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Botany
of
Bermuda



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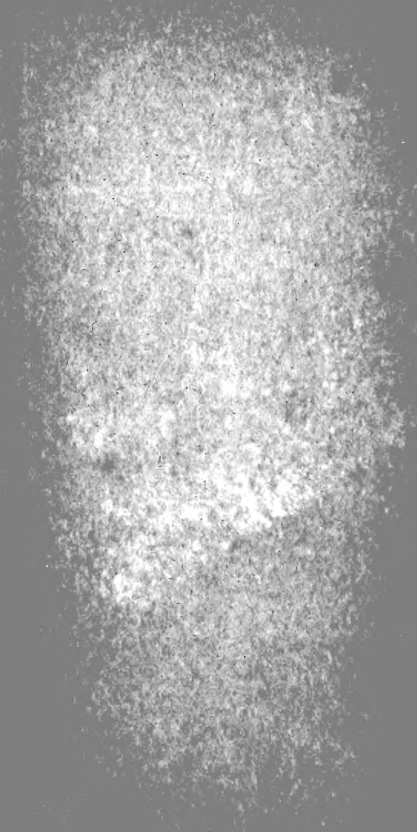
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Mrs. H. L. Britton

BOTANY OF
BERMUDA.

By H. B. SMALL.

AUTHOR OF

"FORESTS OF CANADA"; "ANIMALS OF
NORTH AMERICA"; "CHRONICLES
OF CANADA," ETC., ETC.

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BY H. B. SMALL,

Author of "Forests of Canada," "Animals
of North America," "Chronicles
of Canada," etc., etc.

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Hamilton, Bermuda,
22nd August, 1900.

DEAR SIR,—I beg to hand to you herewith for the Board of Agriculture, (gratuitously) if they see fit to accept, a work I have compiled on the Botany of Bermuda. It contains the results of two years observations, and is, I think, as accurate as a work of this nature can be. I have avoided as far as possible, the use of botanical terms, so as to make it comprehensible to every reader. Should the Board publish it I shall request a few copies for distribution among botanical friends out of Bermuda.

I have the honour to be,

Yours faithfully,

H. B. SMALL.

MR. BISHOP,
Sup't. Botanic Station,
Bermuda.

Botany of Bermuda.

To account for the origin of vegetable life on isolated islands far distant from any other land—islands such as Bermuda, St. Helena, St. Paul, Ascencion Island and others, is one of the great problems that the botanist has not yet solved in spite of all the theories put forward. Such a thing as a special creation, science does not acknowledge. The winds could not carry seeds to these distances so far from the mainland, and few, if any, could retain vitality in the ocean drift so far. Birds may carry undigested seeds that will germinate under favourable conditions, but the seeds of certain so-called indigenous plants could hardly have been thus transported. It must be borne in mind that the Bermudas are not in the line of the direct flight of bird migration, which lies far nearer to the mainland coast, and it is only under stress of weather or violent winds that flights of birds are driven on these shores, and even then only stragglers from the main body. The only theory that seems to be practical is that the Bermudas are the unsubmerged mountain peak retaining plant life enough to restock the new land as it gradually rose again

through submarine and volcanic upheaval, and that sparse as at first were the remnants of vegetable life left undestroyed, these as favourable conditions arose in the course of time again took up their old habitat, and as in the human race generation succeeds generation, so as time rolled on the herb-bearing seed after its kind re clothed barrenness. There are geological evidences in the caves of Bermuda that 800,000 years have rolled by in the formation of one stalagmite, which now lies in the Edinburgh museum, so that these islands may be a relic of the lost Atlantis, a theory by no means improbable, or that another Bermuda, the indications only of which are now left by what is known as North Rock and its reefs, lying north of the present islands, was that mountain peak, whilst the present land was subsequently raised long after the coral polyps had done its work of reconstruction on other submerged peaks.

The natural sandy and light soil of Bermuda is by no means conducive, from its elements, to growth, as is evidenced by the necessity for application of fertilizers to produce more than two or three crops. The hollows between the hills, where there is an accumulation of decayed vegetable matter, almost peaty in its composition, scarcely warrant the name of marshes, although closely approaching such formation. The washings of the hills clothed with the universal juniper, have for centuries contributed to the formation of humus or vegetable soil, but the absence of the ordinary deciduous trees of the north militates against the formation of leaf-mould which maintains northern soils.

The decaying coral rock, decomposed as it is by atmospheric action, contains no chemical elements as in other geological forma-

tions to add fertility to the soil and with the exception of bird life there are no animals to contribute to fertilization. Yet in spite of all these apparent drawbacks, there is a luxuriance of growth attributable to the moisture and warmth of the climate, and the remark has been made that if a branch was only stuck in the ground it would grow—a remark not far astray. Situated as Bermuda is, in the swirl of the Sargossa Sea there is seldom want of rain to add to the moisture, and although there are no fresh-water pools, streams, or even springs, existing, yet the rain drawn back to the sea through the permeative rock like a sponge is a constant provider of moisture to the roots of trees and plants alike.

Evolution is not to be ignored to a certain extent in the production of variety of species, but that evolution would produce a mulberry from a palmetto, or *vice versa*, is at once ridiculous, and yet both these trees were abundant on the Bermudas as the earliest records of wrecked discoverers of these islands prove, and to-day the number of species or even the existence of certain plants in the profuse vegetation so moist a climate favours, is probably not known. To ascertain and divide into different sections what are actually indigenous, what have gradually so spread in the course of time as to be next to indigenous, what have been accidentally introduced or brought in for ornamental purposes, and which have since spread over the soil, is a difficult undertaking. Those which have gradually crept out of cultivation, and which may be termed "escapes", having in their new condition assumed wild growth characteristics, can be traced, and one of the objects of these pages is so to classify the

known plants that they may be placed under one or other of the above categories.

It is a well known fact that as man pierces his way into the wilds certain plants follow his path, and often become a nuisance, and destructive of the native flora; one solitary seed perhaps dropped from his clothing, or shaken out of his baggage, takes to the soil and surroundings. Garden seeds also are apt to introduce some weed which, unnoticed in its growth, suddenly becomes abundant. This has been well evidenced in America and Australia, an example of which may be cited in the common thistle. The common plantain was unknown in America till the advent of the white man, and is called in the Indian language his "footsteps." A most striking evidence of the rapid propagation of a plant new to a country is that of the life-plant (*Bryophyllum*) familiarly known as "Floppers," which, originally a native of Asia, was introduced here as a garden curiosity, and which now covers every old stone wall, disused quarry, and uncultivated corner of the islands; a plant that may be styled seedless, but which nature amply provides for in the reproduction of its species by the leaflets at the crenature of the fleshy leaves when detached from the parent plant, one leaf alone thus producing a number of new young plants. The Oleander, again, a comparatively recent introduction from the shores of the Mediterranean, may now be said to fairly cover the island, contributing largely to its beauty, but attempts to destroy it or even to minimize its growth seem to give fresh vigour to its reproduction from the root and its seeds with their downy appendages take root wherever they fall.

Bermuda Botany may thus be recorded

under the head of *Indigenous*, or those plants actually natives, notably the Palmetto, the Juniper, and the Mulberry; *Semi-indigenous*, or those which have become so numerous as to form the chief flora of the island; *Weeds*, or plants introduced accidentally by man; and *Escapes*, or those which having escaped from gardens and cultivation have naturalized themselves and partly reverted to their original wild conditions, for all garden flowers were at one time wild in the country of their origin. Especially notable among these are the Purple Verbena, the Morning Glory and the Narcissus. There is probably no country in the world producing so great a variety of flora, the porosity of its rocks together with the humidity greatly promoting growth and vitality. Plants may frequently be seen clinging apparently to a bare coral wall and springing out of its soilless crevices, growth being mainly due to the moisture in the rock.

To the above classes may be added another class comprehending *specially imported trees* and plants, not taking into it, however, the generality of garden plants, but trees which from time to time have been brought in and which have taken with great vigour to their new home. Notable amongst these are the Pride of India, the Rubber Tree, Ailanthus and others.

Indigenous.

To enumerate with accuracy the actual indigenous plants is next to impossible, for although the early discoverers and settlers make mention in their records of certain trees and shrubs, no allusion is made to plants except in one instance where the scurvy grass is spoken of. The only means

left to judge of the vegetation existing when Bermuda was discovered is the analogy of other West India Islands and the mainland coast nearest to these islands. The following list is so made out:—

Juniper	Aster
Palmetto	Fleabane
Mulberry	Dogbush
Sea Shore Grape	Marigold
Olive	Scævola
Mangrove	Centaury
Buttereup	Solanum
Stinging Thistle	Salvia
Stock	Rosemary
Star of the Earth	Pigeon Berry
Pepper Grass	Vervain
Scurvy Grass	Capeweed
Marsh Mallow	Sagebush
Burr Bush	Snuff Plant
St. Andrew's Cross	Bindweed
Creeping Sorel	Seaside Lavender
Bay Bean	Samphire
Eugenia	Euphorbia
Butterwood	Bayberry
Wild Passion Flower	Spanish Bayonet
Cactus	Aloe
Prickly Pear	Iris
Wild Fennel	Various Grasses
Rhacicallis	All the ferns, (with the
Bog Bush	exception of a culti-
Galium	vated maiden hair.)*

There is now a discussion respecting two ferns said to be found only in Bermuda.

Semi-Indigenous.

Of what may be styled the semi-indigenous plants or those which have been introduced from time to time and becoming widespread,

* Fungi of various species, including the edible mushroom.

have reverted to a wild state, or the seeds of which have been deposited by birds, the following is at the best but an incomplete list:—

Red Poppy	Pellitory
Fumitory	Pilea
Alyssum	Sponia
Silene	Wild Pepper
Cerastium	Paneratium
Sandwort	Aloe (garden)
Pearlwort	Cleome
Flax	Virginia Creeper
Hibiscus	Poison Ivy
Wire-weed	Acacia
Hypericum	Phaseolus
Balloon Vine	Sophora
Dodonea	Christmas Bush
Mullein	Desmanthus
Goatweed	Ludwigia
Herpestis	Datura
Maurandia	Spiranthus
Four O'clock	Poultry Grass
Pigweed	Cane Shot
Mercury	Rush
Croton	Heath

Variety of grasses, many of which may have originated from seed brought over in bales of hay or straw.

Weeds.

These have doubtless for the most part originated from seeds accidentally mixed up in imported seed packets, seeds mixed up in soft packing material, and sometimes clinging seeds which may have been attached to clothing, and which dropped off unperceived as the clothes were worn.

Wild Mustard (*Sinapis Nigra*)

Charlock (*Sinapis Arvensis*)

Peppergrass (*Lepidium Virginicum*)

Wild Geranium (*Geranium Caroliniensis*)

Nettle (*Urtica Urens*)
 Dock (*Rumex Obtusifolius*)
 Shepherds-purse (*Capsella*)
 Wild Radish (*Raphanus*)
 Chickweed (*Stellaria Media*)
 Black Pea (*Dolichos Sphoerospermus*)
 Clover (*Trifolium Pratense*)
 Melilot (*Melilotus officinatis*)
 Vetch (*Vicia Sativa*)
 Purslane (*Portulaca Oleracea*)
 Alexanders (*Smyrnum Olusatrum*)
 Burr-Parsley (*Caucalis Nodosa*)
 Shepherds Needle (*Bidens Leucanthus*)
 Groundsel (*Senecio Vulgaris*)
 English Plantain (*Plantago Major*)
 Ribwort (*Plantago Lanceolata*)
 Nama (?)
 Catnep (*Culaminta Nepeta*)
 Boerhavia (*Erecta*)
 Amaranthus (*Retroflexus*)
 Black Clover (*Medicago*)
 “ “ (*M. Denticulata*).

Escapes.

Scarlet Geranium	Tobacco
Nasturtium	Cape Gooseberry
Balsam	Verbena
Indigo	Justicia
Lotus	Mimulus
Evening Primrose	Speedwell
Night-blooming Cereus	Buckwheat
Field Madder	Spider Lily
Chicory	Lilies (generally)
Toad-Flax (<i>Linaria</i>)	

Specially Introduced.

Pride of India	Poinciana
Tamarisk	do. Pulcherrima
Galba	Almond
Tacoma	Peach
Orange	Fig

Lemon	West India Laurel
Loquat	Myrtle
Surinam Cherry	Elder
Pomegranate	Honeysuckle
Papaw	Tansy
Otaheite Walnut	Oleander
Bamboo	Brugmansia
Cane	Fiddlewood
Stonecrop	Calabash
House-leek	Bougainvillea
Laurestinus	Avocado Pear
Sweet Bay	Plane-tree
Castor Oil	Ailanthus
Tulip Tree	Magnolia
Negundo	Mahogany
Banyan	Rubber
Weeping Willow	Soursop
Cherimoyer	Custard Apple
Sugar Apple	Royal Palms
Burning Bush	Arrowroot
Cassava	Shell Plant

Indigenous.

Juniper or Bermuda Cedar (*Juniperus Bermudiensis*)—A large evergreen tree, the earliest discoverers of the islands mentioning it as covering them. The wood is durable, fragrant and admits of a high polish. It bears a purplish berry, size of a pea, from which the old residents prepare a conserve which has been found efficacious in colds and lung complaints. The male tree bears catkins which in spring scatter clouds of pollen over the female trees, fructifying their catkins and perfecting the berry. Many large trunks of this tree have been from time to time dredged up off Ireland Island, an evidence of the fact that what is now sea, was at one time dry land.

Palmetto (*Sabal Umbraculifera*)—A tree gen-

erally distributed over the islands, from eight to ten feet high with a stout cylindrical stem varying according to location. On rocky hills it is dwarfed while on marsh lands it is vigorous and attains twenty to thirty feet in height. It produces greenish-black berries, one-third of an inch in diameter. The blade of the leaf is smooth and fan shaped, about four feet long and rather more in width. It is mentioned by the earliest discoverers, and proved most useful to the early colonists in various ways.

Mulberry (*Morus rubra*)—This tree is mentioned by the first discoverers of these islands but the fruit seldom comes to anything. It is from twenty to twenty-five feet high, with dense foliage, the leaves being from five to eight inches long and three to five inches wide. Little attention has been paid to its cultivation until a few years ago when the breeding of silkworms was attempted by Dr. Smith, but the cocoons failing to mature here have been shipped largely to Italy and France for silk manufacture.

Seaside Grape (*Cocoloba Uvifera*) is a largely distributed tree, especially along the seashore, of sturdy growth, with large smooth and shining leaves three to six inches long, and about as wide. The fruit is in clusters exactly resembling that of the true grape, the berries when ripe being purplish, and the size of grapes. They however have an acrid and rough taste very different from true grapes. Its branches are widespreading and the flower is small, whitish and forming drooping racemes.

Olive (*Olea Europœa*)—Whether this tree is really indigenous is an open question, although one of the early shipwrecked marin-

ers mentions this tree as then growing on the islands. It is an evergreen tree ten to twenty feet high with oblong pointed leaves hoary beneath, giving in the wind a silvery appearance. Its flowers are whitish, but no notice has been taken of its fruit, and the tree has reverted to a wild condition.

Mangrove (Rhizophora Mangle)—An evergreen tree, continually throwing out from its branches rootlets which penetrate the mud or swamp soil, forming new trunks, and creating thereby dense thickets. It is frequently mixed with a bastard species (Avicennia Nitida) distinguishable from the true Mangrove by its dusty white appearance, the underside of its leaves being covered with a white pubescence.

The Buttercup (Ranunculus Parviflorus) with its yellow flower is too well known to need description. From its universality there is every reason to consider it as indigenous. It has two congeners—(R. repens) with long runners, and (R. Muricatus) more abundant in damp than in dry ground. Its stem is erect and stronger than the other species.

The Stinging Thistle (Argemone Mexicana) is doubtless indigenous. It grows everywhere, its yellow flowers making it very conspicuous. Its prickly leaves, spotted with white, half-clasp the stem, and the flower stalks grow out of the axils of the leaves.

The Stock (Matthiola Incana) growing along the seashore bears handsome purple flowers one to two inches. It is grown in gardens, but this plant is not an "escape", the wild plant itself being evidently a native, from which the garden varieties have been produced.

Star of the Earth (Senebiera Coronopus) with

small starlike leaves close to the ground, has a very minute white flower, and is conspicuous only from its leaves in its second year covering at times a foot or more of ground.

Pepper Grass (*Lepidium Virginicum*) grows everywhere, bearing small white flowers, only the twelfth of an inch in size. It is slightly hairy with a stem from one to two feet high.

Scurvy Grass (*Cakile Oequalis*) growing on seaside rocks and in sandy bays is mentioned by one of the early discoverers. It is a smooth fleshy plant, one to two feet high, with lilac flowers, half-an-inch wide. Reade, in his botany, expresses a doubt about this being the real scurvy grass (*cochleana officinalis*) and the question is still an open one. However, the scurvy dispelling properties of this plant have been tested and found effective.

The Marsh Mallow (*Althœa Officinalis*) with its showy rosecoloured blossoms is found principally in the Pembroke and Devonshire marshes. It is a stout, soft, downy plant, from two to three feet high. It forms one of the native remedies for coughs, boiled down to a conserve.

The Burr Bush (*Triumfetta Althœoides*) is a shrubby plant, three to four feet high, covered with down. Its flowers are yellow, quarter of an inch across, and its four-seeded pods are covered with hairy-hooked spines.

St. Andrew's Cross (*Ascyrum Hypericoides*) is a small branching shrub two to four feet high, with yellow flowers, growing mostly in marsh land. How its name originated is open to conjecture, but may have arisen from its defective petals, sometimes assuming a St. Andrew's Cross form.

Sorrel (*Oxalis Violacea*) is a stemless plant, its leaves and flower stalks rising from an underground bulb. Its flowers are violet coloured, and it is a most troublesome weed in cultivated ground. There are two other species of this plant (*O. Repens*) with yellow flowers, a common weed, and (*O. Dillenii*) peculiar to St. David's Island, bearing yellow blossoms. Another species (*O. Cernua*) is cultivated as a garden flower.

The Bay Bean (*Dolichos Roseus*) is a peculiar creeping plant on the seashore, with runners from six to ten feet long, bearing a purplish red flower. It is abundant everywhere on sandy beaches above high water mark, and is most luxuriant in the debris from storms.

Eugenia Monticola is found on Boaz Island, being an evergreen shrub four to five feet high, with smooth leathery leaves, and white flowers resembling the myrtle. It bears a small edible berry, not unlike that of its congener the Surinam cherry (*Eugenia Ugni*) which it closely resembles in growth.

Butterwood (*Conocarpus Procumbens*) is a prostrate, contorted shrub with knotted and thickly interwoven branches, frequenting the seashore rocks. It has small whitish yellow blossoms, and a congener of it, known as Button Wood, is common in the swamps and marshes (*C. Erectus*) where it assumes the character of an erect shrub or small tree.

The Wild Passion Flower (*Passi Flora Minima*) with long spreading creepers, is a most persistent weed with greenish-yellow flowers, half an inch in diameter, axillary, and in pairs. Common everywhere.

The Cactus, of which the Turks cap is perhaps the commonest representative, is abund-

ant everywhere. This species known as (*Melocactus Communis*) frequents stone gateways and pillars, and bears small crimson flowers. The night blooming *Cereus* (*C. Grandiflorus*) sends long rope-like stems up tree trunks, and unfolds at night, perhaps the most magnificent flower in the vegetable kingdom, eight inches in diameter, waxlike and fragrant, closing before daybreak. (*C. Triangularis*) and (*C. Coceinellifera*) on which latter the cochineal insects feed are common, and the whole Cactus family with their peculiar growth are always objects of attraction.

The Prickly Pear, (*Opuntia Vulgaris*) with its fleshy prickly leaves is closely allied to the Cactus. Its flowers are yellow, and are succeeded by an edible crimson fruit, which must however before eating be divested of its spiny and thorny coat. The fruit somewhat resembles the fig in taste.

Wild Fennel (*Foeniculum Vulgare*) very fetid in smell, is common everywhere along roadsides. Its feathery foliage closely resembles the cultivated species, throwing up an umbelliferous head of flowers, yellow in colour. It is easily mistaken for the true Fennel, but is too rank for use.

(*Rachicallis Rupestris*)—A low spiny shrub, from two to three feet high, is found on the barren hills of the south shore. Its flowers are yellow and insignificant.

Bedstraw (*Galium Hypocarpium*)—A trailing plant, with flowers, on slender jointed stalks, yellow in colour, and leaves four in a whorl. It prefers barren grounds. Another species (*G. Palustre*) with white flowers, is found in Pembroke Marsh.

Aster (botanical name undefined) does not

appear to correspond with any of the American species. It is a half shrubby plant, with white blossom, but does not in any way approach the size of its congeners in the North.

Fleabane (*Erigenon Canadense*) is a troublesome weed in cultivated ground, and abundant on roadsides. Flower white, resembling the Aster family. Four other species are common, viz: (*E. Pusillum*), a dwarf plant seldom six inches high; (*E. Bonaciensis*), hairy, and from three to four feet high; (*E. Annum*), similar in growth to the former, but with purplish flowers; and (*E. Jamaicensis*) six to eight inches high: flowers nodding before they expand, with purple rays and yellow disk. All these species are abundant.

Dogbush (*Baccharis Heterophylla*) — An erect bushy shrub, leaves leathery, smooth and shining, and dotted beneath with scales. Flower heads brownish white; common in marshes.

Marigold (*Borrchia Arborescens*) is an erect brittle plant three to four feet high, with fleshy leaves sometimes smooth and shining, sometimes covered with a silvery down. The flower is bright yellow, one and a half inches in diameter. Common on barren seaside rocks.

Scævola (*Plumieri*)—A straggling shrub with stout stems branching from the base, leaves fleshy, flowers white, followed by a black fruit, the size of a cherry with a dry sub-acid taste. It frequents sandy bays, and is very abundant near the Natural Arch.

The Centaury (*Erythroea Centaurium*) — Sometimes erroneously called “wild rice” to which it has no affinity, is a small inconspicuous plant, seldom more than six inches

high, with long, slender, rose-coloured blossoms found along waysides and on barren rocky hills, very common

Nightshade (*Solanum Aculeatissimum*)—A prickly shrub two to three feet high, with spreading branches armed with prickles. The flower is white followed by a very poisonous orange-coloured berry. It is found more in woods than in the open, but is not very common. Another species (*S. Nigrum*) Black nightshade, closely resembles the former, but its thorns are not so formidable. Its flower is white, followed by a small black berry of a poisonous quality. It is a common plant, frequenting waste places and old gardens

Cardinal Flower (*Salvia Coccinea*) is of a herbaceous nature with crenate leaves, hoary beneath, and produces a brilliant scarlet raceme of flowers. Its brilliant colour cannot fail to attract notice, and it is a common plant on dry banks, and waysides. It is esteemed in England as a showy garden flower, Reade, in his botany, mentions another species (*S. Serotina*) with a white flower, and similar in growth to the former, but although carefully looked for, I have failed to find it.

Rosemary (*Rosmarinus Officinalis*)—A fragrant leaved shrub, with hoary leaves and blue flowers. It grows with a stem one to two feet high, much branched. Although scattered over the island, it is most abundant on St. David's Island, especially on rocky hills.

Pigeon Berry (*Duranta Plumieri*)—A shrub from six to twelve feet high, with smooth, glossy leaves, and often pendant branches, is a favourite ornament in shrubberies and gardens, its waxlike yellow berries being very conspicuous. Its flowers, blue in colour, hang in long leafless racemes, gracefully

weighted with berries, the latter being poisonous. They are about the size of a large pea.

Vervain (*Stachytarpha Jamaicensis*) — An erect growing plant, one to two feet high, bearing blue flowers on numerous branchlets, leaves two to three inches long, common in waste places, amid stone heaps and roadsides. This plant is doubtless the originator of the verbena.

Cupeweed (*Lippia Nodiflora*) — A smooth prostrate plant, its trailing stems often rooting at the swollen joints, its flower heads purplish white, and very common as a creeping weed on neglected ground.

Sagebush (*Lantana Crocea*) — An erect, bushy shrub, very branching, stems angular, covered all the year with orange yellow blossoms, and a fragrant odour from both flower and leaf prevails when rubbed. This is a favourite hot house plant with florists, being a perpetual flowerer. It is found all along the stone walls and stony ridges of the islands. Another species, very common (*L. Odorata*) with small pale pink flowers and much smaller leaves than the former is used by old residents for cleaning cooking utensils, a few branches boiled in a vessel removing any taint or unpleasant smell.

Snuff-Plant (*Buddleja Americana*) — A drooping shrub six to ten feet high, much branched with woolly foliage, under surface white with woolly down. Flowers on a pendulous stem mostly yellow, sometimes with a bluish red tinge. It is not universally distributed, being only met with here and there. It is one of the most graceful shrubs on the islands.

Bindweed (*Polygonum Convolvulus*) — A twining vine found on waysides and waste ground,

a bad weed, with angular stems one to three feet long. Flowers greenish white.

Seaside Lavender (Suriana Maritima)—An erect, bushy shrub two to four feet high, with reddish branches, and leaves crowded, much resembling the garden lavender. Flowers small and yellow. Abundant on the rocky South Shore, especially near the Natural Arch. The natives use this plant medicinally and have great faith in its curative properties.

Samphire (Salicornia Ambigua)—A procumbent plant, creeping and rooting in the sand and among rocks chiefly on the South Shore, very fleshy and juicy, and is eaten with vinegar. Flowers very obscure and minute.

Spurge (Euphorbia Buxifolia) — A small milky-juiced plant, half shrubby, the juice very acrid. Leaves a milky green, with greenish white flower heads. Common on seashore. Another species (E. Maculata), prostrate with reddish green flower heads, is one of the commonest weeds. Another species, very alternative in appearance, known as Joseph's Coat, (E. Heterophylla) is remarkable for a deep red blotch surrounding the terminal cluster of flowers, they being of a reddish green. It grows from two to three feet high, with an erect stem and bright green leaves. The red blotch surrounding the flower heads is easily mistaken for a part of the flower itself.

Bayberry (Myrica Cerifera)—An erect bushy shrub three to four feet high, with rough, leafy branches, the leaves presenting a dry and withered appearance. Its flowers are brown catkins succeeded by berries in dense clusters, somewhat smaller than a pea, coated with white fragrant wax, which is used in America for making candles. It grows in

marshes, and is very abundant in the Devonshire marsh. It suffers from blight.

Spanish Bayonet (*Yucca Aloifolia*)—Stem cylindrical, woody; four to eight feet high, leaves spear-shaped and thickly clustered at the summit, terminating with a woody spine. Its flowers cluster sometimes a foot long, pure white with purple base; are very showy and handsome. It is a formidable plant with its dagger-like leaves turning every way.

Bermuda Iris (*Sisyrinchium Bermudianum*) with leaves from six to ten inches long, and flower clusters of three to six on slender stalks, is abundant everywhere in spring. The flowers are purplish blue, with a yellow eye, and are so abundant in some places as to give a blue appearance to the surrounding grass. The seed pod or capsule is remarkable for its size on so small a plant.

The above description of indigenous plants as far as traceable might have had more added to it, but there being no clue to warrant their insertion in this list, the writer has deemed it advisable to place them under other headings. The fact of some of the plants in this list being classed as indigenous is mainly by analogy, but great care has been taken with the present selection.

Semi-Indigenous.

Red Poppy (*Papaver Dubium*)—An erect plant, hairy, six to twelve inches high. Seed-pod oval and smooth. Bright scarlet flowers. Another species (*P. Somniferum*) is a weed in waste ground, as well as being cultivated for its medicinal properties, the petals macerated in syrup being used for chest affections. Its flowers are variable in tint, chiefly pale purple and pink.

Fumitory (*Fumaria Agraria*)—A slender, delicately foliaged plant, with intertwined or intermingled stems. Flowers pink-tipped with purple in loose racemes. Common along fences or the south side of walls. Another species (*F. Densiflora*) with pale purple flowers, dark at the tips, and with very delicate foliage almost resembling lace, is abundant in the same localities.

Alyssum [*A. Maritimum*—Slightly hairy, one to two feet high, with hoary leaves is found on roadsides near the sea, flowers small, white and sweetly odorous.

Silene [*S. Gallica*—A hairy, viscid plant, branched, one to two feet high, flowers white, petals fine, nearly entire and furnished with small scales. Found along the South Shore, but not very abundant.

Cerastium [*C. Viscosum*—A hairy plant, with erect branched stem four to six inches high. Flowers white.

Sandwort [*Arenaria Serpyllifolia*—Stem six inches high, branched and covered with soft recurved hairs. Flowers white, very minute. Found along old walls and roadsides.

Pearlwort, (*Sagina apetala*) grows in grass-like tufts. Stems numerous and wiry. Leaves very narrow, and flower stalks hair-like. Flowers greenish white. A roadside weed.

Flax [*Linum usitatissimum*—Stem eighteen inches, branched above, flowers purple and numerous. Found everywhere.

Hibiscus [*H. Mutabilis*—A shrub or small tree ten to fifteen feet high. Flower stalks long with large red blossoms, mostly seen in gardens or neglected waste grounds. One of the most showy shrubs on the island.

Wireweed [*Sida Carpinifolia*—A small shrub

with long wiry root. A very troublesome weed. Flowers half an inch, yellow.

St. John's Wort [*Hypericum Perforatum*] erect with stems two-edged. Flowers yellow. Rare, and only found on waste ground.

Balloon Vine [*Cardiospermum Halicacabum*]—A delicate climbing plant, bearing white flowers and solitary seeds inflated, bladder-like, and marked with a heart-shaped spot. Not very common.

Dodonea [*D. Burmanniana*] an erect branching shrub four to six feet high, leaves gummy, large with long flower stalks. When not in flower it closely resembles the oleander. Flowers green.

Mullein [*Verbascum Thapsus*]—Herb, with densely woolly thick leaves from two to four feet high. Flowers golden yellow along and close to the stalk. It is familiarly known as "Devil's Tobacco," and the leaves are smoked for asthma. Common.

Goatweed [*Capraria Biflora*]—A smooth leafy shrub, two to four feet high, branches tough, leaves fringed with hairs on the margin, flowers in pairs, white. Common.

Herpestis [*H. Monneira*]—A smooth prostrate creeping plant, abundant especially in damp soil. It forms such masses in its growth as to kill all other vegetation where it spreads. The flower is insignificant, white with purple throat, but very small head.

Maurandia [*M. Sempervirens*]—A smooth evergreen climber with long slender wiry stems. Leaves triangular, flowers pale purple, one inch long, climbs over hedges and thickets. Common along waysides.

Four O'clock [*Mirabilis Jalapa*]—A smooth plant with a tuberous root, with flowers in terminal clusters of six or eight, shortly

stalked. It opens at 4 p.m., and closes early next morning. Flowers red, varying to white, yellow, and white with red centre. Rare on waysides.

Pigweed [*Chenopodium Album*—An erect plant two to four feet high, leaves long, whitish, with powdery scales. Flower minute, green and mealy. Another species [*C. Murale*] with bright green leaves, and green mealy flowers, closely resembles the former but is only half its height. Both produce black shining seeds, in a berry. [*C. Anthelminticum*] *Wormseed* belongs to this family; is an erect leafy plant of a bright green colour and strong aromatic smell, two to three feet high. Flowers minute, yellowish green, clustered in whirls; seeds round, shining dark brown. Common, especially in neglected grounds.

Mercury [*Mercurialis Annua*]—An erect stem six to twelve inches high, slightly branched, leaves thin, rather shining and very green. Flowers green, terminating in a spike. Not common, and found mostly in deep shade or woods.

Croton [*C. Maritima*]—A small seashore shrub two to four feet high, with slender straggling branches, clothed with a woolly down. It frequents sandy bays. Flowers whitish. It is introduced into gardens as an ornamental shrub.

Pellitory [*Parietaria Debilis*]—A plant with woody stalk six to twelve inches high, dark green foliage, flowers greenish white, with red stigma. Grows on damp walls and rocky crevices. Another species [*P. ?*] is very similar in every respect except that its flowers are greenish with white anthers. Both species are generally distributed over the islands.

Pilea [P. *Microphylla*—A small moss-like plant with very minute pink flowers, stems spreading flat. Found on old walls near Salt Kettle. It is allied to the lace plant of the gardens.

Sponia [S. *Lamarkiana*—A rough shrub or small tree with spreading branches. Flowers small, white and inconspicuous. Found at Walsingham.

Wild Pepper [Piper *Obtusifolia*—A smooth fleshy prostrate plant, the flower ends standing erect. Leaves fleshy and shining, two to three inches long. Flower spikes green. Common near all caves.

Pancratium [P. *Maritima*—Leaves strap-shaped, smooth, leathery, eighteen inches long, flower stem shorter than leaves, flowers white, fragrant, four to six inches long. Common near Watford, and scattered here and there over the island.

Aloe [A. *Vulgaris*]—Scarcely any stem, throwing up suckers around it. Leaves one foot long, very thick and glutinous, curved upwards with spiny teeth. Flowers yellow, nodding. Common on sandy wastes, and cultivated in gardens.

Cleome [C. *Viscosa*—An erect plant twelve to eighteen inches high, covered densely with sticky glandular hairs. Flowers yellow and seed capsule three inches long, round and tapering. Seeds very numerous. Common in fields.

Virginia Creeper [Ampelopsis *Quinquefolia*]—A shrubby creeper, ascending walls, palings and old trees, to which it adheres by discs on the end of tendrils. Flowers small, pale green. One of the handsomest creepers, from the peculiarity of its leaves assuming a

bronze or crimson appearance when the summer heats are over.

Poison Ivy [*Rhus Toxicodendron*—A climbing vine, the stem attaching itself by means of ivy-like rootlets to trees, rocks and walls, rising to a considerable height. Flowers greenish yellow, small. The juice of this plant is irritating to the skin, and although not even of the same species as the American poison ivy, is yet very troublesome to some dispositions, whilst others can handle it without trouble.

Wild Acacia [*Lucæna Glauca*—A common shrub along waysides, with pinnate leaves, and flower in dense globular white heads. Seed pods following are from four to seven inches long, flat, compressed, twelve to twenty seeded. Seeds flat, polished, not unlike water melon seeds. Common on waysides everywhere, especially towards Spanish Point.

Phaseolus [*P. Semierectus*—A half shrubby plant, twining and ascending trees ten to twelve feet. Flowers purple, with stalks three to four inches long, terminating in flower raceme. Seed pod three inches long. Found in woods near Joyce's Caves. Rare.

Sophora [*S. Tomentosa*—A small prostrate shrub, clothed densely with soft hairs; stems branched and woody. Flower stalk or raceme hoary, one foot long, and carrying many blossoms. Flowers bright yellow.

Christmas Bush [*Cassia Bicapsularis*—An evergreen shrub, three to four feet high, with long weak trailing branches and smooth stems, leaves smooth, ten to twelve blossoms on the flower stalk, whitish brown, followed by a pod nearly cylindrical, four to six inches

long. Not very common, grows along hedges and old walls.

Desmanthus [D. Virgatus]—A slender shrub, four feet high, with twiggy smooth stems. Flowers white, followed by a pod two inches long, wide, flat, compressed and ten seeded. Rare—Hungry Bay, Somerset.

Ludwigia [L. Repens]—An aquatic plant, with brittle stems, rooting at joints. Leaves oval, one inch long, flowers green and yellow, found on marshes, spreading sometimes on to reclaimed land.

Thorn Apple [Datura Stramonium] — A branching plant, two to three feet high, green stem, leaves six to nine inches long, coarsely toothed, thorny at crenations. Flowers white, followed by an erect seed head, one to two inches long, covered with stout prickly spines, hence its name. It is of a poisonous character, but the leaves are occasionally smoked for lung affections. Waste places, and corners of cultivated ground seem best adapted for its growth. Another species [D. Tatula] with purple stem, and bluish white flowers is abundant. A garden species [D. Metel] with trumpet-shaped flowers six inches long, often confounded with a similar plant [Brugmansia Suaveolens] is very showy and attractive.

Spiranthis [S. Tortilis]—Slender erect stem, one to two feet high, leaves narrow, flowers white in one row, spirally twisted, ending in a terminal spike, two to three inches long. Found in Pembroke marshes. Not very common.

Poultry Grass [Commelina Agraria] — Smooth prostrate stems much branched and interwoven, several feet long, flowers bright blue, a most troublesome weed. Common throughout the islands.

Cane Shot [*Canna Coccinea*—Erect leafy plant, sturdy, three to five feet high; leaves long, sheathing the stem, with prominent veins along them. Flowers two inches long, red lip varied with yellow. Abundant in waste corners of fields and inside of stone walls.

Heath [*Russelia Juncea*—An almost leafless plant, with long rush-like jointed branches, and long scarlet tubular flowers, is abundant along old walls. It is not in any way a true heath, but like many other Bermuda plants, the appellation is a misnomer.

Weeds.

There is no reliable report or data respecting the arboreal or floral vegetation of these islands between the early records and the beginning of 1800.

Hemsley, whose report on the botany of the Bermudas in connection with the *Challenger* expedition is the best work of reference, says the botanical history of these islands really began in 1806 when Michaux visited them. Hemsley thinks the native plants may be put down at from 140 to 150, and that a parallel is offered on the eastern side of the Atlantic by the flora of the Azores. "Weeds and chance "species," he says, "brought here in seed "packages naturalize with facility, and perhaps few places of so limited an area offer a "greater variety or so much to gratify a botanical observer."

Wild Mustard (*Sinapis Nigra*)—Stem one to two feet high, with bright yellow flowers in long racemes. It is a most troublesome weed to get rid of, and like another species known as Charlock (*S. Arvensis*) is often so densely grown as to give a field a yellow appearance.

Pepper Grass (*Lepidium Virginicum*)—Stem one to two feet, slightly hairy, flowers small, white, leaves pungent to the taste. Grows on waysides and on cultivated land, and is very common.

Wild Geranium (*G. Carolinianum*) — A spreading plant, rather hairy, main stem becoming prostrate when mature. Leaves five-lobed almost to their base. Flowers, pale lilac and veined. Common on waste ground. The peculiarity of its seed vessel has given it the name of Cranesbill. It is said to be the origin of pelargoniums and geraniums.

Nettle (*Urtica Urens*)—A plant bristling all over with very irritating stings. Flowers green. Plant too well known to need description. Another species (*Stachys Arvensis*) Hedge Nettle, has no stinging property. Its flowers are purple, varied with white. Common. Still another species, the Dead Nettle (*Lamium Amplexicaule*) has very weak brittle stem almost transparent, flowers rosy, variegated with white, and a smaller similar plant (*L. Purpureum*) bears purple flowers.

Dock (*Rumex Obtusifolius*) — Stout stem, two to three feet high, leaves six to ten inches long and half as wide, red veined. Flowers green. Two other species: *R. Sanguineus*, reddish coloured leaves, and *R. Crispus* with curly leaves, are all common as wayside weeds.

Shepherds Purse (*Capsella Bursapastoris*)—Six to twelve inches high, leaves spreading on ground next the root, flowers small, white, followed by triangular seed pods. Blossom easily affected by weather, which has given it the sobriquet of "Poor Man's Weather Glass." Not very abundant, but specimens crop up here and there.

Wild Radish (*Raphanus Raphanistrum*)—

Very similar to the garden radish, with pale, yellow flowers; is not uncommon; grouped in patches by the way sides.

Chickweed (*Stellaria Media*)—A common weed in cultivated ground, is a densely grown, procumbent plant with small white flower. It is sought after for cage birds which delight in feeding on its leaves.

Black-eye Pea (*Dolichos Sphaerospermus*) is frequently met with in fields, where its twining stems, matted and interwoven, cover considerable space. Flowers variable, yellow or white, blotched with purple, followed by long, slender, and well seeded pods.

Red Clover—(*Trifolium Pratense*)—A prostrate plant, with long stems and three-lobed leaves. Flower-head like a small purplish ball. Grows in fields and waste places, but is not cultivated as in other countries for fodder.

Sweet Melilot (*M. Officinalis*)—A branched, erect plant, two feet high, with orange-yellow flowers; the whole plant very fragrant which has given it the name of Sweet Clover, its leaves being clover-shaped.

Vetch—(*Vicia Sativa*)—A climbing plant, akin to the pea, with slender stems and tendrils. Flowers purple. It is not cultivated, as it is elsewhere, for fodder. If grown to plough under, the nitrogenous nature of its roots greatly improves the soil.

Purslane (*Portulacca Oleracea*)—A prostrate plant with spreading, brittle and fleshy stems, pinkish. Flowers minute, yellow. Leaves sometimes used in salads. It is a very troublesome weed, growing very rapidly, and covering quite a space. Another species (*L. Portulacastrum*) is found on sandy bays, very common.

Alexanders (*Smyrniolum Olusatrum*)—A stout erect herb, two to three feet high, with a shining, angular and furrowed stem, not unlike celery, is found sparingly in waste ground. Flowers yellow, bearing seeds similar to coriander. It is cultivated for its medicinal properties, the root macerated in rum being used externally and internally for rheumatism.

Burr Parsley (*Caucalis Nodosa*)—A small herb six to eighteen inches high, rough all over with short granulated hairs, leaves dense, resembling the carrot. Flowers pinkish white, in dense subglose heads, common in waste places.

Shepherd's Needle (*Bidens Leucanthus*)—An erect, branching plant, stems four, angular, nearly smooth. Leaves serrate. Flowers yellowish, followed by barbed awns which adhere to clothing, and give evidence how seeds can be conveyed to distances from such conditions.

Groundsel (*Senecio Vulgaris*)—An erect weed, about one foot high with a fleshy stem. Flowers yellow, heads drooping, grows sparingly in waste ground, and is sought after like chickweed for caged song-birds.

Plantain (*Plantago Major*)—A plant almost sessile, with large leaves, not unlike a young dock, throwing up a slender whip-like spike terminating in a lengthened head, with inconspicuous greenish white flowers. In the northwest of Canada this plant was unknown until the country became settled, and it is to this day called by the Indians "whiteman's footsteps." Closely allied to it is the Ribwort (*P. Lanceolata*) with narrower leaves three to five ribbed, somewhat woolly. Flowers inconspicuous and found everywhere.

Catnep (*Calamintha Nepeta*)—A strong smelling downy, herb, one to two feet high, stems straggling and brittle, and flowers pale lilac. From its aroma it appears to be closely allied to mint. It is used as Catnep tea to induce perspiration when feverish, or suffering from colds.

Boerhavia (*B. Erecta*)—A nearly erect plant, two to three feet high, smooth stem, leafy below and spreading out above. Flower stalks thread-like, flowers minute, pale pink; a common weed in cultivated ground.

Amaranthus (*A. Retroflexus*)—A plant three to four feet high, reddish and grooved, leaves three to four inches. Spikes green, densely flowered. It is a tall, conspicuous weed, and not uncommon in cultivated ground.

Black Clover (*Medicago Lupulina*)—A procumbent plant, with slender branched stems, almost creeping. Clover leaved. Flowerheads yellow; common everywhere. Another species (*M. Denticulata*), closely resembles the former, except that the flowerhead is armed with two rows of spines, and flowers more orange than yellow. Both varieties are common and are often called Yellow Clover.

Escapes.

Scarlet Geranium—I have found this growing in old quarries, and field corners, flowering as profusely as in a garden. Slips or branches thrown away root readily anywhere under favourable conditions.

Nasturtium (*Tropæolum Majus*)—This plant I have found in several places far apart from any garden.

Balsam (*Impatiens Hortensis*)—This plant also is about equally distributed with the former.

Indigo (*Indigofera Anil*)—A small shrub, three feet high. Leaves accompanied with oblong spoon-shaped leaflets. Flowers small, purplish, followed by bow-shaped cylindrical pods, half an inch long, and four to six seeded. It is found in fields and waste ground, probably the remains of former cultivation.

Lotus (*Lotus Jacobæus*)—An erect evergreen plant, with slender, round, downy stems with three or four flowers collected at end of long stalks. Flowers reddish brown, followed by pods in branches of three or four with a bristle-like point. Is looked on as a weed, although frequently found as a garden flower.

Evening Primrose (*Oenothera Longiflora*)—An erect plant, covered with dense soft hairs. Flowers yellow and sweet scented; only open at night and close with the morning sun. Seed case is four-angled. Another species found at St. Davids and Tuckerstown (*O. Humifusa*) is half shrubby, leaves silvery, flowers one inch in diameter, orange yellow.

Night-blooming Cereus (*Cactus Grandiflorus*) affords after sunset one of the most magnificent flowers in the whole vegetable kingdom. Its long rope-like stems ascend trees and walls and attain quite a height. The flower, rose-pink white, invariably closes before day-break.

Field Madder (*Sherardia Arvensis*) is a prostrate hispid plant, with stems one foot long, leaves half an inch long, flowers pink, followed by dry seeds separating into twin divisions. Found at Salt Kettle.

Chicory (*Cichorium Intybus*)—Erect, rigid, tough, angular stem with bare spreading branches. Heads sessile, in pairs and florets

along stalk often twenty in number. The flowers are bright blue, very conspicuous, and the plant being ubiquitous cannot fail to be noticed. The root is used to mix with coffee.

Toad Flax (*Linaria Vulgaris*)—An upright plant, one to two feet high, slender, smooth and leafy stem with narrow leaves pointing upwards all the way up. Flowers very showy yellow, with deep orange palate, and a pointed spur hanging downwards. It is familiarly known as “yellow snapdragon,” and “eggs and bacon.”

Tobacco (*Nicotiana Tabacum*)—A plant four to six feet high with large leaves, rather downy. Flowers pink, two inches long. Its locality is around old ruins and occasional waysides, it being a remnant of what was at one time largely cultivated here. Of late years, however, no attention has been paid to it, probably in consequence of the moist atmosphere rendering the curing of it uncertain.

Cape Gooseberry (*Physalis Peruviana*)—Has all parts velvety, with long soft hairs, branches spreading, leaves heart shaped. Flowers yellow, with large purple spots at their base; followed by a berry the size of a small cherry enclosed in a ten-ribbed calyx. It is cultivated in gardens, but has escaped in various places into the open country.

Verbena—(*V. Chamædrifolia*)—With rough, rather wrinkled leaves, spreading over the turf, is only a few inches high, but is so abundant in patches as to give a universal colour to the spot where it grows. The purple flowering verbena is the most generally distributed, and though I am informed the pink and the white species have also escaped, I have failed to verify this.

Justicia (*J. Luridasanguinea*)—A shrubby plant, sturdy and densely clothed with good sized leaves, may be frequently seen on the edge of woods, on field corners especially in shady nooks. The flower is reddish white, and forms a head with very attractive appearance. The white and the reddish flowering species are abundant, a very large patch of both growing on the east side of the Hamilton exhibition grounds.

Mimulus (*M. Luteus*)—Known also as the Monkey Flower, is an occasional straggler from cultivation. Its growth varies according to locality, ranging from a few inches to one foot high. It may occasionally be seen on some old wall, or entrance pillars. The flowers are not unlike the Snapdragon, purplish red. It may be called rare in its escaped form.

Speedwell (*Veronica Agrestis*)—Stems prostrate and slender with slightly hairy leaves. Flowers small, pale blue, veined. The plant is very insignificant, growing in waste ground and as a weed in gardens. Another species (*V. Arvensis*) has erect stems four to eight inches long, with a pale blue flower only the eighth of an inch. It is very similar to the former, except in its erect growth. Another species (*V. Peregrina*) has an erect stem four to eight inches high, leaves more fleshy than the other species, flowers white, diminutive, and found mostly as a weed in cultivated ground, and in waste neglected places.

Buckwheat (*Polygonum Fagopyrum*)—An erect smooth plant two to three feet high, stem juicy, leaves arrow shaped, flowers numerous in short racemes of a pale rose colour, almost white, followed by an edible grain, greatly used in America. It grows in neg-

lected marshy fields in Pembroke, and is a relic of former cultivation.

Spider Lily (*Pancreatium Ovatum*)—Leaves oval, two feet long, and flower stem erect, two feet high. The flowers, white and delicate, with six slender segments and wavy margins, not unlike a huge white spider, attenuated in form, are very conspicuous. It grows wild around Somerset, and I have seen a few stray plants on the North Shore, and near Devonshire Bay.

Lilies Generally—It may be said that there is scarcely any species which has not escaped and established itself in outside localities. Thrown out with garden rubbish, they soon establish themselves and seem to flourish as well as in cultivated ground, if the locality suits them. If, however, the soil is poor, they soon dwindle down and pass what might be called a struggle for existence. From the many varieties of escaped lilies, a garden might be stocked with bulbs.

Escapes.

Wandering Jew (?)—A semi-prostrate trailing plant, throwing out numerous fleshy runners from the crown of the root, with axillary spurs bearing a small blue flower. Leaves glossy, merging occasionally into purple. Locality, Five Finger Point. Rare.

Specially Introduced.

Pride of India (*Melia Azedarach*)—A large tree thirty feet high or more, with dense green foliage, has been introduced as an ornamental street tree from the Mediterranean, and has now become common round country houses. Flowers lilac, followed by yellow berries which hang till spring. It is one of the few deciduous or leaf-shedding

trees of winter, when its bare stems and branches are by no means a thing of beauty. This however, is compensated for by its dense green cool-looking foliage during the hot months.

Tamarisk (*Tamarix Gallica*)—An evergreen tall shrub, eight to twelve feet high, peculiar for its slender and feathery branchlets, closely overlapping. Flowers are catkin like with minute pink blossom. This plant was introduced from the Mediterranean, and has been largely planted along the North Shore, as its foliage stands the sea spray without any ill effects, whilst oleanders adjoining are scalded and withered by spray. It is very graceful and forms a beautiful hedge.

Galba (*G. Calaba*)—A tree twenty to thirty feet high, branching from the ground upwards; leaves oblong, leathery and shining. Flowers white, fragrant, and followed by a small edible fleshy fruit. When trimmed young it forms a splendid hedge or wind-brake in fields. It was introduced here from the West Indies.

Tecoma (*T. Pentaphylla*)—A tree in appearance not unlike the *Galba*, is known generally as "White Cedars;" an entirely erroneous misnomer as it has nothing in common with the true cedar. It is a handsome, bold growing tree, with oblong, leathery, glossy leaves, and rosy white flowers. It is not generally distributed but several trees are on the Public Building grounds and on the principal streets.

Orange (*Citrus Aurantium*)—The Orange was formerly largely cultivated here, and Bermuda oranges were eagerly sought after. A destructive insect, however, some years ago, attacked the trees, and from its ravages for want of care and spraying, the trees have

reverted to almost a wild state, and field cultivation has unfortunately taken the place of fruit. Under the instructions, however, of Mr. Bishop, Superintendent of the new Experimental Gardens, who has bestowed especial care on orange cultivation, the island may look for a revival of fruit growing. The same remarks apply to the lemon, the shaddock and lime, all of which with care would do well.

Loquat (*Eriobotrya Japonica*)—A handsome evergreen tree, brought from Japan, from fifteen to twenty feet high, thrives well in sheltered situations, and is a handsome addition to any garden. Its white flowers, in spikes, resemble somewhat the English horsechestnut, and are followed by an edible yellow fruit, shaped like a plum.

Poinciana (*P. Regia*)—A handsome tree, twenty to thirty feet high, with very wide-spreading branches, often reaching nearly to the ground and with a smooth, gray bark closely resembling an elephant's trunk. Its leaves are feather-shaped, one foot, bearing twelve to eighteen pairs of small entire leaflets. Its flowers are yellow, striped with crimson, followed by a pod twelve to eighteen inches long. This tree was introduced from Madagascar, of which island it is a native. It may be considered one of the handsomest trees in Bermuda.

Barbadoes Flower Fence (*P. Pulcherrima*)—Though entirely unlike the former, belongs to the same family. It is an evergreen shrub, its branches armed with prickles, and when clipped and pruned forms excellent garden hedges. It is a profuse flowerer, its gay orange-red blossoms with peculiarly long

stamens and seedstalk (style) lasting continuously through the year.

Almond (*Amygdalus Communis*) — The *Apricot* (*Armenica Vulgaris*) and the *Peach* (*Amygdalus Persica*) were all at one time cultivated here, but seem to have been abandoned owing to disease. As in the case of the orange, attention may yet be given to their recultivation.

Fig (*Ficus Carica*)—This fruit has been neglected, and the trees allowed to revert to almost a wild state. They are subject to a fungus growth known as rust, but spraying must be freely used if fruit is desired.

India Rubber Tree (*Ficus Elastica*)—This tree is closely allied to the fig, but assumes such enormous and fantastic growth that it is an object of especial admiration. An enormous specimen is to be seen at "Par-la-Ville," at the foot of Queen Street, a tree, which from its huge spreading branches, at once attracts the attention of all visitors.

West India Laurel (*Prunus Occidentalis*)—With its evergreen, laurel-like leaves, spotted with white, forms a very handsome shrub. It is very ornamental.

Myrtle (*Myrtus Communis*) has evidently been introduced from the Mediterranean, and closely following on it is the Surinam Cherry (*Eugenia Ugni*) bearing a five-angled waxed red fruit, known here as cherries, but a very poor substitute for the real cherry that is grown all over England.

Pomegranate (*Punica Granatum*) one of the most delicious fruits grown, a very bright green foliaged plant with magnificent scarlet blossoms. Like all other kindred fruits, its cultivation has been neglected. The fruit has a dense leathery rind, and the pulp of

that fruit with its sub-acid and sweet taste is one of the most refreshing fruits that can be used in hot weather. It is an introduction from the Mediterranean.

Papaw (*Carica Papaya*). This is a peculiar unbranched tree ten to twenty-five feet high, naked stem up to summit, where leaves one to two feet in diameter, on long stalks present an appearance imitating the Palm. There are male and female trees, the female being covered near its summit with round orange-looking fruit, one above the other along the stem. This fruit has of late years attracted the attention of the medical profession for its peculiar pepsine qualities. It has the property of softening the fibre of meat in cooking, and is much used for that. It was introduced from the West Indies.

Walnut (*Otaheite*) (*Alewrites Triloba*) is to be seen in the Public Building grounds, and one tree is on the exhibition grounds. It is sometimes called butternut, but it has no similarity to the tree of that name common in Canada and America.

Bamboo (*Bambusa Arundinacea*) is a very graceful tree, especially when planted in clumps, its jointed stems rising thirty or forty feet and swaying about with every passing breeze. Its slender branches are not hollow like the main stem, but are solid and bear narrow leaflets about six inches long. Closely allied to it is the *Cane* (*Arundo Donax*) with stems rising from ten to fifteen feet, terminating in a large tawny plume, not unlike the pampas grass.

Laurestinus (*Viburnum Tinus*) — A small evergreen shrub, with clusters of white flowers, is to be found in gardens. One specimen

I found away from any house, on the road to Hungry Bay.

Sweet Bay (*Laurus Nobilis*)—Mostly found in gardens' with an occasional escape, is a handsome aromatic evergreen.

Castor Oil Tree (*Ricinus Communis*)—This plant assumes here the size of a small tree, ten to fifteen feet high; its stem is often purplish, its leaves one foot in diameter, flowers on branched divisions, with prickly casing. Its flowers are green with purplish tinge. It delights in old disused quarries and stony ground, where it attains its full height.

Tulip Tree—(*Liliodendron Tulipifera*) is a handsome tree, twenty to thirty feet high, bearing large, handsome flowers not unlike a tulip—hence its name. A very fine specimen is in the grounds of Pembroke Hall.

Box Elder (*Negundo Americanum*)—This tree belongs peculiarly to the northwest where it is known as Manitoba Maple. It is a handsome tree when properly trained young, but its stem without that is apt to grow twisted and gnarled. In the northwest the Indians tap this tree and make maple sugar from its sap.

Banyan—The only tree of this species on the island is on the Tucker Estate, near the new Public Gardens. As it stands well out in the open its peculiar form of growth is well seen.

Weeping Willow (*Salix Babalonica*)—This tree was first brought here in 1832 by Lady Turner, and although it has not spread to any extent, yet it may be seen in the Pembroke Valley and other moist situations.

Sugar Apple (*Anona Muricata*) *Custard Apple* (*A. Reticulata*) *Soursop* (*A. Squamosa*) have all been introduced from the West

Indies, but their fruit does not appear to be much in demand.

Burning Bush (*Poinsettia Pulcherrima*)—A handsome shrub, five to six feet high, its branches being conspicuous from terminating in clusters of green, red, and yellow flowers, surrounded by a whorl of very bright scarlet. The blossom is most attractive.

Cassava (*Jatropha Manihot*)—A smooth, shrubby plant, three to four feet high, is cultivated for its starch, from which tapioca is prepared by washing. It also forms an article of food for the natives, who, especially at Christmas time, supplant the English plum-pudding with cassava pie.

Elder (*Sambucus Nigra*) is by no means uncommon, but its showy white blossoms seldom produce fruit. Probably the want of winter's rest, which all deciduous trees get in the north, tends to barrenness.

Honey-Suckles (*Caprifolium Sempervirens*, and *Louicera Japonica*) are trained along verandahs, and are very fragrant. They may be seen growing over old walls in Devonshire.

Tansy (*Tanacetum Vulgare*) with its feather-like leaves may be noticed round many small cottages, and is valued as a stomachic and tonic.

Oleander (*Nerium Oleander*). A bushy ever-green shrub, six to twenty feet high, branched from the base. It was originally introduced here from the shores of the Mediterranean, and has taken so kindly to the soil and climate that it has spread all over the islands, and has become quite a nuisance to farming interests. The more it is cut down the thicker it grows up again, and as its seeds are as feathery as thistle down they spread

everywhere. When in full bloom the scent is almost overpowering, and it is said to exert on some people poisonous effects. The blossoms range in colour from fine white to various shades of deep red scarlet. It constitutes excellent hedges or wind-breaks.

Brugmansia (*B. Suaveolens*) is a garden shrub, and with difficulty distinguishable from the *Datura* (*D. Metel*) both of them yielding very large white trumpet-shaped blossoms. The former is a West Indian plant, and the latter having wild congeners on the island may or may not be a native.

Fiddlewood [*Citharexylum Quadrangulare*] a tall tree twenty to thirty feet high, cylindrical, branchlets four angled. It is not unlike the beech tree of the North, but for its long bunches of berries succeeding a hanging blossom. Flowers white. It is a valuable timber tree.

Calabash (*Crescentia Cujete*). This tree is scattered here and there throughout the islands, but is by no means common. The hard shell of its fruit admits of ornamental carving and handsome cup-like ornaments are made from the shell. A calabash tree at Walsingham is famous as having been planted by Tom Moore, the Irish Poet, when living in Bermuda.

Bougainvillea (*B. Spectabilis*)—This is one of the most beautiful creepers in the islands. It was introduced a few years ago, but has thrived to such an extent that scarcely a garden wall is without it. Its beauty consists of the large, scarlet, leafy bracts, growing in triplets, and from which the more delicate flowers rise. It gives an appearance of a mass of sweet pea flowers thrown together.

Avocada Pear (*Persea Gratissima*)—known

also as the Aligator Pear—Is a handsome, well-grown tree of considerable height and growth, but seldom maturing its fruit here. It has been originally brought here from the West Indies, where the fruit matures well.

Plane Tree (*Platanus Occidentalis*) — A handsome branching tree, forty feet high, smooth bark, and flowers rough heads or balls, which remain hanging on long stalks like a prickly nut, long after the flower is over. One or two fine specimens are in the Hamilton Park, and two or three also at Spanish Point, but it is not universally distributed.

Tree of Heaven (*Ailanthus Glandulosus*) is a handsome tree, twenty to thirty feet, with deep cut green leaves and white clusters of flowers. The scent of these is said to be slightly poisonous. and years ago when this tree had become quite numerous on the streets of New York, the city authorities had them all cut down, medical men attributing numerous cases of illness to the proximity of these blossoms to bedroom windows.

Magnolia (*M. Grandiflora*) — A handsome evergreen tree, twenty to thirty feet, with bright, shining green leaves, and large powerfully scented white and pinkish flowers, much resembling a waterlily. There are only a few trees on the island, and it is a pity that so beautiful a tree is not more cultivated

Mahogany (*Swietenia Mahogani*)—Only one of these solid-looking, massive-trunked trees is on the island, growing at the Flatts. It is pointed out as a curiosity as is also the following tree at Mount Langton, viz:

Satinwood (*Swietenia Chloroxylon*) — This and the preceding tree are experimental, and hardly adapted to Bermuda.

Royal Palms or *Cabbage Palm* (*Oreodoxa Oleracea*)—of which a splendid row graces Pembroke Hall, is a most handsome tree, its stem rising like a marble monolith, fifty or sixty feet, terminating in graceful feather-like plumes. This tree was imported from the West Indies and a few specimens are to be seen in private grounds. The cocoa-nut palm is similar in growth, but more frequently on marshy ground, whilst the *Gru-gru Palm*, *Catechu* and *Date* are also occasionally to be seen.

Palmetto (*Sabal Umbraculifera*)—Eight to ten feet high, has already been described under the head of the indigenous trees.

Shell Plant (*Alpinia Nutans*)—An elegant lance-leaved plant bears a nodding bunch of pink white flowers, rare.

Arrowroot (*Maranta Arundinacea*) is largely cultivated and manufactured on the islands, the Bermuda arrowroot being highly esteemed. The stem of this plant is from two to three feet high, bearing large, lanceolate leaves and white flowers. It requires constant attention in its manufacture, the starch requiring continual washing, and being finally dried and bleached in the sun.

There are numerous individual specimens of other trees and plants that require pointing out before they are noticed, such as the *Caper Bush*, *Star Apple*, *Lignum Vitæ*, *Bitterwood*, *Bean Caper*, *Lucerne*, *Saintfoi*, *Saddle-flower*, and some others. Especially noticeable among them is the *Sanseveria Zerlandica* with long, ribbon-like leaves, mottled like the bark of a snake and presenting a remarkable appearance.

The *Easter Lily*, of which there are two species, *Lilium Harrissi* and *L. Longiflora* is

largely cultivated, not only for its bulbs which supply the florists of the world, but also for its buds exported for Easter decorations in America. A very large trade is carried on with this plant, also with the onion, and the early potato.

The lists recorded in this work are imperfect, but care has been taken to enumerate, as far as possible, plant life as seen by the ordinary observer.

Ferns in Bermuda.

The ferns and fern life of these islands are so fully and ably described in a bulletin of the Torrey Botanical Club, by Mr. B. D. Gilbert, that to give another description here would be only invidious. Consequently the names and habitat are simply given, with any special remarks called for. The principal fern localities are the marshes and the caves, and damp walls or rocks.

Adiantum Capillus Veneris—Walsingham district. Planted out by Governor Lefroy, it is not a native or indigenous, but may from its spread be now counted as a naturalized species.

Adiantum Bellum—A common fern, growing everywhere on rock surfaces by the roadside and on garden walls. Universal.

Adiantum Bellum Walsingense—A variety of the above but much larger. Abundant near Walsingham.

Pteris Longifolia—Uncertain whether a native or naturalized. Crevices of walls and rocks round Hamilton.

Pteris Heterophylla—Open caves and cliffs of Walsingham. It is known as the "parsley fern." Scarce.

Pteris Aquilina Caudata. — Devonshire marsh. Very luxuriant, growing from ten to twelve feet high.

Woodevardia Virginica—Pembroke marsh, and north side of Devonshire marsh, plentiful in latter locality.

Asplenium Dentatum—Frequent on rocks at Walsingham.

Asplenium Trichomanes—Common everywhere.

Asplenium Myriophyllum—Rare, and liable to extinction. Church Cave.

Asplenium Laffanianum—An endemic species. A specimen sent to Kew proved entirely new. It is very rare. Walsingham and Church Cave.

Dryopteris Aculeata—Described by Gilbert and stated by Hemsley of the *Challenger* growing at the caves. Being in the Kew collection, it must stand as a Bermuda species at least of a former time.

Dryopteris Capensis—In danger of extermination, being very rare. Devonshire marsh. It is known as the "Ten Days Fern," it keeping green for ten days after cutting.

Dryopteris Ampla—Rare. Paynters Vale. Lefroy cites it as "common by roadsides." Doubtful if ever common.

Dryopteris Patens—Very abundant, especially in the marshes, where it attains a height of four feet, and one and a half in width.

Dryopteris Thelypteris—Grows sparingly in Pembroke marsh, and in a marsh on the north side of Hamilton.

Dryopteris Mollis—Planted out by Lefroy, but not to be found now, though a few stragglers may exist.

Dryopteris Villosa—Trott's Cave, Paynter's Vale, and a cave south of Church Cave. Plentiful in those localities only.

Dryopteris Bermudiana—An endemic species. Locality unspecified, but specimen obtained by the *Challenger*.

Nephrolepis Exaltata — Common among rocks at Walsingham.

Polypodium Elasticum (Plumula) — Paynter's Vale and Walsingham tract, sparingly.

Polypodium Pectinatum—Hemsley the only authority for this species, giving Walsingham as its habitat.

Acrosticum Aureum—Abundant in brackish marshes, the South Shore marshes yielding smaller specimens than those in Devonshire.

Acrosticum Lomarioides — Distinguished from previous species by its larger size, attaining sometimes a height of eight or nine feet. It grows in the Devonshire marsh out of the reach of tide water.

Osmunda Regalis—Abundant in Pembroke and Devonshire marshes.

Osmunda Cinamomea—Same localities as above, and very abundant, and luxuriant in growth.

Blechnum Occidentale—Cited by Lefroy as "planted out in suitable places in 1877." No evidence of its existence now, and may be regarded as a case of failure to become naturalized. Eliminating this and *Dryopteris Mollis* there are twenty-five species and varieties that may properly be regarded as native or naturalized. There are four distinctive species and variety belonging to Bermuda alone, evidently the remains of an earlier geological period than the present land surface of Bermuda.

Snuff Plant (Buddleia Neemda)—Used for cataract in the eyes.

Scurvy Grass (Cakile Maritima)—Alternative, and used for skin diseases.

Squill Scilla (Orinthoyalum Latifolium)—Syrup for infantile sore throat.

Sarsaparilla (Smilax Sagittifolia)—Tonic and blood cleanser.

Spurge Titimelly (Euphorbia Peplus)—Juice removes warts.

Tansy (Erigeron ?)—Used as a tonic and in liver complaints.

Vervain (Stachytarpheta Jamaicensis) — Used in yellow fever.

Wireweed (Sida Carpinifolia) — Juice removes and assauges wasp and bee stings.

Wormwood, Wormseed (Artemisia Tenuifolia) — Tonic and used as a vermifuge.

The writer will be glad to hear of any addition to the above, as there is a probability of a garden being planted with medicinal herbs to test their capabilities, and to ascertain if they are worth cultivating. There are several wholesale houses in New York dealing solely in herbs, barks and seeds

Water Plants.

The water and marsh plants of these islands may be considered as forming a class of their own, but whether they are indigenous or otherwise is an open question difficult to solve. It is a wellknown fact that birds of aquatic habits carry undigested seeds of water plants to far distances, as has been evidenced in ponds of estates in England where water plants suddenly appear, the congeners of which may be miles away from the new locality of growth. It may thus be assumed that seeds of water weeds have been

introduced into Bermuda during the transient flights of water birds which make these islands a resting place in their migratory flights, an idea strengthened by the fact that very few of the Bermuda species represent those belonging to the inland waters of the continent, whilst salt marsh plants predominate. The following list embraces the majority if not all of the aquatic plants.

Duckweed (*Lemna Minor*)—A small leaved floating plant, common on stagnant water.

Marshweed (*Maretail*) (*Equisetum Palustre*)—Common in Pembroke Marsh.

Sulphur Wort (*Chara Foetida*) abundant in wet ditches, growing mostly under water. Its sulphureous smell has given its name.

Sedge (*Kyllingia Monocephala*)—Wiry grass shaped leaves, apt to cut in handling, common in Pembroke and Warwick Marsh.

Clubrush (*Scirpus Validus*)—Common.

Prickly Sedge (*Cladium Occidentale*)—Takes its name from its prickly seed pods. This, together with (*Scirpus Plantagineus*) and *Scirpus Melanocarpus*, local names unknown but comprehended as sedge, are common in Pembroke Marsh.

Rush (*Juncus Tenuis*) and (*J. Maritimus*)—Large marsh rush, are common in wet places, the latter preferring watery ground.

Dayflower (*Commelyna Agraria*)—General in wet places; bears a bright blue flower; sometimes called Chickengrass.

White Sedge (*Rhynchospora Stellata*)—Abundant in Pembroke Marsh.

Para Grass (*Panicum Molle*)—Grown in marshy grounds and cut as cattle food.

Catstail (*Typha Angustifolia*)—Rare.

Ditchweed (*Ceratophyllum Demersum*)—

Common in Pembroke Marsh and water course, and in the wet portions of Devonshire Marsh.

Wild Flag (*Linum Usitatissimum*)—Naturalized in Pembroke Marsh.

Water Chickweed (*Montia Fontana*)—Common in ponds and ditches everywhere.

Marsh Mallow (*Kosteletzkya Virginica*)—Upper end of Pembroke Marsh, and in Devonshire marsh. Conspicuous for its large rose-coloured flowers in autumn.

? No local name (*Eclipta Erecta*)—A many-branched tall weed, smooth stem and swollen joints. Common on banks of watercourse in Pembroke marsh.

Pluchea (*P. Odorata* and *P. Purpurascens*)—The former rare in Pembroke, and the latter a rare annual in Shelly Bay swamp, and around Warwick pond.

Polygonum (*P. Acre*)—Abundant in various marsh ditches.

Glasswort (*Salicornia Fruticosa*)—Known also as marsh samphire. Common in salt marshes.

False Nettle (*Bachmeria Cylindrica*)—Resembles the common nettle, (without its stinging properties) and almost transparent stem.

Turnsole (*Heliotropium Curassavicum*)—Salt marshes. Twin spikes of small flowers gracefully curved in opposite directions.

Sea Purslane (*Sesuvium Portulacastrum*)—Moist places near the sea, and occasional in marshes. No petals, but stamens deep rose-pink lined sepals. Not common.

Bog Moss (*Sphagnum Palustre*)—Not very common. Head or sides of marshes, and one of the chief constituents of peat.

Orchis (*Spiranthes Brevilabris*)—This is the only orchis in Bermuda. Found in Devonshire and in Pembroke marshes. Tolerably abundant.

Marsh Mint (*Mentha Arvensis*)—Common in all marshes.

As will be seen by the above list the number is very limited as compared with other countries, a fact probably due to the absence of fresh water ponds and streams. Pembroke marsh, owing to the flowing artificial channel which traverses it, is the best adapted for actual water plants, whilst the others, which largely abound in ferns, of which Pembroke is comparatively lacking, are more adapted to the growth of marsh vegetation. All these marshes are the natural resort of birds both native and transient, and the peaty condition of the soil is conducive to aquatic growth. Water lilies, which have been experimented with, fail to succeed without special care, and many of the showy swamp flowers of the North are at once missed by the botanist. This, however, nature amply makes up for by the rich growth and showy blossoms of the land plants. Marsh botanizing is very attractive and the search for specimens in localities of such a nature is free from the apprehension of reptile life, which abounds in the swampy and marsh lands of the neighbouring continent.



THE GRASSES, mosses (very few) lichens, and cryptogamous plants will form a separate bulletin. It may be remarked *en passant* that the ordinary grasses of the island are not as nutritious for feeding purposes as those of more northern climes, and an occasional extra feed is necessary for dairy purposes.

SEAWEEDS, forming a different class of vegetable growth are not dealt with in a work of this nature.

With the exception of the Pride of India, the Poinciana and the Pomegranate, there are no trees that may be styled deciduous on the islands. Although not evergreens in the true sense in which that term is applied in the north, they yet retain such a proportion of foliage during the winter season that the leaves they shed are scarcely noticeable. The rubber tree, although always green, sheds a large portion of its leaves in March, perhaps more noticeable from their size than in other trees, yet the new growth either forcing off the matured leaf or supplying its place before the latter is shed, fills up the gap. Northern trees which require by nature or from habitat a period of rest do not thrive here, and either degenerate or become so straggling that they cease to be either useful or ornamental. Several curious individual trees are to be seen in the Public Gardens St. George's, and in the Park, Hamilton, but they may be called solitary specimens, and not ranked among the regular trees of the islands.

Actual garden flowers and shrubs are not in the above list, neither are the cultivated vegetables, as being scarcely botanical specimens.

OMITTED IN ESCAPES: Morning Glory, (*Convolvulus*) and Narcissus; and in **SPECIALLY**

INTRODUCED: Life Plant, (Bryophyllum) Tamarind, several Palms, Ivy (Hedera), Queen of Shrubs.

In 1623 a hundred years after discovery, an old chronicler writes "there are abundance of potatoes, tobacco, sugar cane, indigo, cassava, pumpkin, water melons, and most delicate pine apples, plantains, papaws, English artichoke, pease, etc," so that cultivation had evidently made great strides in that period of time. Also he mentions "oranges, lemons and pomegranates."

The recent establishment of a public garden here must materially assist in developing the botanical capabilities of these islands, and experiments will show what can be done in the way of reproducing the fruits recorded by the early chroniclers.

The author will be glad to have his attention called to any actual errors or omissions which must necessarily occur in a compilation of this nature, so as to enable him to rectify and emendate the same in any future edition of this work.

In conclusion, it may be said that it has been very difficult to decide between plants specially brought in, and those grown from seed packages. Lefroy styles both "fluctuating," with "no proper place in the local flora." The former embrace, (omitted) Locust, Coffee, Jasmine, Frangipani, Ipecacuanha, Baytree, and Watercress; while to seed packages may be traced Sandwort, Pennywort, Dandelion, Golden Rod, Pimpernel, Dayflower and Geum-radiatum.

There are in the Trimmingham grounds, adjoining the Public Gardens, at Pembroke Hall, as well as in several other private grounds on the islands, numerous individual speci-

mens of West Indian and other tropical trees, all apparently thriving and attaining a strong and healthy growth. They are for the most part fruit trees, but their bearing capabilities shew they have taken kindly to their new locality. These could hardly be included in a work like the present, but their cultivation simply shows that with care many new fruits might be grown here. Lefroy says "there are doubtless plants in old gardens which have escaped notice," and points to "possibilities of fresh discovery in that direction."

Apart from this botanical list there will appear next week, by special request, a list of the medicinal plants of Bermuda, as far as the writer has been able to trace them.

Medicinal Plants.

Arrowroot (*Maranta Arundinacea*)—Invalid food.

Aloe (*Aloe Soccotrina*)—Juice used for poultice. Conserve.

Alexanders (*Smyrnum Olusatrum*)—Carminative.

Birthwort (*Aristolochia Trilobata*)—Supposedly of virtue in parturition.

Bryone (*Sicyos Angulatus*)—Fevers and colds.

Catnep (*Nepeta Cataria*)—Useful in chills, colds and fevers.

Castor Oil Plant (*Ricinus Communis*)—Cathartic and purgative.

Cedar (*Juniperus Bermudiana*)—Conserve from berries for pulmonary disease.

Centaury (*Centaurea Gymnocarpa*)—Used as a tonic.

Coriander (*Coriandrum Sativum*)—Carminative.

Clover, Red (*Trifolium Pratense*)—Flowers said to be good for urinary complaints.

Datura, Thorn Apple (*Datura Stramonium*)—The leaves smoked relieve asthma.

Elder (*Sambucus Nigra*)—Lotion and cooling ointment from flowers.

Fox Glove (*Digitalis*)—Diuretic, and used in heart disease.

Fever Few (*Pyrethrum Parthenicum*)—Fevers and a tonic.

Ginger (*Zingiber Officinale*)—Tea used for colic and spasms.

Horse Radish Tree (*Moringa Pterygosperma*)—Produces Ben oil used by watchmakers.

Horehound (*Marrubium Vulgare*)—Coughs and colds.

Ipecacuanah (*Aselepias Curassairea*)—Emetic.

Mullein (*Verbascum Thapsus*)—Leaves are smoked for asthma and neuralgia.

Mercury (*Mercurialis Annua*)—Constipation and liver complaint.

Milkweed (*Aselepias*)—Urinary disease, used as poultice on loins.

Papaw (*Carica Papaya*)—Leaves popularly believed to have curative powers externally applied for rheumatism. Juice makes pepsin, a great aid to digestion.

Pride of India (*Melia Azedarach*)—Bark an astringent useful in diarrhœa and dysentery.

Prickly Poppy (*Argemone Mexicana*)—Juice said to be good for inflamed or diseased eyes.

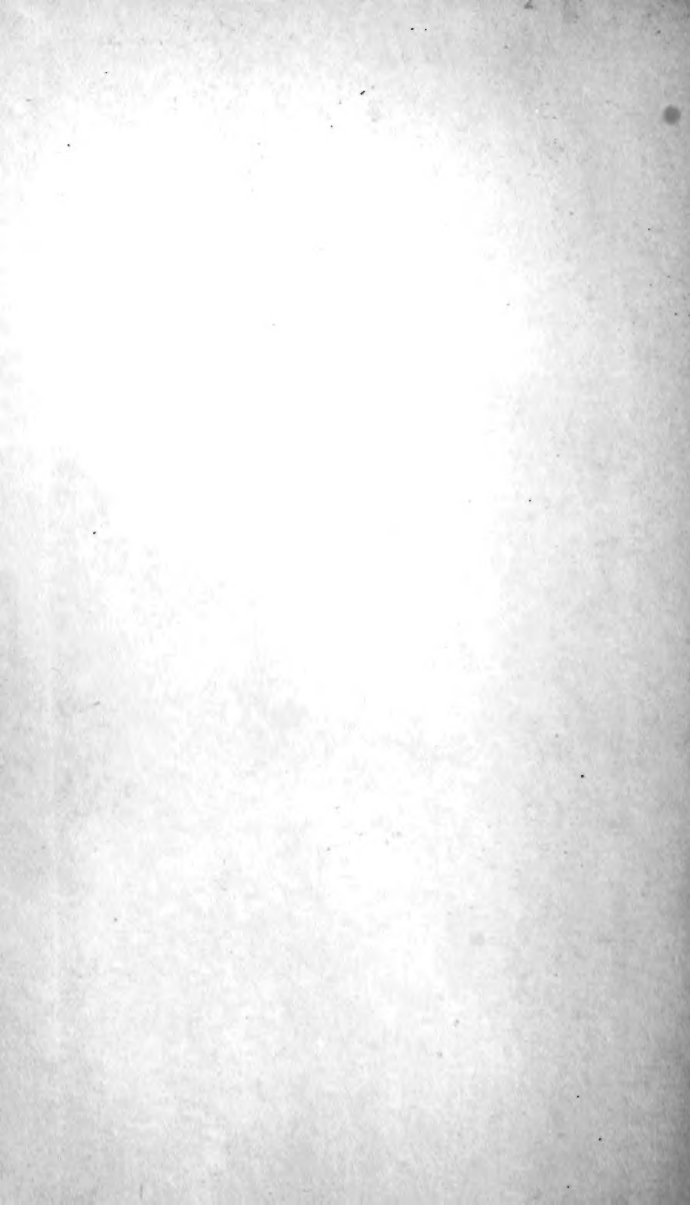
Quassia (*Quassia Amara*)—Tonic.

Seaside Lavender (*Statice Caroliniana*)—Dropsy.

Solanum Nightshade (*Belladonna*)—Sedative, and used in plasters.







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