at saturation, of clay soil as effected by varying percentages of peat moss.

(Expressed on basis of dry weight of sample)

% Peat Moss by Volume	Water-holding capacity of clay soil at saturation	Water-holding capacity with peat moss added
25%	34%	49%
50%	"	73%
75%	"	169%

Table 2 - Water-holding capacity of sandy soil as effected by varying percentages of peat moss.

(Expressed on basis of dry weight of sample)

% Peat Moss by Volume	Water-holding capacity of sandy soil at saturation	Water-holding capacity with peat moss added
25%	20.5%	38%
50%	"	70%
75%	"	141%

These tests suggest the promising water supply that may be had through amending soils with peat moss. Table 1 shows a definite increase in the total water held in heavy clay soil when the organic material is added and, the data in Table 2 shows clearly the favorable effects of the addition of peat moss to soils of a sandy nature.

With the addition of as little as 25% peat moss, the water-holding capacity of the heavy clay soil, which at the start had a capacity of 34% at saturation, was raised to approximately 50%; while in the case of the sandy soil, with a capacity at saturation of only 20.5%, the water-holding capacity was raised to nearly 40%; twice the amount of total water. SINCE THE MIXTURES WERE COMPUTED ON A VOLUME BASIS, 25% PEAT MOSS IN THE MIXTURE MEANS ONE PART OF PEAT MOSS AND THREE PARTS OF BASIC SOIL. IN THE GARDEN IT MEANS TWO INCHES OF PEAT MOSS MIXED WITH SIX INCHES OF SOIL.

That the constancy of water supply in the soil, as well as the total amount, is an important factor in plant growth, is well known. It is only one of the reasons why irrigation produces bigger crops even in

climates where the total rainfalls should be sufficient to supply the maximum growth. Peat Moss is compared to " billions and billions of tiny sponges." It is doubtful if a better description could be found. These myriads of minute sponges mixed with the soil, hold the life-giving water directly where the thirsty plant roots can most conveniently find it and make use of it.

Aside from changing the water-holding capacity of the soil, Peat Moss has many other important functions. There is probably nothing which can replace its valuable property of regenerating roots and promoting good root growth. It is suspected that this is due to the presence of a sex hormone, although the remarkable root growth has on occasion been attributed to an X factor, called " Auximones, " or, as they might be termed, auxiliary bacteriological helpers.

The above combination of qualities in Peat Moss makes it the better soil amendment.

FERTILISING VALUE OF POULTRY MANURE.

The true manurial value of poultry droppings is not always fully realised, with the result that this extremely useful by-product is often wasted or thrown away. Actually poultry droppings have considerably more fertilising value than stable manure.

A hen produces on an average, about 13 lbs. of droppings a year, of which nearly 8 lbs. are deposited during the night.

In order to save much of the Nitrogen which otherwise is not only lost, but is also responsible for objectionable smells, and also to add to the bulk of the manure, it is a very considerable advantage to use good moss peat as litter in Poultry Houses and Runs, and on Dropping Boards. Not only is the resultant manure better and more bulky, but the moss peat prevents the droppings from sticking to the floors and dropping-boards, and therefore reduces the labour of cleaning out.

It is worth remembering that the fertilising value of 1000 lbs, of Poultry Manure equals that of a mixture of, -

100 lbs. of Kainit
100 lbs. of Nitrate of Soda
100 lbs. of Superphosphate.

It is therefore obvious that manure composed of poultry droppings and moss peat will benefit every Poultry Farmer's own land or his pocket, if turned into cash by selling it as fertiliser to neighbouring farmers and growers.

Copy.

C A I R N S C I T Y C O U N C I L

Council Chambers,
Cairns,
North Queensland

15th March, 1935.

Mr. Hagedorn,
Agent for Peat Moss,
CAIRNS.

Sir,

Referring to your enquiry as to the results of trial of peat moss, of which a bale was presented to you by the City Council, I have to report as follows:-

(1) I found same very useful for propogating young orchids.

(2) A liberal quantity mixed up with potting soil on examination showed how much the young trees and shrubs appreciated it. Their young roots could be seen actively feeding on the peat moss.

(3) I found a top dressing of peat moss on the large vases of plants at the City Council prevent same from drying out quickly during the past trying period of drought. The moss acting as an effective reservoir for water.

(4) For goateeing young fig trees the moss is vert suitable, and in conclusion I would like to say that in these times of motor transport, when horse manure is getting scarcer and scarcer, peat moss should be a splendid substitute especially in top dressing lawns, after which there would be no trouble with weeds.

Yours faithfully,

signed Leslie Wright
Curator

GERMAN PEAT MOSS FOR GROWING DAHLIAS

Dr. P.W.Zimmerman of Boyce Thompson Institue propagates Dahlias from cuttings as follows:

> The clumps are divided as for ordinary planting, after which the divisions are buried in moistened peat moss in the warm temperature of a greenhouse, where the sprouts soon develop. When these shoots are large enough they are cut off and set directly into potting soil in 4 inch pots and the pots are plunged to the shoulder in moist peat moss. If necessary shade is supplied with a single layer of cheesecloth which is kept moist for about a week with frequent light springklings. By this method rooted plants are available within a week or ten days from the cutting date with a minimum expenditure of space and labor.

R.W.PETRIE, a Michigan dahlia grower, uses peat moss in growing dahlias from seed as follows:

> The seed is usually planted in flats which are filled to within one inch of the top with 1/2 fine German peat moss and 1/2sand. One of the advantages of this mixture is that it eliminates the presence of weed seed and the peat moss furnishes nourishment and moisture to the young plants while growing. For larger growers he advocates broadcasting the seed thickly on this prepared bed, removing and potting the seedlings when they reach a height of three to four inches.

Dr.A.E.White, a Michigan grower, advises the following method when planting chosen plants for parent stock:

> Refill the holes with the original dirt, an occasional shovel of sand, a frequent shovel of compost and two shovels full each of German peat moss and wood ashes. After the dahlias are well started cultivate the ground, apply two to four inches of German peat moss as a mulch and wet this down thoroughly. Further cultivation will probably be unnecessary throughout the entire season.

SOME HINTS

about the making of COMPOST in gardens.

The compost heap is the saving bank of the owner of a small garden, giving him at the same time the only chance to make his own good agricultural manure.-

Compost is a fertiliser of garden mould and nutritive substances combined; i.e. it supplies the soil with bacteria and at the same time with food for same and furthermore a number of easely assimilable vegetabilic nutritious substances such as nitrogen, phosphoric acid, potash and lime.-

One should know how to make compost properly. It will not do simply throwing together waste materials, such as refuse, garbage, leavings etc. and then let them lie a year or longer. On the contrary, one has to proceed in a manner that such substances will be quickly disintegrated by bacteria. To do so they require air and humidity; furthermore a very careful mixing of all components is essential and last not least, nutritious substances for the bacteria.

Hence: humic matter, water, nutritious substances, and air all well mixed with earth are essential components of a good compost heap.-

Humic matter we get by placing all kinds of waste matter on the compost heap; weeds from flower beds and walks, grass from cut lawns, leaves, straw waste, kitchen leavings of all kinds, everything is carefully collected, nothing thrown away. Another very important producer of humus is Granulated Peat Moss. It amply supplies humic nourishment and also in other respects is very important for the compost heap. 10% of the compost heap ought to consist of peat mull.-

Water is the second necessary requirement; without it no life is possible. Just during the summer season, when the growth of bacteria is fastest, rain coming from above is not sufficient. So we have to sprinkle water on the compost heap from time to time, and by carefully shading it prevents itsgetting too dry. Here again peat mull renders most excellent service by absorbing a lot of water and holding it like a sponge. Peat moss will hold 10-15 times its own weight of water. Well soaked and placed on the compost heap it will hold water for a long time thus offering most favorable conditions for the rank growth of bacteria.-

Nutritive substances were mentioned as third requirement for the proper compost heap. This sounds odd, the compost itself having the task to collect and transform such substances. We must however bear in mind that bacteria are plants and only do function when meeting with nitrogen, phosphoric acid, potash and lime in soluble form. If this does not happen, then the rotting or disintegrating process will take a long time, some 2-3 years. Stimulating however life with nutritious substances will materially accelerate this process, especially if everything is thoroughly mixed: then in half a year the compost heap will be ready for use.

Nutritive substances are most conveniently supplied in the form of liquid manure and fecal substances. Here again peat mull is of the greatest help acting as a carrier of these materials, making them handy and at the same time preventing losses.

Liquid manure contains mostly nitrogen and potash, fecal substances phosphoric acid. In the form of ash we also add much potash and lime to the compost heap. Where liquid manure and fecal matter are not available, one may add to the compost heap some lime-nitrogen and Thomas flour, 1 - 2% figured on the whole bulk of the heap will do.-

Air was lastly needed for the making of compost. Air we can only get into the compost heap by building it up loosely, and so it will stay unless built high. Do not make it higher than a little avobe 1/2 yard as otherwise air will be squeezed out o the lower part of the heap.

Under no circumstances must one stamp or tread on the heap.

When building a heap do not economise on earth; it will keep the heap loose, will bind volatile nutritious substances and add bacteria.- When starting on a new heap, add a shovel of the old compost mould from time to time; this will inoculate bacteria into the new heap.-

Very important is the proper placing of layers of the different materials. Until now this was done by simply placing waste materials, garbage, leavings etc. in layers one upon the other. This is not practical, 1, because the old compost may already be half ripe, while on top of the heap there may be materials not yet decomposed; 2, because in all probability in this way the heap will be built too high. Layers shou'd be placed not horizontally but slanting and the heap should grow not in height but in length.

Arrange the heap in the profile section of a triangle, 1/2 yard high and about a yard wide. Begin with earth and then place in thin, slanting layers what you may happen to have on hand weeds, mould, ash, peat, Thomas flour, earth, kitchen leavings, earth, peat with liquid manure etc. etc.-

Be careful to always have earth on top of the heap. After some time shovel aside that part of the heap, where you started building it, using the free space thus gained right away for a new heap. On top of the heap, along its ridge hollow out a channel to properly irrigate the heap.- In this way your compost will be ripe and crumbly within a very short time.-

In following these suggestions you will have enough compost not to reauire expensive stable manure nor costly mould manure. Your whole expense will be the purchasing of a few bales of peat mull and a few bags of commercial fertiliser.-

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PEAT MOSS FOR NURSERYMEN AND GREENHOUSE KEEPERS

Many nurserymen and greenhouse keepers are apparently missing the advantages to be derived from the use of peat moss.

It is a well known fact that soil cannot be kept in good workable condition without the constant addition of some form of vegetable matter. Stable Manure will do this if a sufficient supply of well composted material is available,but usually it is not. For this reason farmers resort to cover crops or catch crops which they plow under year after year,but this recourse is not open to those who farm under glass or who use their soil the year around. Any farmer to-day who would attempt to grow things without maintaining the organic content of his soil would be making a useless struggle.

Some nurserymen and greenhouse keepers are fully aware of the need of organic matter in the soil,but many are not. Examinations of the soil in many greenhouses proved that no organic matter in any form is ever used. Such soil under the moist ,warm conditions of a greenhouse maintains plant life fairly well if plentifully supplied with plant food. But plants grown under such conditions will not stand up when removed from the greenhouse. Such potting soil dries out quickly and becomes so hard that more moisture cannot be readily absorbed. Flowers grown in it lose their freshness almost immediately when removed from the greenhouse,and the plants will not thrive.Many growers lose their reputation among florists for this reason. To prevent such a condition no other known substance is equal to German Peat Moss.

We quote from an eminent authority:

"As a propagating medium,both for starting seeds and rooting cuttings peat moss is unquestionably without an equal. It supplies to perfection the requisite mechanical conditions-moisture holding capacity,drainage and aeration- to assure the highest possible results in the germination of seed and the formation of new roots from cuttings. And due to this peculiar stimulation of root development it is in a class by itself." For some plants pure natural peat moss is best- for most plants a mixture of equal amounts peatmoss and sand is better. For a few plants the peat moss should be neutralized.

"As a forcing medium,for growing bulbs in bowls or plants in pans or pots,it has proven superior to everything else which has been tried. Thoroughly saturate the peat moss,allow the surplus moisture to drain off,fill the bowls nearly full and burry the bulbs up to their necks."

Wether seeds are to be started under glass or out of doors,peat moss will render the work easier and much more certain.For the majority of seeds pure granulated peat moss is superior to a mixture or compost. It consists of decayed vegetable matter which contains sufficient plant food to start the seedlings and to continue vigorous growth until they are old enough to transplant.There is no danger of infection with injurious bacteria,the seedlings will make a more rapid growth and the danger of them being attacked by a " damping off " disease is lessened."

Granulated peat moss shows only a slightly acid reaction and is not in the least injurious to the great majority of flower or vegetable seeds. For lime lovers this acidity may be neutralized by adding 1/4 lbs. lime to one cubic yard of peat."

It is advisable to run the peat through a 1/4 " mesh screen.

" In propagating from cuttings the factors which heretofore it has been most difficult to provide have been moisture control and a sterile medium in which to have the cuttings remain while the new roots are forming,for there are several fungus diseases which seem to be always ready to attack cuttings. Black rot or stem rot develops more rapidly when the surface must be watered frequently. For this reason geraniums or other plants especially susceptible to this trouble are often kept quite dry when being rooted in sand. This means that it takes them much longer to root. Even though as little as 1/4 or 1/3 peat moss is added to the sand more leaves may be left on the cuttings and rooting will take place rapidly, giving the disease less chance. Most of the ericaseous plants, such as azaleas,root best in pure peat moss."

A prominent rose grower,growing roses under glass,writes:

" We believe that the addition of peat moss to rose soil is of distinct advantage under our conditions. If a soil has a great deal of natural humus we probably would not find it as necessary. For our soil,which has both sand and clay in it,we like 15 % to 20 % by volume of peat thoroughly and evenly mixed with the soil before the soil is put into the beds."

Holly,long considered difficult to propagate by cuttings,roots readily in peat moss.

The Coolidge Rare Plant Gardens of Pasadena has established a reputation for azaleas grown in pure peat moss. The May Company roof garden of Los Angeles and the Emporium roof garden of San Francisco heal their plants and shrubs into peat moss. When a plant or shrub is sold it is lifted out of the peat moss, which clings to the roots in such quantities that the plant does not wilt before or after planting.

The greenhouse keeper or nurseryman who does not use German peat moss is failing to take advantage of one of the greatest contributions to his success which nature has provided.

On the use of PEAT MOULD

in

Forest Tree Nursery.

Report of Mr. SPRENGEL, Prussian States " Oberförster ", KLOSTERFÖRSTEREI, GOSLAR.

It is difficult to get organic manure for the raising of forest trees, and which is necessary for opening up the soil of the Nursery, because only in very exceptional cases are Farmers prepared to sell their manure. Green manuring requires a considerable increase of available area, and tends to increase costs. In many cases therefore, tree Nurseries suffer from caking of the top-soil, which cracks after short dry periods.

Peat Mould has been proved to be the best means of improving the physical condition of heavy soils, and for a succession of years has done good service as a substitute for stable manure,. besides which, it possesses special advantages. The beds after being limed and treated with the requisite quantity of commercial fertiliser, are mulched with Peat Mould, using about three bales per 100 square metres, after which very little cultivation is necessary. The mulch delays the loss of winter moisture, the soil remains looser and stays in a satisfactory condition for longer periods of dryness.

Whilst, during the few weeks the weeds are kept down by hoeing the crop remains compact, the clearing of the spaces between the plants opens such spaces up to all the local weed flora, and considerable expense is entailed for treatment with rake and hoe. Furthermore, however carefully this is done, plant life(especially perennial) remains, and soon re-establishes itself in the worked area. In very wet weather too, when work is not possible, the weeds grow apace, and it is an expensive matter to overcome this trouble. It is a case of constantly beginning over again, to get rid of the weeds which concentrate on those areas which have been cleared at much expense and trouble.

Areas mulched with peat mould offer weed seeds difficult conditions for germination and growth. In the Spring, before mulching, existing weed can be removed without much trouble. If some weeds remain and lateron break through the mulch of peat mould, it is an easy matter to pull them out, complete with roots. Beds impermeated with couch on which all attempts to clear had been unsuccessful, can be easily cleaned up with the rake about two months after mulching. The cost of cultivation will be reduced to the minimum, as so much less labour will be necessary. The beds are much better to walk on in wet weather too, but care must be taken not to disturb the mulch, any breaks in it being filled up as they are made.

Autumn seedlings can only be brought through the Winter without great loss, if they are mulched with some insulating material to protect them against the freezing of the soil at the begin-

ing of Winter and its ultimate thawing out. The months of February and March with their daily temperature fluctuations are particularly dangerous on account of the alternate freezing and thawing of the soil. In February 1932 this happened 20 times, and 12 times in the same month of 1933. Each such change is a levy on the strengt of the plants. Even slight variations are sufficient to do harm to Autumn seedlings. Against this danger, which threatens all species of trees alike, a mulch of peat mould is a safe protection, because of its considerable insulating properties. Trials with leaf- and pine needle-mould, of which there are supplies in the neighbourhood of the Nursery, have not been satisfactory. Leaf-mould in particular, led to prejudicial soddenness. Digging, transporting and application were expensive. It was also noted that so many weeds were brought in with this material that complete clearing of the beds was necessary in the Spring. Thus during the Summer months the beds lie empty.

Experience has shown that unmulched Conifer Nurseries suffer badly from the larvae of Otorrhynchus niger, which in some cases have practically eliminated half the crop. If the above mentioned mulching is not removed too early in the Spring, it prevents the entry of the beetles.

The safeguard seems to be similar in the case of the larvae of the May-bug or Cockchafer. Observations on this point however are incomplete on account of the different life-history of the May-bug. It is safe to assume however that it is the case.

The mulching calls for a single expenditure of about three bales of peat mould per 100 sqare metres. It immediately loosens the soil and keeps it continually in good condition. By its adverse effect on weeds it reduces cost of cultivation to a trifling figure. It is a safeguard against frost and against the effects of heat. In many cases it decreases the risk from insect pests.

When the beds are cleared, the mulch should be dug in, in order to improve the condition of the soil.

No harmful consequences are to be feard, but it is advisable to mulch early, before the evaporation of the Winter moisture.

TREATING FULLY GROWN TREES WITH PEAT MOULD.

When a general set-back occurred in a citrus orchard in California, careful investigation showed that this was caused by deficiency of humus in the soil, which had become unable properly to support the trees.

In order to save the orchard, the owners decided to treat the soil with Peat Mould. It was of course essential to get the Peat Mould right into the rooting area, but to do so with as little interference as possible with the well-being of the trees. The operation was therefore spread over a period of four years, the treatment being applied to one quarter of the area round every tree in each of four successive years.

In each quarter section the soil was removed so as to expose the root system, and a mixture of peat mould and good soil, about half and half, was packed in as closely as possible between and round the roots, in such a way that as the roots developed, they were sure to find soil with a rich addition of peat humus. A fertilizer was added when preparing the mixture and the latter well damped after application. Advantage was taken of this exposure of the root system to cut away any roots showing signs of decay.

In this way it took four years entirely to renew and improve the soil round each tree and its roots, and this was done without any damage or harm to the trees.

The effect was immediate, and the whole orchard which had seemed doomed, was saved by a single and simple application of Peat Mould. It regained its former vigour and health,- and at comparatively small cost to its owners.

WHY SOME ORCHARDS FAIL

On your trips through the country have you seen orchards - both citrus and other kinds - whose leaves are small and inclined to curl, and not the right shade of green, and whose fruit is not nearly what could be hoped for ? These are not necessarily neglected orchards. Cover crops may be growing on them and plowed under regularly, and they may be given all the other attention which is ordinarily supposed to produce the best fruit. What is wrong ?

Most orchards and vineyards are planted in mineral soil. Mineral soil is seldom, if ever, in good physical condition unless it contains a large amount of vegetable matter at a favourable stage of decomposition. Usually such soil is made fairly workable when the tree is planted, by blasting or otherwise, but in a very few years the soil runs together again. The roots are unable to reach out any further, unable to gather moisture or plant food, the tree is root-bound.

Thoroughly loosening a hard soil which is plentifully supplied with plant food will cause trees to thrive in it for a while, provided other cultural conditions are right. But soil which was heavy at one time will soon become so again, regardless of loosening, unless it is kept in proper physical condition by the use of organic matter. We know of a citrus orchard where a hole was blasted for each tree and they grew beautifully for a few years. Then the soil around the roots became hard again and growth stopped. Organic matter plowed into the surface will not correct that condition even though it acts as a mulch to hold the moisture and give it up slowly. But we know of some other citrus trees where German peat moss was thoroughly mixed with the soil at the time of planting. Those trees have large, dark-green, wide-spread leaves, with beautifully developed fruit, because German peat moss is the most permanent organic matter known and those trees cannot become root bound for many years to come.

Here is what the greatest tree experts in the United States do when they are called to treat a citrus tree that is not thriving. They drill under the root-ball from two sides, put two light charges of dynamite into these holes and explode them and then force compressed air which has passed through loose German peat moss into each hole until all the openings created by the explosions are filled with loose peat moss. Then they go away with confidence that Nature and German peat moss will do the rest. Heroic method ? Yes, and made necessary by the fact that no permanent organic matter was used when the tree was planted.

The time is not far distant when German moss will be considered insurance against failure when planting an orchard or a vineyard. Be sure it is put down where the roots can get into it.

CARE OF ROADSIDE TREES

Most trees will grow best under the same conditions of loose, moisture-holding, fertile soil which the majority of other plants require. But roadside trees, and trees in reforested areas are frequently expected to withstand the shock of transplanting and thrive thereafter in soil which offers little encouragement. The result is usually a long period of restricted growth with a large percentage of failures. During the years in which the tree is attempting to reestablish itself, there is liable to be considerable expenditures of time and money in an effort to assist in overcoming its handicap. By starting with reasonable soil conditions, these difficulties may be avoided.

The soil in which roadside trees are planted must be largely what is found where the tree should stand. It may be clay, gravel, adobe or sand, but Nature has decreed that it must contain a plentiful supply of organic matter if the tree is to thrive, and that is the substance most likely to be lacking. Stable manure will not do. Cover crops are impossible. A permanent organic matter is absolutely essential for lasting results.

German peat moss is the most permanent organic matter for horticultural use known. Thoroughly mixed with any kind of soil which does not contain substances detrimental to plant life, it will almost immediately produce a physical soil condition most favorable to the growth of trees. It will give newly planted trees a prompt and vigorous start, will retain moisture so that the need of frequent watering will be reduced or eliminated, will persist in the soil and perform its function for many years, and will add to the beauty and permanence of roadside foliage. Even though there may be other organic matter in the soil, it cannot possibly have the permanence of German peat moss so its cost will be saved and justified many times over.

Any amount of German peat moss mixed with the soil around the roots of newly planted trees will help. If the physical soil condition is bad, it will be advisable to use 25 to 50 percent peat moss. Using it only around the roots will give the tree a quick start, extending its use as far as the roots will eventually reach will keep the soil in excellent condition so that the feeding roots will not be hampered in further growth. A thorough mixture of the peat moss with the soil is very important.

HOW TO BUILD A NEW LAWN.

If the drainage is not good it should be make so.

Spade the ground to a depth of 8 or 10 inches, turning old sod down flat and removing succulent roots that might grow again. If the sod contains too much objectionable growth and the top soil is deep enough it is advisable to skim off the sod and lay it aside, remove and lay aside the soil one spade depth under the sod, place the sod in the trench upside down, and replace the soil over the sod. This retains all the humus contained in the sod.

Pulverize the lumps and remove all ofjectionable surface material. On a small lawn no other tools will give such good results as a wheel plow and a wheel cultivator. Go over the ground repeatedly until you have a good tilth.

Secure the desired grade by raking, rolling, and shoverling or filling in the low places.

Pulverize German peat moss off the ground and spread it evenly over the surface, using one bale or more to 200square feet if the soil is very bad. Mix the peat moss thoroughly with the soil from the top down to a depth of four inches. No tools are better for this purpose than a wheel hoe and a wheel cultivator. A thorough mixture from the top down is very important.

Spread evenly about 5 lbs. of good lawn fertilizer to 100 square feet and rake it in with the upper inch of soil. An even distribution prevents a spotted appearance of the grass. Soak the surface thoroughly or let a rain intervene. If it seemsadvisable rake the ground again to loosen the surface.

Mark the suface off in squares and sow one pound best lawn mixture to 200 square feet if blue-grass seed predominates. If bent seed predominates, or if bent alone is used, less seed should be sown. It is a mistake to use too much. Seed can best be sown evenly by mixing a measured amount of seed with a measured amount of sand and sowing each square from three directions.

Roll the ground and keep it constantly moist until the seed is thoroughly germinated by using a light misty spray on a hand hose. If the weather is bright and windly moistening three times each day will be advisable.

Raise the lower knife on your mower so it will not cut closer than one inch and begin to mow your lawn as soon as there is anything to cut. Leave the clippings on the lawn if it is cut when it should be. One half inch cut from the tips of grass plants and left on the lawn will make the plants more sturdy and will help to create a mulch. A longer cutting will weaken the plants both in the cutting and by smothering the plants.

Seed a new lawn in the fall to take advantage of the rainy season. Don't let weeds or objectionable grasses get a start - pick them out frequently.

A lawn started in this way and cared for later as per our instructions for an established lawn should remain beautiful indefinitely at less expense than it costs to maintain a poor lawn.

HOW TO FERTILIZE AN ESTABLISHED LAWN

Food is just as essential to a plant as it is to an animal. A lawn which receives no attention except mowing and watering will not thrive indefinitely.

The food of a plant consists of a considerable number of different elements, and if we are to have proper growth all of these elements must be available so the plant can absorb them in the best proportion. Different plants require different proportions of certain plant-food elements. One element produces leaf-growth, another supports the stalk, another effects the growth of flowers and fruit, etc. Plants will usually select the proper proportion of plant-food elements if a sufficient quantity is available, but this is not invariably true. An excess of nitrogen, for instance, will produce excessive leaf-growth at the expense of flowers or fruit, which would not be good in the case of certain plants. The presence of an excessive amount of one plant-food element will not off-set a shortage of some other element - results will be limited in proportion of the element that is lacking.

Soil may be in excellent physical condition for the growth of plants and yet be lacking in available plant-food. Water is essential to the growth of plants, but water and infertile soil can accomplish little. The cure for infertile soil is to supply the necessary elements so they can be used in proper proportion.

The plant-food elements most likely to be lacking in infertile soil are nitrogen, phosphorus and potash. A good lawn fertilizer is always strong in nitrogen and contains varying proportions of the other two elements. For lawn use a mixture of organic fertilizers has much to recommend it. Blood-meal, bone-meals and fish-meal are organic fertilizers and a mixture of these is an excellent lawn fertilizer. Sulphate of ammonia and muriate of potash are representative of chemical fertilizers. Super.phosphate is a natural ground-rock fertilizer, acid treated to make it soluable in water. All these latter items are frequently used by fertilizer manufacturers in producing a well proportioned mixture, and no mistake is made in using such a mixture produced by a reliable company.

On an established lawn spread two pounds of such fertilizer evenly over each 100 square feet, at least twice each year, when the grass is dry. This may profitably be done at any season except directly before extreme weather in cold climates. If the fertilizer is not evenly distributed the grass will show an uneven growth and uneven color. If the fertilizer is applied when the grass leaves are wet the grass will be burnt. Immediately after applying the fertilizer wash it off the leaves thoroughly with a misty spray on a hand hose, or a stationary sprinkler, and soak the ground thoroughly. In four days your lawn will be greatly improved.

If you would give your lawn the best possible advantage spread evenly one bale German peat moss to each 800 square feet before spreading the fertilizer - then apply the fertilizer over the peat moss and proceed as recommended above. Peat moss will absorb and hold the fertilizer until the grass can use it.

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CARE OF ESTABLISHED LAWNS.

Nearly all lawns are expected to thrive during many years with no attention except possibly watering and mowing. When it is remembered that few lawns were properly built roiginally, and that even the simple operations of watering and mowing are usually improperly done, it is little wonder that most lawns are about as unsatisfactory as they could be.

No surface care that can be given a lawn will take the place of proper construction underneath, but carful surface attention is advisable in any case.

Any established lawn that is worthy of care should have regular attention along the following lines -- mowing, watering, mulching, fertilizing, weeding. If any one of these operations is neglected or improperly done your lawn will deteriorate and will probably need to be done over eventually in order to make it satisfactory. These are requisites which any lawn should have if it is to be presentable. To these should be added special attention under certain conditions, such as liming a blue-grass lawn in case of extreme acidity, or acidifying a bent lawn if necessary, or treating a lawn for grubs, worms, ants, or other pests if it becomes infected. These latter operations should be resorted to only as emergencies-- not as regular practice. Liming a blue-grass lawn, for instance, should be resorted to only if an actual test shows a strongly acid condition -- not otherwise. Don't get the liming habit, which leads some lawn keepers to lime their lawns each year.

Lawns are subjected ordinarily to extremely trying conditions, yet undoubtedly no plants are given less sensible attention than lawn grass. It is cut to an abnormal length, and tramped, and starved, and even mistreated under the guise of supposed care; and then when it does not thrive we are convinced that a beautiful lawn is beyond the reach of average ability. We tell you that no other line of off-time endeavour will pay such big dividends in satisfaction as a lawn if our efforts are sensibly employed.

MOWING A LAWN.

The nature of some grass plants is to grow, blossom, produce seed and die. If we prevent maturity by keeping these plants constantly cut to a reasonable height the strength which would have gone into stalk and flowers and seed will be expended in sending out extra shoots near the surface of the ground. The mat of grass thickens -- "stools out" as we say. Blue grass is a good example of this and, because it persists year after year and has a fine, spear-like leaf, it is considered a good lawn grass. Some grasses which are otherwise similar will die out after a year or two. Red-top is a sample. It is sown with blue-grass because it germinates quickly and forms a protection for the more tender blue-grass until the blue-grasses well started. Other lawn grasses produce a close mat by sending out runners along the surface of the ground. For this reason creeping bent is used on golf-greens -- its naturepermits it to be cut very closely. Grasses sometimes improperly used in lawns naturally grow in clumps which make a lawn uneven. Timothy is a sample. Timothy seed is cheap, and unsrupulous dealers use it in lawn grass mixtures which return them a big profit. To avoid this buy your seed from a reliable dealer.

It is probably a wise provision of Nature that the grasses which present the most beautiful appearance in a lawn are those which thrive luxuriantly and persist indefinitely when closely cut. Frequent and regular cutting of lawn grasses causes the hearts of the plants to grow close to the ground. If the grass is allowed to grow longer and then is severely cut back the heart is cut out of the plants, leaving little expect the roots from which any new growth can come, and the lawn is correspondingly damaged. If lawn grass is allowed to grow so long before cutting that the clippings leave a swath over the lawn the clippings must be removed or the lawn will be damaged. If not more than 1/2 inch is cut from the tips of the grass at each cutting the clippings should be left on the lawn where they will form a valuable mulch.

If you would have a beautiful lawn mow it when it needs mowing. If you wait even one day beyond the time when good judgment tells you it should be cut your lawn will suffer to that extent. Do not mow your lawn too closely -- raise the lower knife so the grass will not be cut closer than one inch or even a little longer.

Grass plants thrive best when they have a constantly proper soil condition -- not soggy wet today and dry tomorrow. German peat moss in the soil retains the necessary moisture but permits proper drainage -- an ideal soil condition.

WATERING A LAWN.

It is said that from 65 to 95% of the substance of a plant is water. In addition water is necessary to plants because they can only make use of food which has been dissolved in water. A plant wilts when the roots cannot absorb sufficient moisture to replace evaporation through the leaves and, even though there may be available plant-food in the soil, growth will stop if there is not sufficient moisture to dissolve it.

Water enters a plant through the root hairs, so water which does not reach the roots is of little value. Growing plants are constantly forming new feeding roots and these roots naturally grow toward the moisture. If the moisture is at the surface of the ground it is quickly evaporated and the roots will be burnt by the sun. If the moisture is deeper it is more permanent and the roots are protected. Your lawn should be watered, then, so the roots will grow downward into cool moist earth, rather than on the suface where they will be burnt when the surface moisture is evaporated.

Watering a lawn with a hand hose seldom moistens the earth down to the feeding roots, and the force of the water is quite likely to uncover the roots so they will be burnt by the sun.

Use a stationary sprinkler always to water an established lawn. These are the advantagesof this method:

Soaks the ground thoroughly.
Distributes the water evenly.
The water falls softly and is absorbed as it falls.
Does not wash the humus off the roots.

Leave the sprinkler in one spot until the ground is soaked below the limit of the roots and then move it to another spot. Don't water your lawn again until the appearance of the grass shows it is needed. Keeping your lawn constantly soaked is not good practice.

A mulch of German peat moss on your lawn will not generate moisture but it will make the greatest possible use of the water which you apply. It will help to maintain a constancy of moisture without a soggy condition. No other substance known will assist you with your lawn efforts in so many ways as German peat moss.

MULCHING A LAWN.

Vegetable organic matter should be used as a mulch on all lawns. If a sufficient quantity of organic matter was mixed with the soil when the lawn was built more should be used as a mulch to maintain the supply. If none was used in the soil, and there is no intention of rebuilding the lawn, vegetable organic matter should be regularly used as a mulch in order to build up a favorable medium on top of the unfavorable soil.

Sand and loam may profitably be used with the organic matter as a mulch in the proportion of 1/3 of each, provided good material can be obtained, but it should be remembered that good loam is hard to find and poor loam is worse than useless. If organic matter and sand and loam are used they should be thoroughly mixed and sifted through a 1/8 inch screem. If soft loam is not obtainable 2/3 organic matter and 1/3 sand may be used. But the one absolutely essential item of a mulch is organic matter, and you will make no mistake if you use nothing else.

A lawn mulch should be very thin, not enough to smother the grass, just enough to settle between the plants -- to keep the roots cool and moist, and to gradually build up a soil plentifully supplied with organic matter.

No other form of vegetable organic matter is equal to German peat moss as a mulch. It is the purest soil organic matter known -- almost 100% pure. It will hold more moisture than any other known form of vegetable organic matter -- from 10 to 15 times its own weight in moisture. And it is well known that German peat moss will continue to perform its many useful functions in the soil many years after ordinary forms of soil organic matter have entirely disappeared.

A bale of German peat moss used as a mulch will cover 800 square feet -- or more if other material is mixed with it. Spread it evenly over the grass and immediately after it has been applied use a stationary sprinkler to settle it thoroughly between the grass plants. Use it not less than twice each year. (The best golf greens are sometimes mulched once a month.) Use it anytime of the year you wish -- spring and fall is good.

Using a mulch on your lawn will not take the place of watering in dry weather, but it will make the most of the water which you apply. And as you continue to build up an organic soil the amount of water required will be reduced so that, before long, your lawn should remain as green as spring-time the year around, while your water bill is cut in two.

REMARKABLE RESULTS WITH GERMAN GRANULATED MOSS PEAT IN TOMATO-CULTIVATIONS.

By Mr. W. Hagedorn, Koah, North Queensland, Australia.

Several tomato beds were treated with granulated German mosspeat, while others were treated in the customary way with fertilizers only. Tomato seedlings were planted at the same time in sections which were treated with moss peat and in others without such treatment. Naturally, in all those sections where moss peat was used in the soil, fertilizers were also employed when the tomato-seedlings were planted and, in addition, the soil around the seedlings was covered with moss peat.

While during the first month the seedlings on both sections grew equally well, a little later the plants on those beds which were not treated with moss peat began to show signs of decay. The leaves lost their dark-green color and the plants lost blossoms as well as the fruits just forming. On the other hand, the cultivations treated with the moss peat were a picture of perfect health, blossoms abounded, the plants were full of small fruit and the leaves of a wonderful, dark-green color.

At first the cause for this difference in the development of the two sections could not be detected because no parasites were visible on any part of the plants above the soil. Consequently, it was evident that the cause for the wilting of the plants on the untreated section must be below the surface. On pulling out some of the plants it appeared that they were badly attacked by nemathodes (a kind of thread like worm) which had destroyed more than half of the root-system. Within 3-1/2 weeks the whole cultivation on the untreated section had fallen victim to the attacks of the above named enemy and all plants had died.

A close examination of the tomato-plants raised in the section treated with moss peat proved the following: in this section the nemathodes prevailed also and had attacked the root-system, but the destructive work of the nemathodes was not equal to the vigorous growth of the roots. The nemathodes were simply powerless; the more they tried to destroy the fine roots the more the roots developed, reaching far into the soil and finding nourishment. In spite of the numerous enemies the splendid growth of the plants continued. Above ground 60 to 80 large sized tomato-fruits matured, while below ground the attacks on the roots continued but without the slightest effect on the cultivations.

This practical experience proves the eminent value of a soil treatment with German moss peat in tomato-cultivations.

Other experiments were carried out with moss peat in seed-beds for raising seedlings of cabbage and tomatoes, and here the result was equally astonishing. While these seed-beds produced absolutely first-class, strong and healthy seedlings, those raised at the same time without moss peat proved a total failure. The experiances with the seedlings raised in moss peat were absolutely satisfactory. Never before have we seen such healthy plants with such a tremendous root-system. They stood the transplanting into the fields very well, there was no delay in their development and the loss was below 1%. In all 120,000 tomato-seedlings and 11,000 cabbage seedlings which were treated with moss peat were

transplanted, and all those seedlings have developed into big, sturdy plants now abounding with fruit. A tremendous crop is assured.

Although the price we obtain in this market for our tomatoes is below average, there is every indication that we shall reap a profit of £ 450 ($ 2,250.-) from the tomato cultivations and £ 400 ($ 2,000.--) from the cabbage fields. The money which we spent on purchasing the few bales of moss peat appeared high in the beginning, but was quite insignificant in view of the wonderful results achieved.

It pays well to employ the moss peat treatment in vegetable cultivations because success depends entirely on the strong healthy and robust state of the seedlings.

GERMAN PEAT MOSS AS A MULCH.

Using German Peat Moss as a mulch is next best when thoroughly mixing it with the soil is unnecessary or undesirable or impossible.

After your vegetable garden or agricultural land is well started cultivate the ground thoroughly and apply peat moss around the plants one or two inches if there is a fair amount of vegetable matter in the soil, or two to four inches if the soil is lifeless. Wet this down immediately after it is applied, using a stationary spray if possible. Your water bill will be greatly reduced and weeds will trouble you very little or not at all. At the end of the season work this Peat Moss in thoroughly with the soil and next year apply more in the same way. About one bale to 300 square feet will be heeded.

In your rose or shrubbery garden or around your hedge maintain a Peat Moss mulch constantly. If the soil is lifeless for want of vegetable matter work this mulch in occasionally down to the roots and apply more as a mulch. If the bushes do not thrive at the right season for transplanting remove them from the ground, mix Peat Moss thoroughly with the soil,reset the bushes and mulch them with Peat moss. This will give you such results as you have never dared to hope for. A Peat Moss mulch around your shrubbery will do away with the impoverished appearance of dry,lifeless,waterwashed dirt and will form the most beautiful imaginable background for the bushes.

Use a 1/2 inch mulch of Peat Moss over the grass on your lawn at least twice a year. If Peat Moss has been used in the soil when the lawn was built this mulch will maintain the supply so that it will probably be unnecessary at any time to dig up your lawn again. In any case such a mulch will cover the grass roots to keep the sum from burning them and will reduce your water bill. Don't expect a thin mulch used over the grass where the soil is lifeless for want of vegetable matter to perform a miracle. In such a case it will help but it can't accomplish what Peat Moss thoroughly mixed with the soil will do.

Peat Moss is not fertilizer. Fertilizer should be used with it if plant food is necessary.

German Peat Moss in the Soil.

The most important function of German Peat Moss is its improvement of the physical condition of the soil. Its other functions are largely the result of this. For instance, another important function is its water holding capacity and the fact that it permits proper drainage, but this is as largely due to the improved physical condition of the soil as it is to the sponge-like property of the Peat Moss. Isn't it apparent then that Peat Moss should be used in such a way that it will contribute as largely as possible to this most important function?

Adobe or clay or sand without vegetable matter is lifeless dirt and will remain so if Peat Moss is spread over the top of it. But if German Peat Moss is thoroughly mixed with such dirt in sufficient quantity the nature of the dirt is entirely changed so that it becomes at once a soft loam which, wet or dry, cannot harden again for many years. Please don't misunderstand us. You must use enough and you must mix it thoroughly with the soil from the top down. If you don't you will be disappointed.

To accomplish proper results proceed as follows: Spade the ground and pulverize the lumps. Pulverize German Peat Moss off the ground to be treated and spread it evenly over the spaded ground. You should use one bale for from 200 to 300 square feet depending on the condition of the soil. Now go back over the ground and fork the Peat Moss in, being very careful to mix it thoroughly from the top down. If you cover the Peat Moss with soil which contains no Peat Moss you will have accomplished very little. If you are building a new lawn work the Peat Moss in to a depth of 4 to 6 inches. For a vegetable garden put it in 6 to 8 inches. For a rose garden certainly 8 to 10 inches is none too deep.

The roots of plants in soil where German Peat Moss has been used will seek it and attach themselves to it, and thereafter it becomes a sponge feeding the roots moisture and plant food. No other substance known will promote root growth as will German Peat Moss, and the growth above the ground will be in proportion to the root system.

SOME FORMS OF ORGANIC MATTER

STABLE MANURE: Formerly this was the best known form of organic matter for soil use but now it is seldom available. It contains more or less fertility depending on its origin. It is valuable as a vegetable organic matter but it disappears quickly in the soil. It usually contains many weed seeds which will grow. Stable manure is more valuable on the farm where it may be applied over sod while fresh. Used in this way its content of soluble plant food leaches out and is used at once by the grass over which it was spread. Later both the grass-sod and the solid manure should be plowed under where it will decompose and become valuable soil humus. When stable manure cannot be used as above it should be composted indoors to prevent loss of soluble elements. This process necessitates working it over occasionally, and sometimes moistening, to partly decompose the fresh organic matter without burning, to kill the weed seeds, and to promote the growth of favorable bacteria. Rotted manure on the market has usually been exposed to the weather, thereby losing a large part of its value.

COVER CROPS: This form of organic matter is very valuable under field conditions because it is grown where it is needed. If the proper kind of plants is used it adds materally to soil fertility. Cover crops are not usually valuable to small home owners.

LEAF MOLD: As usually found, this is a very short-lived form of soil organic matter consisting of partly disintegrated leaves mixed with woody material, trash and sand. It is acid in reaction depending on the nature of the leaves from which it is formed. Ordinarily the plant-food content is negligible and the organic content is very low because of the presence of a large amount of foreign matter. It is not highly retentive of moisture.

BLACK PEAT: This is a name applied largely to humus formed from reeds,sedges,marsh grasses,etc. Much of it is strongly alkaline and has reached a stage of decomposition which renders it detrimental from a physical standpoint. Many valuable plants have been destroyed by its use. It appeals to some because it is black which has nothing to do with its usefulness.

GERMAN PEAT MOSS: This is the most durable and the most absorbent form of soil organic matter. It contains considerable plant food but much of this cannot be used by plants until the peat moss decomposes, so fertilizer should be used with it unless the soil contains a plentiful supply. German peat moss will retain more moisture than any other known kind of soil organic matter, thereby greatly reducing your water bill. It has other valuable functions which it will continue to perform for many years after being used in the soil. It contains no substance detrimental to plant life, no weed seeds,and no detrimental bacteria. It is free from fibrous and woody material and sand. By the use of German peat moss, a physical soil condition may be created practically over night which would require years to produce through the use of other kinds of soil organic matter, and the results from German peat moss are much more permanent.

THE PHYSICAL CONDITION OF SOIL

German peat moss is frequently not properly used because it is not understood.

Soil is the medium in which plants grow, just as air is the medium in which animals live, or water is the medium in which fish live. If air or water is pure, animals or fish thrive in their natural medium provided they have food and, in the case of the animals, drink. And, similar, if soil is in good physical condition and free from harmful substances, as acids or alkalis, plants thrive in this natural medium, provided they have proper food and moisture. It is evident then that such a physical condition of soil as will make that soil favorable to the growth of plants is a matter entirely separate from the question of plant food.

The best physical condition of soil is invariably the result of the incorporation of sufficient vegetable matter with broken down rock, which may be in any form from fine gravel to clay. Norparticular kind of vegetable matter is absolutely essential. Nature builds soil through the use of any kind of plant life which will grow in a particular location. This plant life grows and dies during centuries of time and eventually forms an excellent soil medium. A farmer, with a considerable acreage, sows cover crops of various kinds and plows them under and, after a period of some years produces a proper physical condition of the soil. The great advantage of German peat moss is that, when a sufficient amount is thoroughly mixed with ordinary dirt, it will produce a physical soil condition almost overnight such as Nature produces during centuries or a farmer produces over a period of several years.

Soil in proper physical condition is loose and workable, holds sufficient moisture yet permits thorough drainage, absorbs moisture readily, permits the free passage of air, permits plant roots to pass freely through it. The stickiest clay or the hardest adobe or sand may be transformed into the finest loam by the proper use of German peat moss. <u>But remember - use enough and mix it thoroughly with the soil from the top down.</u> Use plant food too if the soil is not fertile but don't confuse the need of vegetable matter with the need of fertilizer.

German peat moss is absolutely pure vegetable matter, containing no substance detrimental to plant life and no foreign matter. It will stand up longer in the soil and will hold more moisture than any other known form of vegetable matter.

HOW TO PREPARE SOIL FOR ROSES.

If the drainage is not good it should be made so.

Spade the ground to a depth of 10 or 12 inches. Pulverize the lumps. Spread peat moss over the pulverized soil to a depth of 4 inches. Apply organic fertilizer that is rich in nitrogen at the rate of 5 pounds to 100 square feet and then fork the peat moss and fertilizer thoroughly into the soil as deeply as the soil was spaded. Tankage, cotton seed meal and bone meal, one part of each and three parts tobacco fertilizer, make a good fertilizer mixture for this purpose. Bone meal and sheep manure are a good substitute if the above is not readily obtainable. All of these organic fertilizers except sheep manure are slowly available and results from their use should be apparent over a long period. After planting the bushes, cultivate the soil thoroughly and apply two inches of peat moss as a mulch around the bushes and wet it down immediately. This mulch will hold the moisture, prevent the growth of weeds and form the most beautiful possible background for your bushes. Its use will entirely eliminate the parched, impoverished appearance of caked, dry soil containing no vegetable matter.

Each spring additional plant food should be worked into the surface soil. If this destroys the surface mulch apply more. Liquid manure applied whenever the bushes do not appear satisfactorily thrifty but not late in the season, should show almost immediate results.

The above recommendation will provide the most excellent possible medium for the growth of roses on either heavy or sandy soil.

If this information comes during the summer to anyone having an unsatisfactory rose garden, cultivate and mulch it at once. This will help but will not give all the results hoped for. Then, at the proper season for transplanting roses, remove all the bushes, work peat moss and plant food into the soil thoroughly as recommended, and set your bushes again. Your bushes will respond beyond your wildest hopes.

Remember, please, that nothing will take the place of vegetable matter in the soil. Plant food in any quantity will not produce results in soil that is impoverished from want of vegetable matter, and German Peat Moss is unquestionably the best available form of this material.

FIVE IMPORTANT FUNCTIONS OF GERMAN PEAT MOSS

The most important item in good soil is undoubtedly vegetable matter. The most useful form of vegetable matter for soil use is German peat moss.

Nature never produced good soil without putting into it a large amount of vegetable matter. Disintegrated rock of any size from fine gravel to clay when mixed with a sufficient quantity of properly decomposed vegetable matter will form soil of excellent texture. No other known substance will replace vegetable matter for this purpose. Here are the five most important functions of German peat moss in building soil.

1. It corrects the physical condition. It will transform adobe or clay soil into the finest loam you have ever seen. It will bind together and add substarce to a sandy soil.
2. It holds the moisture, yet permits drainage to the proper extent. Moisture is essential, but a soggy soil condition is detrimental. German peat moss corrects both conditions.
3. It promotes root growth. The growth of a plant above the ground will be in proportion to its growth underground and no other substarce known will promote root growth as will German peat moss.
4. It promotes the growth of beneficial bacteria. Bacteria in the soil are absolutely essential to the proper growth of plant life. But there are many kinds of bacteria,and useful bacteria will only thrive under certain favorable conditions.They cannot thrive in dry,hard soil. If the soil is soggy beneficial bacteria are displaced by detrimental bacteria. German peat moss in the soil creates a condition favorable to bacteria which promote useful plant life.
5. It releases plant food. Soil contains plant food locked up in intricate compounds which in their natural state plants cannot make use of. These plant food elements are usually released through the action of acids produced by the decomposition of vegetable matter. German peat moss is not a plant food but by virtue of its action in the soil plant food is made available.

No Minutes should be written on this page. A separate half-sheet to be used if required.
