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REPORT

—ON—

NATAL BOTANIC GARDENS,

—AND—

COLONIAL HERBARIUM,

FROM

—✂ July 1st, 1902, to June 30th, 1903, ✂—

—BY—

J. MEDLEY WOOD, A.L.S.,

Corresponding Member of the Pharmaceutical Society
of Great Britain.

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C U R A T O R . ~ ~ ~

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1903.

Durban Botanic Society.



R E P O R T

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THE UNIVERSITY OF CHICAGO

PHYSICS DEPARTMENT

PHYSICS 309

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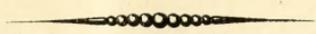
Editor:

MR. J. D. BARNARD.

DURBAN BOTANIC GARDENS.



BYE-LAWS.



1. The Gardens are open to the public every weekday from sunrise to sunset ; on Sundays from 2 o'clock p.m. until sunset.

2. The only public entrance is opposite to Botanic Gardens Road, and persons are prohibited from entering or leaving by any other way.

3 Children under 10 years of age, unless accompanied by a competent protector, cannot be admitted.

4. Persons accompanied by a dog or dogs cannot be admitted.

5. No vehicle shall be allowed entrance, nor persons upon bicycles, but upon application to the Curator, invalids in wheeled chairs may be admitted.

6. Admission may be granted to pic-nic parties, if permission be first obtained from the Curator.

7. Visitors are requested to keep to the paths.

8. Touching or handling plants, fruits, or flowers is strictly prohibited.

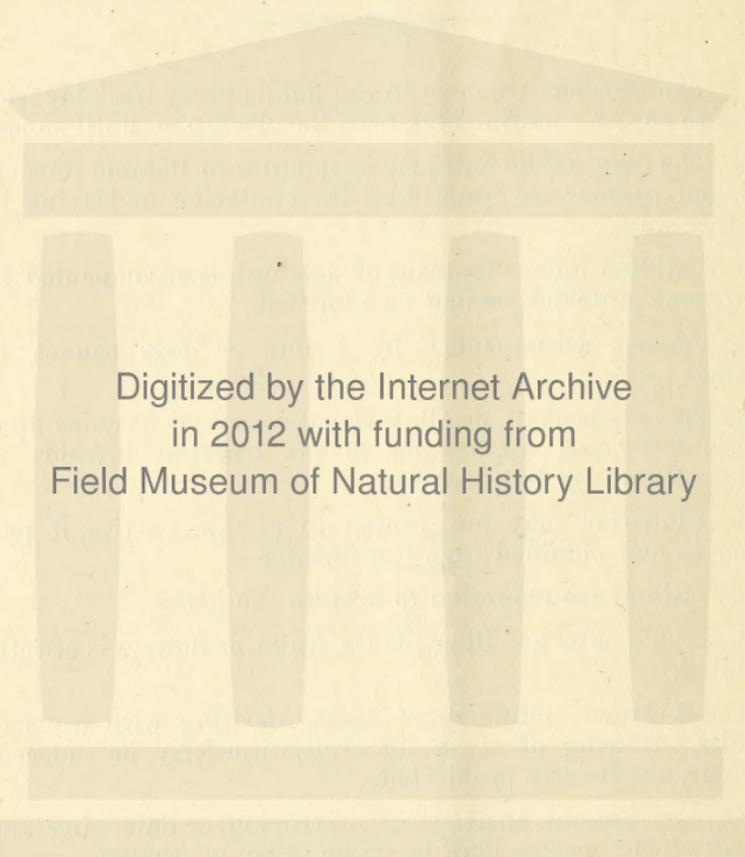
9. All games, climbing of trees, shooting with guns or catapults, throwing of stones or fruit, disorderly or indecent behaviour, are strictly prohibited.

10. Any persons abstracting, destroying or damaging any property of the Society shall be liable to be prosecuted.

11. The Curator is hereby authorised to prosecute offenders under the foregoing Bye-Laws whenever found to be necessary.

The Jubilee Conservatory is open to the public as under :—

Week days from 9 a.m. to 6 p.m. in summer ; from 9 a.m. to sunset in winter ; Sundays, from 2-30 p.m. to 5-30 p.m. in summer ; from 2-30 p.m. to sunset in winter.



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—❧— *REPORT.* —❧—

NATAL BOTANIC GARDENS, BEREA,
DURBAN, JULY, 1903.

*To the President and Committee,
Durban Botanic Society.*

GENTLEMEN,

I have much pleasure in presenting my Annual Report on the Botanic Gardens, this being the 22nd Annual Report that I have had the honour of preparing. I have again to record the occurrence of a fairly favourable season, as though the earlier portion of the season was rather dry, it was not sufficiently so to do much damage to the trees and shrubs in the Garden, though smaller plants and annuals suffered considerably, and the growth of the young Citrus stocks was very greatly retarded; in the upper portions of the Colony the drought has been more severe, and crops have been considerably damaged, in many cases they have been total failures. The latter portion of the season has been more favourable in the coast districts, though the winter promises to be a severe one. Fortunately we are seldom subject to any frost, except in the lower part of the ground, and then it is but very light, and up to date none has occurred, though I understand that in some parts of the coast districts, in low-lying localities, the sugar canes have been damaged.

The Mango crop was again an almost total failure, probably on account of the dry spell in the early part of the summer, this being the second year in succession that this crop has failed, an unusual occurrence with us, and probably for the same reason the Litchi crop was also a total failure, but few fruit were ripened, and those were almost uneatable.

As stated in my last Annual Report, the supply of native labour was, in the early part of the season, very scanty, and men were almost unobtainable even at the high rate of wages that were being paid by contractors and others, so that we were left with scarcely enough men to carry on the ordinary work

in the Garden. In August, however, three of the men for which we had applied arrived from India, and in September a fourth one, these being specially selected in India for gardening work; there are still two more to arrive. In November we took over ten indentured men who had been employed on one of the collieries, and were found to be not suited for the work. All of them were in the second year of their indenture, and are now working fairly well. Fortunately when these men were offered to us the building which had been erected for Indian quarters was just completed, so that there was no difficulty in housing them. As a result of the failure of the mealie crops, native labour has lately become more plentiful, but the wages are still high, and likely to remain so, and as the season advances it is almost certain that the supply will diminish, and we are therefore fortunate in being in a position to carry on the work with Indian labour—that is the routine work only, for any considerable improvements or alterations we are still dependent on some supply of native labour.

The question of manure for the ground has become a somewhat pressing one. It must be remembered that the greater portion of the ground has been in cultivation for from 40 to 50 years, and with the exception of a scanty supply to the flower beds, little or no manure has been applied. Some years ago we obtained a supply of stable manure from the Berea Tram Stables delivered free at the Gardens, on the condition that we took the urine also, but this eventually became such a nuisance that we were compelled to discontinue taking it, and for the last two or three years we have not had nearly sufficient for our requirements, and now that the electric trams are at work, no supply can be obtained from that quarter; it was therefore decided to obtain a horse and a light trolley so that we could do our own cartage, and bring the manure to the lower part of the ground, where the most of it is required, and where it will not be a nuisance to visitors. A stable and cart-house have been built, a trolley ordered, and I hope in a short time a horse and harness will be obtained, so that we may get together a stock of manure before the busy season arrives.

As the dwelling house of the head gardener was much too small, two brick-built rooms have been added to it in front of the old wood and iron ones, thus not only enlarging the house, but making it a little more sightly, standing as it does so close to the present entrance to the Gardens.

It has been decided by the Durban Corporation to locate the new athletic grounds at the foot of the hill close to the Gardens, and as it is certain that Avondale Road, which divides the Gardens from these new athletic grounds, will then be hardened, with the probability of a tram line very close to our boundary, it will be necessary to take into consideration the

advisability of making a new entrance to the Garden from its lower boundary, and if that were done it would be the main entrance to the ground, since it would be accessible from every part of the town and suburbs. As soon, therefore, as reliable information can be obtained as to the direction of the road, and ultimately of the tram line, it will be necessary for us to prepare by clearing the ground, which at present is thickly covered with light bush, and laying it out in readiness for opening the new entrance.

In consequence of the great scarcity of coloured labour during a large portion of the year, nothing has been done towards removing the old conservatory and enlarging the fernery, as mentioned in my last Report, and as material and labour is at present very expensive, the matter has been allowed to stand over, but has not been lost sight of. It will, I think, be better to have this work done by contract, and, I hope, during the coming year.

The tank so kindly built by the Durban Corporation on the top of the old reservoir has proved very attractive to visitors, several varieties of *Nymphæa* have been grown in it and have been constantly in flower. The *Victoria regia* for which a special well was made in the centre of the tank bore several flowers, and was a great attraction. The "gold fish," of which we obtained a dozen or more, have increased until now there are probably one or two hundreds, and will have to be reduced in number during the winter.

The plant labels alluded to in my last Report arrived during the year, and have been put into their places. They are not so conspicuous as the enamelled ones previously obtained, but will, I believe, last much longer, and are quite suitable for the purpose.

During the visit of Mr. Peter Barr, V.M.H. to the Colony, he recommended that we should try some Daffodils, feeling sure that they would succeed here. He made a selection of the most likely varieties for us to try, and a box of bulbs was obtained. They arrived in very fair order, and at the time of writing some 15 or more of the varieties have commenced to grow, but so far no flowers have appeared; whether the bulbs will live for another season is as yet uncertain, but it is worth a trial.

The following plants have flowered in the Gardens for the first time:—

<i>Bignonia purpurea</i>	<i>Nymphæa zanzibarensis</i>	
<i>Brassia actinophylla</i>	" "	<i>var azurea</i>
<i>Nymphæa alba</i>	" "	<i>var rosea</i>
" <i>coerulea</i>	<i>Stenocarpus sinuatus</i>	
" <i>gracilis</i>	<i>Victoria regia</i>	
" <i>pygmaea</i>		

The seeds of *Victoria regia* were received from Kew Gardens on October 7th, 1902, and were planted on the same day. Ten days afterwards one germinated, and at the end of three weeks fifteen out of the eighteen seeds received had germinated. Three plants were put into the large tank on December 9th, one being in a half cask, one in the small well in the corner, and the finest plant in the central well, and this one opened the first flower on March 12th and produced 12 flowers in all. The other two, from want of room, did not bear any flowers. The largest leaves were 50 inches in diameter, and the flowers 10 inches in diameter. One ovary only ripened and yielded about 50 seeds, and we hope that by getting the plant into the large tank earlier in the season better results will be obtained during the coming summer.

Packets of seeds have been received during the year as under:—

M. Buysman, Holland	...	...	18
H. Swanfield, Natal	...	...	2
Hon. R. Jameson, Natal	...	...	7
Botanic Gardens, Najpur	...	...	1
J. L. Elmore, ?	...	...	12
J. O'Brien, England	...	...	1
Botanic Gardens, Melbourne	...	...	20
Reasoner Bros., Florida	...	...	8
W. S. Seaman, Natal	...	...	2
Botanic Gardens, Sydney	...	...	26
C. C. Sprenger, Italy	...	...	39
S. N. Price, Natal	...	...	1
Botanic Gardens, Trinidad	...	...	1
Royal Botanic Gardens, Kew	...	...	4
Mrs. Blaker, Natal	...	...	1
Sander & Co., St. Albans	...	...	5
H. A. Dreer	...	...	1
W. Thorpe, England	...	...	12
Max Leichtlin, Baden-Baden	...	...	1
J. F. Ingram, Natal	...	...	1
W. J. Haygarth, Natal	...	...	7
Mrs. Ball, Natal	...	...	2
Botanic Station, Lagos	...	...	1
Major Wright, England	...	...	1
G. Thorncroft, Transvaal	...	...	3
Forest Department, Uganda	...	...	1
Miss Darby, Natal	...	...	1
Herb & Wulle, Italy	...	...	30
Botanic Gardens, Sierra Leone	...	...	1
Botanic Gardens, Saharunpur	...	...	44
Royal Gardens, Calcutta	...	...	70

J. Aitken, Australia	...	...	12
Mrs. Robinson, Natal	...	...	1
			<hr/>
Total	...	...	337

Packets of seeds were sent away for exchange as under:—

Botanic Gardens, Adelaide	...	...	34
” ” Bangalore	...	...	34
” ” Brisbane	...	...	34
” ” British Guiana	...	...	34
” ” Cambridge, England	...	...	34
” ” Fiji	...	...	34
” ” Tasmania	...	...	34
” ” Hong-Kong	...	...	34
” ” Mauritius	...	...	5
” ” Melbourne	...	...	34
” ” Najpur	...	...	34
” ” Ootacamund	...	...	34
” ” Port Darwin	...	...	34
” ” Saharanpur	...	...	34
” ” Sierra Leone	...	...	34
” ” Sydney	...	...	34
” ” Wellington, New Zealand	...	...	34
Royal Botanic Gardens, Calcutta	...	...	34
” ” Ceylon	...	...	34
” ” Kew, England	...	...	1
Agri-Horticultural Society of India, Calcutta	...	...	34
H. J. Chalwin, Capetown	...	...	1
Emperor of Austria, Vienna	...	...	9
Reasoner Bros., Florida	...	...	34

696

Plants were received during the year from the following:—

Barr & Sons, London	...	...	59 varieties
Agri-Horticultural Society, Madras	...	...	17 species
H. J. Chalwin, Capetown	...	...	23 ”
G. Thorncroft, Durban	...	...	4 ”
H. Strauss, Germany	...	...	66 varieties

Packages of plants were sent away as under:—

Royal Botanic Gardens, Kew, 2 bxs. cont.	22 plants of 6 species
Botanic Gardens, Melbourne, 1	85 ” 22 ”
Emperor of Austria	1 ” 6 ”
Barr & Sons, London	5 ” 1170 ” 3 ”
H. J. Chalwin, Capetown	1 ” 426 ” 19 ”

Damman & Co., Naples	...	3	„	810	„	4 species
Sander & Sons, England	...	7	„	1828	„	5 „
Sprenger & Son, Naples	...	3	„	900	„	3 „
		<hr/>		<hr/>		<hr/>
		23		5251		68

The following plants were put out in the Garden during the year:—

<i>Babiana macrantha</i>	<i>Babiana villosa</i>
„ <i>rubrocyanea</i>	„ „ <i>var stricta</i>
„ <i>spathacea</i>	<i>Bæomitra columellaris</i>
<i>Bulbine pugioniformis</i>	<i>Geissorhiza humilis</i>
<i>Gladiolus angustus</i>	<i>Gladiolus cuspidatus</i>
<i>Gladiolus trichonemifolia</i>	<i>Homeria elegans</i>
<i>Kæmpferia</i> , two species	<i>Kniphofia</i> , six species
<i>Narcissus</i> , 59 varieties	<i>Nerine corusca</i>
<i>Stapelia</i> , four species	<i>Trichonema aureum</i>
<i>Trichonema bulbocodioides</i>	„ <i>flava</i>
„ <i>purpurea</i>	„ <i>roseum</i>
„ <i>speciosum</i>	<i>Vitis quadrangularis</i>
<i>Watsonia aletroides</i>	<i>Watsonia humilis</i>
„ <i>O'Brieni</i>	„ <i>spicata</i>

During the period between July 1st, 1901, and June 30th, 1902, we received 89 species of plants and 1028 packets of seeds which resulted as under:—

PLANTS.		SEEDS.		
Dead on arrival	3	Failed to germinate	...	210
Died afterwards	8	Germinated, but died afterwards	...	150
Still in pots	78	Still in pots	...	185
	—	Annuals and vegetables	...	113
	89	Not suitable for climate	...	120
		Duplicates	...	250
				<hr/>
				1028

The following free grants of plants have been made:—

Y.M.C.A. (hire of plants)	...	£4	4	0
Seaman's Institute	...	1	11	0
Stanger Library	...	0	16	0
Sailors' Rest, Durban	...	3	0	0
Experimental Farm	...	0	14	6
Guild of Loyal women, flowers	...	3	0	0
		<hr/>		
		£13	5	6

I now have the pleasure to add a few notes and extracts relating to plants, some of which are in the Garden, while others have been the subject of correspondence during the year.

Xanthorrhoea hastilis.—"Black Boy" or "Grass Gum Tree." I regret to have to report that this plant died during the year from attack of white ants. It stood near to the main walk, and was a very attractive plant. It flowered in 1899, seeds were obtained from it and plants reared. Several have been put out in the Garden, but it will be a long time before they attain the size of the parent plant, which was at least 40 years old, perhaps more.

Ocimum viride.—This plant, which is a native of tropical Africa, is said to have the property of repelling mosquitos, and it is reported that three or four of the living plants kept in a room will completely free it from these pests. We received a packet of seed from Sierra Leone and hope to have plants for trial during the summer months. It occurred to me that our native *Ocimum gratissimum*, Linn (*O. suave*, Willd) being very powerfully scented, might possibly have the same property as *O. viride*. I therefore had seeds of it collected, and this plant will also be tested during the summer.

Litsea chinensis.—I take the following from "Tropical Agriculturist" of January last:—

"If all that is said of *Litsea chinensis* the Sinhalese Bomi, and Tamil Ellumpurukki is correct, this is certainly a remarkable tree. Trimen in his Flora says no more than that 'the wood is used for house-building, bark glutinous and used medicinally as an external application for bruises, &c.' The following extract from Ferguson's 'All about Fibres, Drugs, &c.' gives an account of its medicinal properties:—'There is a tree growing in Patchalapalla District, in the Northern Province, the name of which is Elamborekka, literally translated 'bone-setter.' The medicinal properties lie in the bark, and the native doctors are accustomed to apply the pounded drug in the shape of a poultice to a broken limb, for the space of about 20 minutes, or as they calculate for the time a pot of rice takes to boil, when it is removed and the limb bound up in the confident expectation that the several parts will unite without further trouble. Fabulous stories are told as a matter of course, of the virtues of this remedy, but a case came under my own observation which may as well be stated. A Sinhalese aged about 50 was brought to Mr. Simon Gasie Chetty, late Judge of Chilaw, having been picked up on the roadside, where he was left by robbers. They had beaten him with sticks till his arm was smashed from shoulder to wrist, and the Judge was for calling in at once the Sub-Assistant Surgeon, but the man declined the

offer with somewhat of scorn. He was, he said, a *vederale* (doctor) himself, and could get his arm right. Fortunately for him there happened to be a solitary Elamborekka tree in the jail compound, and he had the bark of it applied in the manner above detailed. It seemed impossible that he could escape amputation, but two months afterwards he was in the field superintending his labourers with a sound and apparently strong limb. For the truth of this statement I can vouch, having seen the battered arm, and also seen the man after recovery.’”

The name of the above authority is not stated, but we may take it for granted that the account is perfectly reliable, seeing that it has been accepted by the Editors.

Dr. Watt, in his “Dictionary of Economic Products of India,” makes reference to *Litsea chinensis*, stating that the bark, which is feebly balsamic and mucilaginous, is one of the best known and most popular native drugs. In India, besides being employed as a demulcent and mild astringent in diarrhoea and dysentery, it is said to be used fresh ground with water and milk as an emollient, and applied to bruises, as well as a styptic for wounds. Further, we are told that it is a local anodyne for venomous bites. (Watt mentions that *L. zeylanica*, our “Wild Cinnamon, and the Sinhalese dawul-kurundu, is also employed for snake bite.) The oil from berries of *L. chinensis* is employed in India as an ointment for rheumatism, while in China and Java candles are made from it.

Mr. E. Hoole, of Kandy, is good enough to write to us with reference to this tree:—“The tree is found growing in the Peradeniya Botanic Gardens, and the coolies there seem to be aware of its medicinal properties. The bark, which is glutinous, is used as an external application to bruises and fractures generally, after being made into a poultice with kurakkan (*Eleusine coraccana*).”

In the list of drugs (with their uses) prepared for the Paris Exhibition, this tree is referred to, and it is stated that the bark is used in dislocations; also in bruises to produce dispersion of extravasated blood.

Dr. O’Shaughnessy, in his “Bengal Dispensary and Pharmacopœa (1841),” speaks of the bark as a favourite application to bruises and wounds. Here, then, is a tree, the medicinal properties of which are well worth the attention of local medical men.

We have in the Botanic Gardens three or four specimens of this tree, which are growing luxuriantly, and bear seeds in abundance. Numerous plants have been reared and sent out to different places; amongst others, some were sent to be planted in the Cemetery at Eshowe, where we hear that they are doing remarkably well; but it is only from the article quoted that I hear of the medicinal properties of the plant. It appears in the "Guide to the Trees in the Garden" as *Litsea sebifera*, which, according to the "Index Kewensis," is the correct name, *L. chinensis* being a synonym. It is dioecious, and one at least of our trees is a staminal one.

Artocarpus integrifolia "Jack."—We have in the Botanic Gardens two trees of this species, but they are growing in rather poor soil, and do not bear very well. The fruits, or such of them as reach maturity, are fairly large; in better soil they would no doubt yield more plentifully. The Indians seem to like the fruit, but Europeans in Natal do not seem to have acquired the taste for it, so I quote a portion of an article from the "Tropical Agriculturist," and I may add that I have myself several times eaten the boiled seeds as a vegetable, and relished them. As a number of trees have been sent out from here, some of which should be now in bearing, the article may not be without interest, it is as follows:—

"The fruit is distinctly palatable, and is wholesome and nutritious. The smell, however, is apt to prejudice one against it on tasting it for the first time, and if, in ignorance, an over-ripe fruit is opened, not only is the smell intensified and rendered disagreeable, but the fruit is not so nice flavoured, for, like the Durian, to which it is sometimes likened, it must be taken at the right degree of ripeness to be appreciated."

If these over-ripe fruits are removed or buried, the smell is really no stronger than that of the Mango, and not as disagreeable. To judge a ripe Jack fruit, however, needs a little practice, for one cannot judge by colour. The usual method is to tap the fruit, or flip it with the finger, when the hollowness of the sound denotes the degree of ripeness.

The white milky juice, which is very sticky, renders an unripe fruit uneatable, and in an over-ripe one, the stringyness as well as strong smell, makes it equally unpalatable. An ideal fruit should have the pulp firm, but neither soft nor hard, and a pale yellow colour, when it will be found sweet and of a most agreeable flavour.

In its native countries the fruit is considered a delicacy; natives will pay 1s. to 1/4 each for them, and Europeans become exceedingly fond of them. The pulp may also be cooked in

various ways. I have had it boiled in milk, cooked in custards, fried in butter, and preserved in honey. In the latter form it is an excellent dessert. Bernays, in his "Cultural Industries," gives a recipe for boiling in milk, from which, however, the pulp would subsequently seem to be strained off.

In opening a fruit the rind, which is about half an inch thick, should be cut through, and the fruit then broken open. The pulp sacs containing the seeds may then be picked out from the surrounding fibres. These should at once be cut open, the seed taken out, and put into a basin of water. The addition of a very little salt to the water improves them, and it is said eliminates what little smell may remain. If strained and served up promptly, with icing sugar sifted over, they are not only palatable but excellent eating, and quite odourless.

However, although it cannot be said that in this case "all love Jack," still all concur in attesting to the excellence of the nuts when roasted. They may be roasted like English chestnuts, which they much resemble, or boiled and used in curries or stews. After being boiled they are sometimes dried and ground, and cakes and nutritious farinaceous foods made from the flour.

The Jack-tree is also useful as a timber tree. The wood is bright yellow when first cut, and is hard. It soon turns darker on exposure, however, and when old and polished compares very favourably with mahogany in durability, beauty of grain, and colour. From India and the South Seas the timber is sent to England, where it is used for cabinet and furniture making, and largely in the manufacture of brush backs. It takes a very high polish, and works up very like satinwood. In India the wood of the roots is used for carving, and small boxes and articles of this wood, after seasoning and being artificially scented (generally by being packed together with sandal-wood), are passed off as this more valuable wood. The principal use of the Jack-tree in the Northern portion of this State would be as fodder, and in this way it would probably be as valuable as the Algaroba or Mesquit bean tree. The leaves are readily eaten by stock, and it is a tree that will grow in a dry as well as in a hot climate. In some of the dry parts of India it is extensively lopped annually to feed cattle. The fruits, also, are greedily eaten by all kinds of stock; pigs and calves are very fond of them. The fruit, however, unless allowed to become over-ripe and drop, should be split open. As a shade-tree in paddocks it is always green and cool. Like all other Artocarpads, the jack exudes a considerable quantity of viscid milky juice, from which the best birdlime is made in India. This sap is also used, mixed with other material, for caulking small

boats and canoes. A yellow or kaki dye is extracted from the wood, bark, and roots (and, Bernay says, also by boiling the sawdust). As an ornamental tree in tropical landscape gardening, it is in demand, and in farmyards or their vicinity is a graceful as well as a handsome shade, and if used for no other purpose adds to the too little compost manure heap by its shed leaves and fruits. As a shade for coffee it is popular in some parts, especially in steep land, where the soil is a bad retainer of moisture. . . . Altogether the tree is thought highly of, and considered second only to the "Bread-fruit" in economic value in its native land, where it is one of the few trees left standing and preserved when new scrub land is opened for cultivation. In India several seeds are often sowed together, and the young plants subsequently grafted together into one stem by approach, making a stronger and somewhat quicker growing tree. This is supposed to make the tree come into bearing earlier also, but this is very doubtful. Bernays states that whole fruits are planted for subsequently grafting as above. I have not seen this done, but, if the whole 100 or 200 seeds germinated, the subsequent grafting or inarching must prove a somewhat complicated process. In the same article by Bernays, which is about the best I have yet met with on this too little appreciated tree, a method of growing a long stem is described, which I have carried out with some success. By this method of cultivation the seedling jack is made to grow up a hollow bamboo till $2\frac{1}{2}$ to 3 feet high; then the stem, which is thin and pliable, is twisted round like a corkscrew, more often in one circle on the ground and covered in with earth. This stem grows with the tree, and if bearing on the stem and branches is discouraged, will often bear on the buried portion of the stem. This procedure is not invariably successful however. It is an experiment easily made, and the root fruit, if obtained, is so vastly superior to others, as to be well worth the time and trouble. . . . The tree requires a soil fairly free from large rocks or bed rocks rather than a loose soil. I have known them thrive amongst boulders, but die out even at ten years of age when sheet rock was met with eight feet below the surface. They do not require rich soil, nor heavy rainfall. Once established they draw moisture from great depths to the surface, and, while immediately under them the shade may be too dense for grass, pasture luxuriates in their immediate vicinity. For a hardwood tree it is quick growing, attaining a height of 5 to 20 feet in four years, and usually coming into bearing about that time.

Carica Papaya. "Papaw."—I have frequently been asked how to distinguish in the young state between the male and female plants of the Papaw, and have been told that the Indian

gardeners can do so, but on asking our Indian gardeners they appear to know nothing of it. I have lately received a letter on this matter, in which it is stated that a friend of the writer's understands that it is possible to distinguish between the two by the seeds. This is quite new, and I think unlikely to be correct; but in the *Agricultural Magazine* of Colombo for May last, I find an article extracted from the *Journal d'Agriculture* on "The changing of the sex in plants," and I quote here that part of it referring to the Papaw:—

"In our experience the topping—or cutting of the terminal bud—of 'male' papaw trees (*Carica Papaya*) as soon as the character of the flower is ascertainable, results in altering that character and inducing them to yield good fruit in lieu of the wretched specimens borne by the so-called male tree.

"In this case, as with the date palms, there is no doubt that the drastic treatment adopted, results in what is referred to in the *Journal d'Agriculture Tropicale* as a concentration of the sap.

"In the Papaw the weakly nature of the male tree is characteristic, and the sex could almost be anticipated before blossoming. Whether any such distinctive character is observable in the date palm we cannot say, but it is more than likely there is. By cutting back, therefore, it is reasonable to suppose that the sudden checking of the upward flow of sap to meet the demands of the new growths in the region of the terminal bud, brings about a turgid condition of the cells and a corresponding concentrated or vigorous condition of the cell-sap, which is thus enabled to develop the fruit-bearing organs of the flower.

"In a male or staminate flower, we must of course assume that the pistillate part of it is only suppressed, and capable of development under extraordinary conditions. Suppression is defined in ordinary botanical text books as the absence of parts in a flower, which from analogy we might expect to find. The correctness of this view is proved by the fact that we often find an imperfect or partial development of organs that should be present under ordinary circumstances. To such partial development of the pistil must be attributed the production of imperfect fruit on the so-called male papaw tree. And that the further development of organs, which have a tendency to suppression, is possible by artificial means, is further proved by the fact referred to above—namely, that the cutting back of the plant in the male papaw results in the production of pistillate flowers. It will be found in actual practice that one cutting back does not always bring about the desired result, and that the tree has to be attacked more than once before the tendency to suppression of the female organ is overcome.

“The ingenuity of the skilled gardener has produced marvellous results in floriculture, not merely in the development or suppression of organs, but also in the multiplication of the parts of flowers, the increase of the number of one series with the corresponding decrease or suppression of another. With the possibility of such results, the apparent marvel of changing the sex of flowers loses its marvellous character. For change of sex would be nothing more than the development or suppression of the stamens or pistil, resulting in the production of male, female, or hermaphrodite flowers. The sexual character of the flower would thus appear to be, to some extent at least, controllable, and dependent on the influence of external forces.”

I hope during the coming season to be able to test this matter, and, perhaps, others having young plants of Papaw which turn out to be males will also try this rather interesting experiment.

Arachis hypogaea. “Ground nut.”—Several attempts have been made in Natal to cultivate this plant on a commercial scale, about the year 1858 a mill for extracting the oil was established by the late Mr. George Russell of Durban, but as Mr. Russell states in his “History of Natal,” the introduction of camphine and paraffin left the oil unsaleable in his vats, and as I note that he tried without much success to get the natives to cultivate the plant, I think that his supplies of nuts were not very abundant. I believe that the plant was also grown by Mr. Seymour at a farm near Malvern, and that a mill was also established there, and still later on, the plant was grown by Mr. A. H. Galloway near Mount Moreland—these attempts evidently all ended in failure to make the cultivation of the crop profitable. Under these circumstances, therefore, an article in the *Agricultural News* of the West Indies, which was extracted from the *Southern Planter* for May 1903 will be instructive and most probably supply the reason why this crop has, so far as I am aware, always been a failure in Natal. It seems probable that some attention is again being given to the cultivation of this plant, as I have had several applications for information about it, and I therefore give the article entire.

“The demand for these nuts has been good, prices are better than for some years past, and the stocks held by dealers are, we are told, small. This would indicate a good demand for the next crop, as the consumption is a growing one both for domestic use and for oil and feeding purposes. We are strongly of opinion that, if better methods of preparation of the land and a better system of rotation were followed, and more consideration were given to the requirements of the crop in the way of fertilizers, much heavier crops would be grown than the average now raised. The crop is an important one in Eastern

Virginia and North Carolina, and the land well suited for its production, but in many sections they have been too long grown on the same land without a rotation of other crops. According to the census reports, the area devoted to growing pea nuts in 1899 in Virginia was 116,914 acres, and the product was 3,713,347 bushels, the average yield per acre being 31 bushels. In North Carolina, in the same year, 95,856 acres were devoted to the crop, and the yield was 3,460,439 bushels. These yields are too small to be profitable, and fall far short of what can easily be made. Fifty bushels to the acre can readily be made by planting in a proper rotation and by fertilizing scientifically. One hundred bushels per acre have been frequently grown. Too often the practice is to follow pea nuts with pea nuts, year after year, until the land will not produce a crop worth gathering. At best, the only rotation is pea nuts followed by corn, and then by pea nuts again. This is too short a rotation. A more profitable way would be to grow cow peas or soy beans, and then follow with pea nuts, and after this crop plant sweet potatoes. A dressing of 300lbs. to the acre of acid phosphate should be applied to the cow pea crop, and a mixture of 100lbs. of acid phosphate, 300lbs. of cotton seed meal, and 65lbs. of muriate of potash, or 30lbs. of kainit to the acre should be applied before planting the pea nuts. A dressing of 25 bushels of lime to the acre should be given every three or four years. We are satisfied that if such a system as we suggest be followed, it will result in a much heavier average yield of nuts, and the fertility of the land will be maintained and enhanced ”

I understand that the ordinary “ground nut” as at present grown in Natal takes about six months to ripen its crop, and leaves the pods or nuts scattered at some distance from the stem, but there is another variety which I think originated in America, which ripens its crop in three or four months, and bears the pods much closer to the stem, thus saving considerable labour in harvesting the crop, which is, perhaps, the most expensive part of the work. Of course a light sandy soil is necessary for the growth of the plant, and if the nuts can be shipped clean and without any adhesion of soil to the shell a higher price is obtainable for them than can be got from the oil crushers.

Coffea. sp.—Several years ago we received from Mr. R. Benningfield plants of an indigenous coffee plant from the East Coast; these plants have flowered and borne fruit, and appear to be *Coffea zanguebarica* or very near to it; both the leaves and also the berries of these plants are smaller than those of the ordinary cultivated coffee plant, and the berries have a rather peculiar odour. I am told, however, that the berries are used by Europeans as ordinary coffee is used. We have also a plant

of a variety of coffee known as "Maragogipe," and which has been said to be immune from the coffee-leaf disease (*Hemileia vastatrix*), or nearly so. Our plant, however, is badly infected with the fungus, and its leaves in the season are covered with its spores. A few feet only from this plant the East Coast species is growing, and, so far, is quite free from the fungus, though I have several times in favourable weather tried to inoculate it with the spores of the fungus, but so far without effect, and I have little hesitation in saying that if the place of the plant had been filled by a plant of the ordinary cultivated coffee it would long ago have been thoroughly infected without any assistance from myself or the head gardener. Under these circumstances it has occurred to me that a trial should be made of grafting the ordinary coffee plant upon stocks of the East Coast species, and also when opportunity occurs of attempting to raise a hybrid between the two species, and I hope during the present season the experiment may be tried. We have reared a few of the East Coast species from seed grown here, and some of them have been handed to the Director of Agriculture for trial at the Experiment Station beyond Maritzburg.

Andropogon saccharatus, Roxburgh. "Broom Corn."—I am not aware whether or not this plant has had a fair trial in this colony, and as the demand for brooms and brushes in South Africa must now be very large, it would seem to be worth a trial. One person to whom I applied for information told me that some years ago he obtained seed of the plant locally, that the plants grew fairly well, but that the soil was poor, and the "broom" short, stiff and worthless, and it seems to me probable that the seed that he obtained was not of the best variety, and also that the soil on which he grew the plants was not suitable. As this crop appears to be one especially suitable for small farmers, I have written to America to obtain seeds of the best variety, and if I succeed in getting them the plants will be tried here. The following notes on this matter were read at a meeting of the Antigua Agricultural and Commercial Society, February 6th, 1903, by Mr. W. M. Sands, and published in the "Agricultural News of West Indies," April 25th. I omit part of the notes, which are more of local than general interest:—

"The so-called 'Broom Corn' is a millet closely allied to Guinea corn (*Sorghum vulgare*). In fact, up to the flowering stage, it is difficult to distinguish one from the other. Seed of American broom corn was obtained from Messrs. Peter Henderson and Co., of New York, and sown on October 11th, 1902, in rows four feet apart, at a distance of two feet from hole to hole in the rows. The plants made strong and healthy growth, and were free from insect attack. Had the weather been favourable

better results would probably have been obtained by sowing in September. On October 31st the seedlings were thinned out, leaving only about half a dozen of the strongest plants to each hole. The plot was kept carefully weeded, and the corn started to flower early in the following December. The first brush was cut on December 16th, and two other cuttings were subsequently made, one on December 20th, and the other on December 29th, making three cuttings in all. It was found that the whole crop, from the time of sowing to harvesting, required only about eleven weeks. This is an important consideration.

“With regard to cutting and harvesting the brush, care must be taken to reap it at the right time. This occurs when the anthers, or, as they are popularly termed, the blossoms fall off, and before seed is formed. If the seed is allowed to form, the brush, when cured, will be hard and brittle; but, on the contrary, if cut at the right stage it will be tough and elastic. A good deal also depends on the colour of the brush. The best brush is of a light green colour when cured. In order to obtain this colour the stalks when cut must be carefully dried in a shed or store-room. If they are allowed to dry in the sun they turn brown, and are of much less value.

In favourable weather the brush takes three or four days to cure. It is then cleaned. This process consists in removing the hulls and immature seeds by putting the heads of brush through a toothed piece of board nailed to a bench. Where broom-making is carried out on a large scale special separating machines are used. These machines, or rather the part which could not be made locally, could readily be imported at, I understand, a low cost.

Any soil on which Guinea corn thrives would probably be suitable for broom corn. There are several varieties of broom corn, most of which have been improved by selection in order to obtain a heavy yield and a long straight brush of good quality.

The trial plot ($\frac{1}{10}$ acre), harvested at end of last year, gave just over 50 lbs. of cured and scraped brush. The average yield in the United States is reported to be from 500 to 600 lbs. of brush to the acre. . . . The actual manufacture of brooms and brushes can easily be learned. . . . The industry specially commends itself to peasant proprietors who, with a little practice, would soon be able to manufacture the brooms for themselves. I have shown the locally-made specimens to a merchant here, who informs me that he would be willing to purchase a fair quantity of brooms like the samples for retail purposes.

Dessicated Bananas.—In a late issue of the *Tropical Agriculturist* I find a letter to the Editor as follows:—

“As I know you are interested in all industries connected with Ceylon, I am sending you a sample of semi-dessicated bananas or plantains, sent to me from home, which the sender informs me is usually supplied from the West Indies, and which is used in large quantities by bakers for fancy cakes instead of, or along with orange peel. As there appears to me to be an opening for business with home in this stuff, I write to ask if you know of any house out here that deal in it, or if it has ever been tried.”

Another correspondent writes in reply and concludes by saying:—

“I have sun-dried ripe plantains sliced in two, and they both keep well and are as tasty as figs, or they may be stewed. Pity there is not more enterprise in our midst.”

Many years ago when engaged in the manufacture of arrowroot I tried to dry bananas in the sun, but failed with all the varieties that I experimented with except the plantain, so-called here, and with this I succeeded very well. The outer skin was removed, and the fruit cut lengthways into halves, which were then laid upon the zinc or calico trays which I used for drying the arrowroot; the trays were then placed in the sun, and taken in at night. From recollection I think that it took about three days to dry them sufficiently, and they were turned two or three times during the process of drying. The worst annoyance that we had was the large number of small flies which made their appearance, and considerably damaged the fruit, so that we were compelled to cover the trays with fine net to exclude them. When sufficiently dry the fruit was placed in wide mouthed glass bottles, and kept sound for a considerable time. The flavour resembled that of dried figs, and they were much relished by all who tasted them. They were, however, liable after some time to be attacked by insects in the same way as dried figs, and probably by the same species of insect. It would be interesting to know whether better results could not be obtained by the use of the “dessicator,” as I feel sure that there would be a demand for the product locally if it were obtainable at a reasonable cost.

Medicinal Plants. Moschosma Riparia.—In my last year's Report it was stated that this plant “has very powerful medicinal action in controlling epidemic influenza and some forms of enteric,” and that about 7lbs. of the dried leaves of the plant had been collected, a portion of which had been sent to Colonel M'Cormack at the request of the authorities at the War Office,

the remainder to a medical man in England, who was the first applicant, and for whom I had already promised to procure it. From the War Office I have heard nothing, but the person to whom I also sent some of the plant says :—

“I duly received the box of *Moschosma riparia* you so kindly sent me. It contained nearly 7lbs. of the plant. I sent a pound to each of the fever hospitals (6), with a copy of your remarks, and asked that they would use it in some cases of dysentery or enteric, and let me know results. They acknowledged receipt of the parcels, but I have not heard any further. I have seldom cases of this fever. I have made a fluid extract, and in two cases was successful in staying the diarrhœa and abdominal tenderness. If I get any further reports from the hospitals I will write to you.”

This letter is dated April 28th, and since then I have heard no more of the matter. Of the other plants mentioned in the Report I have received no further information.

TOBACCO.—I have several times imported small quantities of seed of different varieties of this plant at the request of growers, and some of the varieties seem to have done well. A year or two ago I was specially asked to import seed of the “Latakia,” and since that time I have been again asked to do so. I wrote to the Director of Kew Gardens on the matter, and he replied that the excellence of this tobacco did not depend on the variety grown, but on the mode of cultivation and of manufacture, and as I have met with an article extracted from the *Agricultural Gazette of N.S. Wales*, I take over a part of it as it will no doubt be interesting to some of our tobacco growers :—

“The cultivation of ‘Abou-Riha’ tobacco is the same as that of other qualities of tobacco in this country, only that the young plants are taken from the nursery ground and planted very close to one another—four or five inches are left between each two plants—and they are not watered, except at the time of planting and once or twice afterwards, according to the dryness and strength of the soil, so that the stalk remains thin and the leaf small but thick. After picking, the green tobacco is taken to rooms without ventilation or sunlight, where it is hung from the roof by thread. After thus hanging in rows at some distance from each other, the smoking is begun. The smoking is done by burning in the middle of the room the wood called ‘Elozr,’ a resinous and scented wood only found in the Ausaruje Mountains. The doors are shut to let the leaves absorb the smoke and acquire the black or blackish colour and the scent of the ‘Elozr.’ This smoking continues till the month of May. When the tobacco is ready it is taken down, lightly sprinkled with water, and heaped up to undergo a first and in-

sufficient fermentation. Afterwards it was treated again to complete the fermentation before packing for export. The tobaccos from the district of Darious in the Ausaruje Mountains are the best, because the smoking is done entirely with the 'Elozr' wood, whereas the tobaccos from other parts are smoked with a mixture of other woods, and are, therefore, in less demand. The Consul-General adds that he is endeavouring to have the 'Elozr' wood identified botanically. *Thyraz officinalis* or 'El-Hanz' is also used; it may be the same as 'Elozr'."

Ischaemum angustifolium. "Bhabar grass."—Some years ago we received a packet of seeds of this grass from India, and two plants reared from it were placed in the Garden. It is a perennial and forms large dense clumps, and I was somewhat at a loss to know to what purpose it could be applied, except, perhaps, as bedding for horses, since from its appearance it does not seem at all like a suitable fodder plant, but in the Annual Report of the Government Gardens and Parks at Mysore I find the following:—

"Bhabar grass.—This valuable grass, which affords the best indigenous material for paper making, and is very largely used for that purpose in Northern India, takes kindly to the climate of Mysore. It is readily propagated, both from seed and division of roots, and the Department is now in a position to raise any number of seedlings, should they be required, within a few months time. Capital invested in such an industry can hardly fail to succeed, as the amount of official paper consumed in the country is enormous."

This grass would appear likely to succeed well here, and could be rapidly propagated if desired. It forms very dense clumps, and in length of leaves exceeds the measurement given in the "Flora of British India." It is perennial, but does not seem to propagate itself rapidly by seeds, but each clump would yield a large number of plants.

GINGER (*Zingiber officinale*).—I have frequently been asked for information as to the growth of "Ginger," and as to the manner in which the rhizomes are prepared for market, and I therefore take the following article from a late number of the *Pharmaceutical Journal*, it originally appeared in the *Journ. d'Agricult.*, Trop. 2,204.

CULTIVATION AND PREPARATION OF GINGER.

BY G. SANDES.

The soil intended for planting with ginger should be well tilled and carefully weeded. This should be done before plant-

ing, for if such weeding be performed while the plant is growing, water may come in contact with the rhizomes and cause them to rot. After planting, the soil is covered with banana fibre and farmyard manure. In dry situations irrigation must be resorted to, to ensure the requisite amount of moisture ; in damp situations the soil must be carefully drained, for stagnant water is fatal to successful culture, the ginger under such circumstances being attacked by black rot, and the rhizomes acquire a bad colour and flavour. Commercial ginger consists solely of the rhizome, which must not be confused with the true root. The most esteemed ginger is that which has these rhizomes in the form of straight "fingers" regularly developed. This well-formed growth can only be obtained in soil which has previously been well worked. The harvest takes place as soon as the stems of the plant turn white. If left after this period the rhizomes throw up aerial stems, and become tough and fibrous. The rhizomes must be lifted by a single thrust of a fork, so as to dig up the entire piece, all breaking and bruising being carefully avoided ; this alone requires much practice to effect with precision. All adherent soil is at once carefully removed, together with the fibrous roots ; if these be allowed to dry on the pieces of ginger they cannot afterwards be obtained white, and are liable to become mouldy. They are then at once thrown into water and peeled. This peeling must be carefully conducted, only the epidermis being removed, since the cells immediately beneath it are richest in essential oil and resin. This operation is generally conducted with a narrow blade sharp-pointed knife, but some expert peelers use only the fingers. As soon as they are peeled the rhizomes are thrown into water, which should be frequently removed if the ginger is to be of the best colour. The pieces peeled during the day are left in the water during the following night. Some planters add lime juice to this maceration water, in order to obtain a whiter ginger, but the project thus treated is more subject to attacks of mould than that treated with water alone. Citric acid or vinegar, might with advantage be substituted for lime juice. Another method is to throw the unpeeled ginger into boiling water ; but the result is not so satisfactory as that obtained by cold maceration ; although subsequent peeling is easier, this method is not employed in Jamaica. If boiling be prolonged the ginger becomes dark in colour, and when dried forms the so-called black ginger. When the ginger, after drying, is not perfectly white, it is sometimes coated with chalk ; sulphurous acid or bleaching powder are also sometimes used to bleach the product, but such chemical treatment is not to be recommended. After washing, the ginger is dried in the sun. On the large scale this is done in a "barbacue," a paved and cemented surface slightly convex, situated so as to obtain

the maximum exposure to the solar rays. Small planters use a drying hurdle, formed of pieces of wood placed side by side and covered with banana or palm leaves. The ginger should be carefully turned over during the process of drying at least once daily. Six or eight days are generally required for the process, during which the ginger loses about 20 per cent. of its weight. Good ginger still retains 7 to 12 per cent. of moisture, as shown by drying at 100 C., but in badly dried specimens this may amount to 25 per cent. In some seasons this sun-drying cannot be carried out, and the whole crop is, therefore, lost in consequence of attacks of mould. Attempts have been made to dry ginger without peeling it, but the product is black and worthless. The same ill-success has attended the use of a desiccator, such as is used for fruit in North America. In China a totally different method of procedure is adopted. The ginger is rasped, so that it is obtained in the form of a powder, which is then dried and used as a condiment.

Another account is given in the "Proceedings and Journal of the Agricultural and Horticultural Society of India," for 1902, as follows:—

Ginger; the Cultivation and Preparing of.—The following information is taken from Long's "Jamaica":—"Ginger is propagated by the smaller pieces, prongs, or protuberances of the root, each of which throws up two different stems; the first bears the leaves, and rises to the height sometimes of three feet, but its usual growth seldom exceeds 18 inches. It thrives best in a rich cool soil, and therefore, what has been recently cleared from wood is well adapted to the culture of it, more especially as ginger is supposed to be a great impoverisher of land. In such a soil it grows so luxuriantly that a large spreading root will weigh about a pound. It is, however, remarked, that what is produced from a clayey, tenacious soil shrinks less in scalding, while such as is raised in richer, free, black mould would lose considerably in that operation. The land intended for cultivation is first well cleaned with the hoe, then slightly trenched, and planted about the month of March or April. It attains its full height and flowers from August to September, and fades about the close of the year. When the stalk is entirely withered the roots are in a proper state for digging. This is generally performed in the month of January and February. After being dug they are picked, cleansed, and gradually seethed, or scalded in boiling water; they are then spread out and exposed every day to the sun till sufficiently dried, and after being divided into parcels of 100 lbs. each they are packed in bags for the market; this is called black ginger. The manner of scalding the roots is as follows:—A large pot or copper is fixed in the field, or some convenient place, which

is kept full of boiling water; the picked ginger, being divided into small parcels, is laid in baskets, and plunged alternately in the water, where it is suffered to stay for the space of 10 or 15 minutes. It is then spread on a platform for drying, but care is taken during the process to change the water so soon as it becomes much impregnated with the juices of the roots. The white sort differs but little from the black roots; the white is never scalded, but, instead of this process, they are picked, scraped, and washed one at a time, and then dried; all which requires too much pains and time for any real advantage to be gained in the properties, though being made more agreeable to the eye, the price of the white is much higher in the market. When the root is intended for a sugar-preserve, it is dug while tender and full of juice—the stems at this time rarely exceed 5 or 6 inches in height; the root is carefully picked, washed, and afterwards scalded, till it is sufficiently tender; it is then put into cold water, peeled and scraped gradually. This operation may last three or four days, during which it is commonly kept in water, which is frequently changed, as well for cleanliness as to extract more of its native acrimony. After this preparation it is laid in unglazed jars and covered with a thin syrup, which in two or three days is shifted and a richer put in. This is sometimes removed for a third or a fourth, but more than three are seldom requisite. The shifted syrups are not lost, for in Jamaica they are diluted with water and fermented into a pleasant liquor, called ‘cool drink,’ with some mixture of the ‘Chaw-stick’ (*Gouania dominicensis*), *Lignum vitæ* (*Guaiacum officinale*), and sugar.”

In the *Agricultural News* of Barbados I find the following:—

“Mr. A. J. Jordan, the Agricultural Instructor in Montserrat, has supplied the following information with regard to an experiment in Ginger cultivation in that island:—The plot at the Grove Experiment Station, which had an area of one-fifth of an acre, was reaped on March 3rd, and gave a yield of rhizomes (roots) at the rate of 14,307 lb. per acre. The land was spaded and the sets planted in April, 1903. After planting a mulch of three tons of pen manure was applied. Six weedings were given—two in May, one in June, two in July, and one in September. The total cost was as follows:—

Spading land	£0	6	7
Planting	0	2	1½
Spreading manure	0	0	10
Eight tons of pen manure	0	10	0
Weeding	0	8	10
Digging, weighing, storing	0	14	4
Total	£2	2	8½

or £10 13s. 6d. per acre. The weight of Ginger used as sets was 248 $\frac{1}{4}$ lbs.

HEIGHT OF TREES. — As it will be interesting to many persons to know something as to the rate of growth of the trees in the Gardens, I give a list of a number of them with their height and circumference of trunk at 4 feet from the ground, and so far as possible I have given the date of planting, and I regret that I have not been able to do this in all cases. From reports of former Curators I learn that certain trees were planted in certain years, but in very few cases have I been able to say that the trees now standing are those that were originally planted, as many plants of the same species have been imported or raised from seed here, twice or even more, but in all cases where I have been able to ascertain with certainty the date of planting it is given in the list. Since 1882 a list has been kept of all trees and shrubs planted, and the blocks in which they have been placed, and all deaths are duly posted at the close of each year. Where no date is given the tree was certainly planted previous to the year 1882, and many of them long before that time.

The soil of the Garden is a red sand; in the higher portion of the ground the subsoil is a red clay, commonly known here as "antheap;" in the lower portion of the ground the soil is a poor white sand for several feet below the surface.

Almost the whole of the ground was originally covered with bush, and some of it has been in cultivation for 50 years, and without manure of any kind having been supplied except to the small flower beds.

Name of Tree.	Circumference		Height in feet.	When Planted.
	of stem. ft.	in.		
<i>Acacia retinodes</i> , Sch.	...	0 11	10	1894
„ <i>saligna</i> , Wend	...	2 9	20	„
<i>Albizia procera</i> , Bth.	...	3 7	35	1885
<i>Apodytes dimidiata</i> , E.M.	..	2 1	30	?
<i>Araucaria Bidwillii</i> , Hk.	...	7 0	60	1867
„ <i>Cookii</i> , R. Br.	...	6 10	104	„
„ <i>Cunninghamii</i> , Ait	...	5 6	90	„
„ <i>excelsa</i> , R. Br.	...	3 9	80	„
„ <i>Rulei</i> , F. V. M.	...	2 3	36	1868
<i>Artocarpus integrifolia</i> , L. F.	4	0	50	?
<i>Barringtonia acutangula</i> , Gaertn	3	0	25	?
<i>Callitris robusta</i> , R. Br.	...	1 0	17	1892
„ <i>verrucosa</i> , R. Br.	...	1 4	30	„
<i>Calodendron capense</i> , Tho.	...	3 5	35	?
<i>Calophyllum inophyllum</i> , L.	1	0	25	?
<i>Cassia fistula</i> , Linn	...	1 6	20	?

<i>Cassia florida</i> , Vahl ...	...	3	8	60	1884
<i>Cedrela odorata</i> , Linn ...	...	6	8	66	1869
„ <i>Toona</i> , Roxb ...	...	3	1	30	1886
<i>Celtis australis</i> , Linn ...	...	2	0	18	1894
<i>Chaetachme aristata</i> , Pl. ...	...	5	6	44	?
<i>Cinnamomum camphora</i> , Nees		3	5	40	?
<i>Cupressus funebris</i> , Endl. ...	...	3	3	30	?
„ <i>sempervirens</i> , Linn		3	10	70	?
„ <i>torulosa</i> , Don ...	...	3	8	35	?
<i>Dammara alba</i>, ...	...	3	3	75	?
„ <i>australis</i> , Lam ...	...	5	0	80	?
<i>Ehretia acuminata</i> , Br. ...	...	1	10	15	1894
<i>Ekebergia Meyeri</i> , Presl ...	...	3	9	35	?
<i>Elaeocarpus grandis</i> , F.v.M.		3	1	40	?
<i>Eriodendron anfractuosum</i> , D.C.		3	0	25	?
<i>Eucalyptus acmenoides</i> , Sch		3	4	52	?
„ <i>cornuta</i> , Labill ...	...	6	0	70	?
„ <i>leucoxydon</i> , F.v.M.		5	6	80	?
„ <i>tereticornis</i> , Sm.		5	10	80	?
„ <i>viminalis</i> , Labill		5	8	84	?
<i>Excoecaria sebifera</i> , F.v.M. ...	...	2	4	20	1894
<i>Frenela australis</i> , Hook ...	...	5	3	40	?
„ <i>rhombocidea</i> , Endl. ...	...	1	0	20	1892
<i>Grevillea robusta</i> , A. Cunn ...	...	8	10	70	?
<i>Guaiacum officinale</i> , Linn ...	...	0	11	15	?
<i>Heretiera Fomes</i> , Buch & Ham		—	—	5	1894
„ <i>macrophylla</i> , Wall		—	—	8	„
<i>Hymenaea courbaril</i> , Linn ...	...	3	6	66	1867
<i>Jacaranda mimosaeifolia</i> , D. Don		5	6	40	1885
<i>Juniperus Bermudiana</i> , L ...	...	6	0	53	?
„ <i>oblongata</i> , London		2	0	21	?
„ <i>virginiana</i> , Linn ...	...	3	10	40	?
<i>Lagerstroemia regina</i> , Roxb. ...	...	1	10	20	1892
<i>Liquidambar styraciflua</i> , L. ...	...	1	8	20	1894
<i>Lysiloma sabicu</i> , Bth. ...	...	—	—	18	1892
<i>Macadamia ternifolia</i> , F.v.M.		2	1	25	?
<i>Mangifera indica</i> , Linn ...	...	4	6	56	?
<i>Melaleuca genistifolia</i> , Sm. ...	...	1	0	20	1894
<i>Melia azadirachta</i> , Linn ...	...	1	5	20	1886
<i>Millettia caffra</i> , Meisn ...	...	2	4	25	?
<i>Mimusops obovata</i> , Sond ...	...	4	0	30	?
<i>Owenia acidula</i> , F.v.M. ...	...	2	5	25	?
<i>Phyllanthus emblica</i> , Linn ...	...	4	6	40	?
<i>Pinus Benthiana</i> , Hort ...	...	5	8	50	?
„ <i>Halepensis</i> , Ait ...	...	3	3	30	?
„ <i>maritima</i> ? ...	...	4	0	25	?
„ <i>palustris</i> , Miller ...	...	2	3	25	?
„ <i>sinensis</i> , Lam ...	...	2	11	30	1887

Platymiscium polystachyum, Bth	2	4	50	?
Podocarpus pungens, Van Houtte	1	11	25	?
„ Thunbergii, Hook	1	0	12	?
Quercus incana, Roxb	...	3	6	50
Santalum album, Linn	...	4	0	35
Stenocarpus salignus, R. Br.	1	6	20	1885
„ sinuatus, Endl	...	1	8	25
Sterculia acerifolia, Hemsly	1	8	20	1894
Swietenia mahogani Linn	...	1	11	25
<i>Tamarindus indica</i> , Linn	...	4	0	57
Tectonia Hamiltoniana, Wall	1	6	25	1883
Terminalia arjuna, W. & A.	1	0	17	?
„ catappa, Linn	...	4	0	40
Thuia gigantea, Nutt	...	1	10	22
Toddalia lanceolata, Lam	...	3	7	33
Tristania conferta, R. Br	...	3	4	50
Zizyphus mucronata, Willd	...	7	3	40

Those trees whose names are printed in italics have more than one stem, the height and circumference given being that of the largest, where the circumference is not given, the plants are shrubs branched from the base.

Only one change has been made in the European staff during the year—Mr. Smith left at his own wish, and has, I believe, joined his brother in business; his place was taken by Mr. F. Anderson, who is still with us. Mr. Wylie still continues to take charge of the Sales Department, Nursery, and Garden work generally, and my special thanks are due to him for his valuable services, as also to all the other Europeans for their steady work continued for longer hours than is usual amongst most other workmen.

To the Committee I again offer my hearty thanks for their kindly co-operation and assistance in all matters connected with the work at the Garden whenever it has come before them.

I have the honour to be,

Gentlemen,

Your obedient servant,

J. MEDLEY WOOD

The following publications have been received:—

REPORTS ON BOTANIC GARDENS AND OTHER INSTITUTIONS.

- Albany Museum, Grahamstown.
 Agricultural Experiment Station, University of California.
 Agricultural Department, Zanzibar.
 Board of Agriculture, Bermuda.
 Board of Agriculture and Public Gardens, Jamaica.
 Botanical and Afforestation Department, Hong Kong.
 Royal Botanic Gardens, Calcutta.
 Botanic Gardens, British Guiana.
 " " Ceylon.
 " " Grenada.
 " " Gold Coast.
 " " Missouri.
 " " Mysore.
 " " Nilgiris.
 " " New South Wales.
 " " Saharunpur.
 " " St. Lucia.
 " " Straits Settlements.
 " " Zurich.
 Central Experiment Farm, Canada.
 Crop Report, Nova Scotia.
 Department of Agriculture, German East Africa.
 Field Columbian Museum, Chicago, U.S. America.
 Government Cinchona Factory and Plantation, Bengal.
 Secretary for Agriculture, Nova Scotia.
 Smithsonian Institute, Washington, U.S. America.

From Director Botanic Gardens, Straights Settlements.

Bulletins, Vol. I, Nos. 8, 9, 10, 11, 12, 14.

" Vol. II., Nos. 1, 2.

From Director Royal Gardens, Ceylon.

Revision of the Podostemmaceae of Ceylon.

Morphology and Ecology of the Podostemmaceae of Ceylon.

From J. H. Maiden, F.L.S., Director Botanic Gardens, Sydney,
 N.S. Wales.

On *Eucalyptus Stuartiana*.

" " *Behriana*.

" " *pulverulenta*.

" " *linearis*.

" " *Gunnii*.

" " *Baueriana*, Schauer.

" " *calycogona*, Turcz.

" " *tereticornis*, Sm. and *E. rostrata*, Schlech.

List of plants collected in vicinity of Jenolan caves by
W. F. Blakeley and J. C. Wiburd.

Notes on Eucalyptus from the point of view of the
bee-keeper, compiled from Forest Reports, by J. H.
Maiden, F.L.S.

Useful Australian Plants, Part III.

Some Australian Vegetable Fibres.

Records of Sydney Botanic Gardens.

Gums, Resins, and other vegetable exudations of Australia.

Critical Revision of the genus Eucalyptus, by J. H. Maiden
(2 parts).

Is Eucalyptus variable ?

On Eucalyptus bicolor, A. Cunn.

„ „ polyanthos.

From Director Imperial Botanic Gardens, St. Petersburg.

Acti Horti Petropolitani, Vol. XIX. ; XXI., Part 1.

From W. R. Guilfoyle, F.L.S., Director Botanic Gardens, Mel-
bourne.

Guide to Botanic Gardens, Melbourne.

Catalogue of specimens of fibre sent to the Exhibition at
Melbourne.

From Director Field Columbian Museum, Chicago.

Flora of the Island of St. Croix, by C. F. Millspaugh.

From Commissioner of Agriculture for West Indies.

Agricultural News, current Nos.

West Indian Bulletin, current Nos.

Report on Agricultural Work in Barbados, by J. P. de
Albuquerque.

Screw worm in Cattle in St. Lucia.

Hints on Onion Cultivation.

General Treatment of Fungoid Pests.

From Director Royal Gardens, Kew.

Bulletin Colonial Museum, Haarlem.

Report Board of Agriculture, Bermuda.

On Tea Culture in Assam.

Report on Cawnpore Experimental Farm.

Sugar-cane Crops in the Leeward Islands, Parts 1 and 2.

Seedling and other Canes at Barbados, 1901.

Guide to Colonial Museum, Haarlem.

Flora of Tropical Africa, Vol. IV., Parts 1, 2, 3.

From Director Botanic Gardens, Jamaica.

Bulletin, Vol. IX., Parts 4, 5, 6, 7, 8, 10, 11, 12.

Bulletin Agricultural Department, Vol. I., Parts 1, 2, 3.

From Dr. Saunders, Director Central Experiment Farm, Canada.

Clover as a Fertiliser.

Cereals and Root Crops.

Index to Reports and Bulletins.

From Agricultural and Horticultural Society of India.

Journal and Proceedings, current Nos.

From Agricultural and Horticultural Society of Madras.

Proceedings, current Nos.

From Agricultural Department, United States of America.

Observations on the Mosaic Disease of Tobacco, by A. F. Woods.

The Seeds of Rescue Grass and Chess, by F. H. Hillman.

Foreign Experiment Stations, by A. C. True.

Experiment Station Record, Vol. XIII., Nos. 9, 10, 11, 12;
Vol. XIV., Nos. 1, 3, 4.

Germination of Spores of *Agaricus*, by Margaret C. Ferguson.

Contributions to U.S. National Herbarium, Vol. V., No 4.

North American Species of *Spartina*, by E. D. Merrill.

Report of Investigation of "Johnson Grass," by C. R. Ball.

Monograph of North American Umbellifereae, by J. M. Coulter and J. N. Rose.

Plants used by the Indians of Mendocino County, California, by V. K. Chestnut.

The Foot-rot of Taro, by T. F. Sedgewick.

Year Book of Agricultural Department, 1901.

North American Species of *Leptochloa*, by S. Hitchcock.

From Secretary Congo Museum.

Illustrations de la Flore du Congo, Vol. I. p. 8.

From Agricultural Department Victoria, Australia.

Journal of Agriculture, Vol. I., Parts 6, 7, 8, 9.

From Prof. Dr. Zacharias.

Jahresberichte, 1901.

From Indiana Academy of Science.

Proceedings for 1901.

From University of California.

New Methods of Grafting and Budding Vines, by E. H. Twight.

Grasshoppers in California, by C. H. Woodworth.

The Californian Peach Tree Borer "

The Peach Worm, by Warren T. Clarke.

From Colonial Museum, Haarlem.

Bulletins Nos 27 and 28.

Verslag der Rumphius-Herdenking.

From F. Lamson Scribner.

Report on the Agricultural Soil of Union Province, Luzon,
by C. W. Dorsey.

Modern Rice Culture, by W. J. Bondreau.

From Prof. A. Engler, Imperial Gardens, Berlin.

Engler's botanische Jahrbucher, Vol. 29, Part 1.

From Prof. Dr. H. Schinz, Botanic Gardens, Zurich.

Monograph of Sebaea.

From Director Royal Botanic Gardens, Edinburgh.

Notes from Royal Botanic Gardens, Edinburgh.

From M. Gustavo Nederlein.

Resources Vegetales des Colonies Francaises.

From W. S. Lyon.

A Primer on the Cultivation of Sugar Cane.

Cacao Cultivation in the Philippines.

Insecticides for use in Hawaii

From J. A. Veitch.

The Veitchian Nurseries (Illustrated.)

From J. Burt Davy.

The Native Vegetation and Crops of the Colorado Delta,
by J. Burt Davy.

Citrus Fruit Culture, by J. W. Mills.

Lands of the Colorado Delta in the Salton Basin, by F. J. Snow, E. W. Hillgard, and G. W. Shaw.

From Revd. J. Buchanan.

Flora Capensis, Vol. VII.

From Burroughs, Wellcome and Co.

Constituents of Essential Oil of Rue.

Constituents of Commercial Chrysarobin.

Variations in the occurrence of Salicin and Saligrin in the different Willows and Poplar Barks.

Interaction of Ketones and Aldehydes with Acid Chlorides.

International Conference (Chemical.)

Chemistry of the Stem of *Derris Uliginosa*, Bth.

Anatomy of the Stem of *Derris Uliginosa*, Bth.

From G. G. Lloyd.

The Geastre. (Illustrated.)

Notes on the Amanitas of the Southern Appalachians.

Mycological Notes; Nos. 10, 11, 12, 13, 14.

From J. Macoun, M.A.

Catalogue of Canadian Plants: Lichens and Hepaticae.

From Prof. E. de Wildeman.

Etudes sur la Flore du Katanga. (Illustrated.)

From Col. H. H. Johnstone.

Transactions of Scottish Natural History Society.

Four Papers on the Flora of Mauritius, and Small Outlying Islands.

From Pharmaceutical Society of Great Britain.

Pharmaceutical Journal, current Nos.

Purchased.

Index Kewensis, Fasc II.; Journal of Mycology, 4 parts; Tropical Agriculturist; Gardeners' Chronicle; Indian Gardening; Botanical Magazine, 5 volumes.

BALANCE SHEET.

Receipts and Expenditure for the Year ending June 30, 1903.

	RECEIPTS.		EXPENDITURE.
Balance in Bank,	£656 10 0		£1,457 7 4
Sale of Plants, &c.,	2,756 1 1		533 3 7
Grant from Government, "Natal Plants,"	65 0 0		118 19 6
Grant from Darban Corporation, Subscriptions and Donations, ...	200 0 0 114 15 0		733 3 4
			4 11 6
			298 0 0
			£176 13 4
			35 3 6
			211 16 10
			435 4 0
			£3,792 6 1
			£3,792 6 1

Colonial Herbarium.

R E P O R T

FROM

~ JULY 1st, 1902, to JUNE 30th, 1903, ~

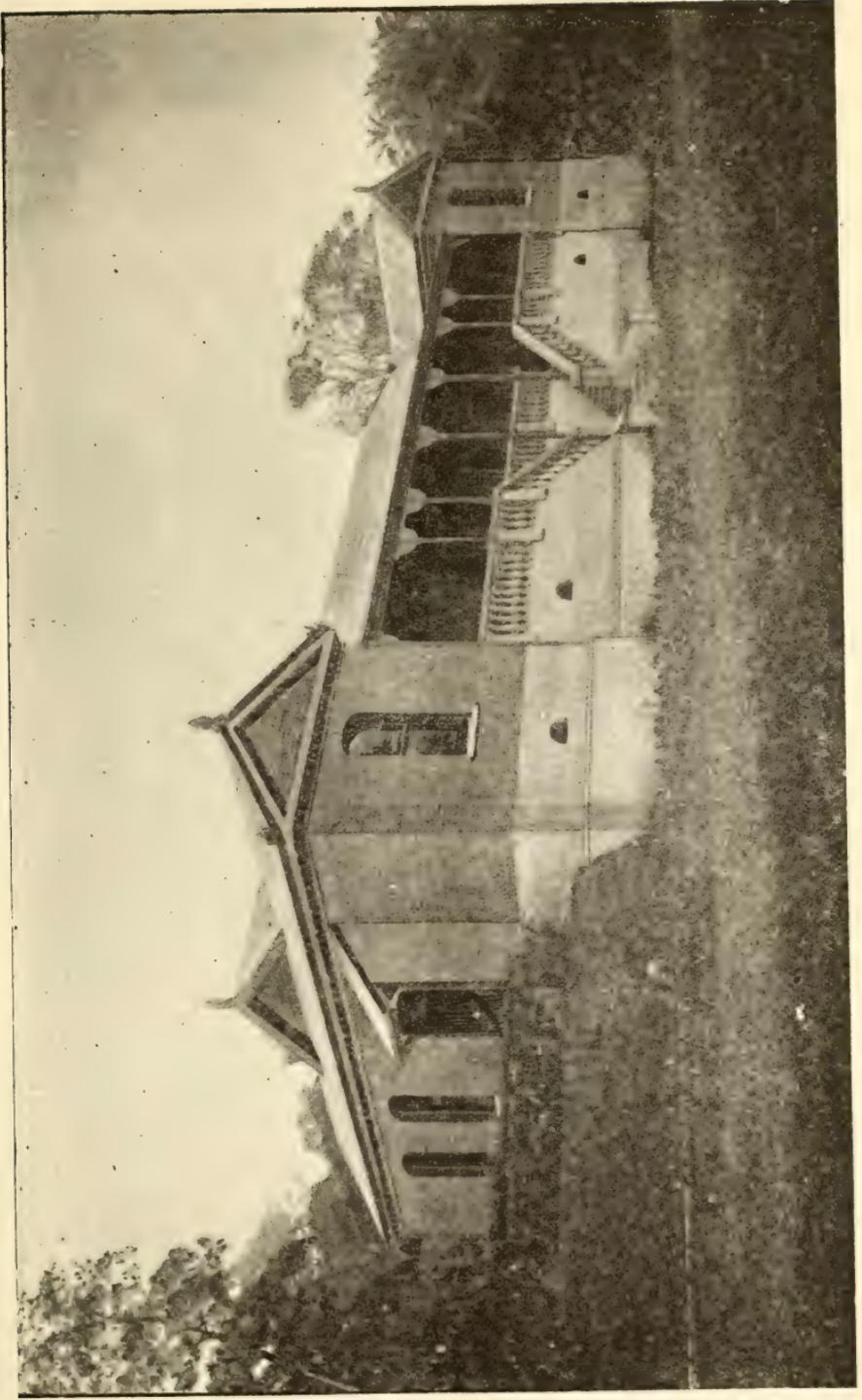
—BY—

J. MEDLEY WOOD, A. L. S.,

*Corresponding Member of the Pharmaceutical
Society of Great Britain,*

CURATOR OF BOTANIC GARDENS,

~ DURBAN. ~



COLONIAL HERBARIUM.



COLONIAL HERBARIUM.

During the early part of the year, which commenced on July 1st, 1902, we were busily employed in removing into the new building, fumigating the specimens, and arranging them in the cabinets, which necessarily occupied a considerable time, and as both my assistants have been away for several weeks on sick leave, progress has been much delayed; still, we have now got things into something like order, and are again going on steadily with the ordinary work.

The dried and mounted specimens have been increased from 27,963, as detailed in my last Report, to 28,879, of which 9,372 are South African, and 19,507 foreign. These specimens are contained in 41 cabinets, and are arranged in botanical sequence, so that any required specimen can be withdrawn for examination with facility.

We have received during the year specimens as under:—

M. E. Mouillfarine, Paris	...	...	...	125
G. L. Fisher, Canada	...	...	...	104
Colonel Johnstone, Netley	...	...	...	81
Royal Botanic Gardens, Calcutta	...	...	...	100
W. V. Fitzgerald, Australia	...	...	...	51
Botanic Gardens, Sydney	...	...	...	69
F. M. Reader, Australia	...	...	...	100

630

All of these, except such as were already in stock, and well represented in the Herbarium, have been poisoned, mounted, and sorted into the cabinets, together with a large number of indigenous species collected during the year in Natal and Zululand.

We have sent away, in exchange, specimens of indigenous plants as follows:—

M. E. Mouillfarine, Paris	...	...	...	100
G. L. Fisher, Canada	...	...	...	100
M. Miquel Lillo, Argentine Republic	...	...	...	100
L Rodway, Tasmania	...	...	...	100
Revd. A. C. Waghorne, Newfoundland	...	...	...	100
F. M. Reader, Australia	...	...	...	100
M. A. Deffers, Egypt	...	...	...	100
Royal Gardens, Kew, England	...	...	...	26
Colonel Johnstone, Netley	...	...	...	153
Prof. MacOwan, Cape Town	...	...	...	113

992

and a large number are on hand for distribution and exchange with correspondents. The specimens sent to Kew were for identification.

The drawings for "Natal Plants" have been proceeded with, but in consequence of pressure of other work, not very much has been done. The 3rd part of Vol. II., which is confined to grasses, has been finished for some time, and the MSS. and drawings have been handed to the printer and lithographer, but in consequence of scarcity of labour and strikes of the printers it has been much delayed. It will, I hope, be issued shortly. The artist is now at work at Part IV., which completes the volume. Of Volume IV., 20 plates and descriptions are finished, five more are required to complete the 1st Part, which will, I hope, be ready for the press in a few weeks time.

A large number of specimens have been examined and named for applicants during the year, and two gentlemen to whom assistance of this kind was given, each very kindly gave me a donation of £5 to the funds of the Herbarium. This money has been expended chiefly in binding books for the library, and there are still a few volumes requiring to be bound.

A fair number of specimens have been collected in the coast districts, both for the Herbarium and for distribution. I had one collecting trip to Van Reenen, obtaining in that locality many species that are not found near the coast. Mr. Wylie, on his trip with wagon to Zululand, also brought a large number of dried specimens, many of which are rare, and some of them new to us. Some of these will be sent to the Herbarium at Kew for comparison, the remainder either placed in the Herbarium or distributed to correspondents.

In my Report for the year 1900, I gave a list of additions to, and corrections of, the "Preliminary Catalogue of Natal Plants," published some years ago, being the seventh similar list published in my annual Reports. In my last two reports I did not continue these lists, hoping that I should be able to issue a more complete list than the one originally published, and which would contain keys to the orders and genera, but for various reasons the publication of that work is delayed, so that I now give another list of additions and corrections up to date as far as known to me.

A large number of these names are taken from the recently published parts of the "Flora Capensis," and specimens of many of them are not yet in the Herbarium. Some are taken from other publications and some are accidental omissions. I have thought it better to keep the grasses in a separate list. These names are taken almost entirely from Vol. III. of the "Flora Capensis." A large number of the plants, though credited to Natal, are not represented in the Herbarium.

ADDITIONS TO "PRELIMINARY CATALOGUE OF NATAL PLANTS."

<i>Acalypha angusta</i> , Sond	<i>Euphorbiaceæ</i>
<i>Adenocline serrata</i> , Turcz	"
<i>Adhatoda Duvernoia</i> , C. B. Clarke	<i>Acanthaceæ</i>
<i>Aloe Greenii</i> , Baker	<i>Liliaceæ</i>
<i>Argyrolobium longipes</i> , N. B. Brown	<i>Leguminosæ</i>
<i>Belmontia natalensis</i> , Schinz	<i>Gentianeæ</i>
<i>Berkheya bilabiata</i> , N. E. Brown	<i>Compositæ</i>
<i>Boscia caffra</i> , Lamk	<i>Capparidææ</i>
<i>Bouchea hederacea</i> , Sond	<i>Verbenaceæ</i>
<i>Bulbine natalensis</i> , Baker	<i>Liliaceæ</i>
" <i>nigra</i> , Schinz	"
<i>Celastrus cordata</i> , E. M.	<i>Celastrineæ</i>
<i>Chironia maxima</i> , Schoenh	<i>Gentianeæ</i>
<i>Convolvulus Bulleriana</i> , Rendl	<i>Convolvulaceæ</i>
<i>Crassula corymbulosa</i> , Link	<i>Crassulaceæ</i>
" <i>crenulata</i> , (L) Harv	"
" <i>heterotricha</i> , Schonland	"
" <i>multicava</i> , Lam	"
" <i>natalensis</i> , Schonland	"
" <i>orbicularis</i> , Linn	"
" <i>parvula</i> , E. & Z.	"
" <i>latispathulata</i> , Schonland	"
" <i>portulacacea</i> , Lam	"
" <i>sediflora</i> , E. & Z.	"
" <i>tenuicaulis</i> , Schonland	"
" <i>tenuifolia</i> , Schonland	"
" <i>Woodii</i> , "	"
<i>Crinum acaule</i> , Baker	<i>Amaryllidææ</i>
<i>Cryptostemma niveum</i> , Nichols	<i>Compositæ</i>
<i>Cussonia chartacea</i> , Schinz	<i>Araliaceæ</i>
<i>Dicliptera clinopoda</i> , Nees	<i>Acanthaceæ</i>
<i>Dicoma anomala</i> , Sond. var <i>microcephala</i>	<i>Compositæ</i>
<i>Disa saxicola</i> , Schlechter	<i>Orchidææ</i>
<i>Duranta Plumieri</i> , Jacq	<i>Verbenaceæ</i>
<i>Echinosperrum capense</i> , D.C.	<i>Amarantaceæ</i>
<i>Emex spinosa</i> , Campd	<i>Polygonaceæ</i>
<i>Encephalartos brachyphyllus</i> , Lehm	<i>Cycadaceæ</i>
<i>Eulophia chrysantha</i> , Schlechter	<i>Orchidææ</i>
" <i>flaccida</i> , "	"
<i>Euphorbia procumbens</i> , Mill	<i>Euphorbiaceæ</i>
<i>Gazania bilabiata</i> , N. E. Brown	<i>Compositæ</i>
<i>Geranium Bowkeri</i> , Harv	<i>Geraniceæ</i>
" <i>dispar</i> , N. E. Brown	"
<i>Habenaria Kranzliniana</i> , Schlechter	"
" <i>microrhynchum</i> , "	"
<i>Helichrysum retortoides</i> , N. E. Brown	<i>Compositæ</i>

<i>Hermannia betonicaefolia</i> , E. & Z.	Sterculiaceæ
„ <i>depressa</i> , N. E. Brown	„
„ <i>longifolia</i> , „	„
„ <i>malvaefolia</i> , Schinz	„
<i>Hibiscus physodes</i> , E.M.	„
<i>Huttonaea oreophila</i> , Schlechter	Orchideæ
<i>Indigofera arrecta</i> , Hochst	Leguminosæ
„ <i>rhytidocarpa</i> , Bth	„
<i>Ipomoea Gerrardiana</i> , Rendl	Convolvulaceæ
„ <i>Lambtoniana</i> , „	„
„ <i>sublucens</i> , „	„
<i>Isoglossa Woodii</i> , C. B. Clarke	Acanthaceæ
<i>Kniphofia Macowani</i> , Baker	Liliaceæ
„ <i>Schlechteri</i> , Schinz	„
<i>Lagenaria vulgaris</i> , Ser	Cucurbitaceæ
<i>Lantana camara</i> , L.	Verbenaceæ
<i>Leontonyx coloratus</i> , Cass	Compositæ
<i>Lochnera rosea</i> , Reich	Apocynæ
<i>Macowana glandulosa</i> , N. E. Brown	Compositæ
<i>Maesa rufescens</i> , A.D.C.	Myrsinæ
<i>Memecylon capense</i> , E. & Z.	Melastomaceæ
<i>Momordica cordifolia</i> , Sond.	Cucurbitaceæ
<i>Monechma bracteatum</i> , Hochst	Acanthaceæ
„ <i>fimbriatum</i> , C. B. Clarke	„
<i>Mystroxyloen euclæforme</i> , E & Z.	Celastrinæ
<i>Odina caffra</i> , Hook	Anacardiaceæ
<i>Oldenlandia Bojeri</i> , Hiern	Rubiaceæ
„ <i>macrophylla</i> , D.C.	„
<i>Parietaria pilosa</i> , Willd	Urticaceæ
<i>Pavonia columella</i> , Cav	Malvaceæ
„ <i>Dregei</i> , Gurke	„
<i>Peliostomum calycinum</i> , N. E. Brown	Scrophularinæ
<i>Phayloopsis parviflora</i> , Willd	Acanthaceæ
<i>Plectronia locuples</i> , K. Schum	Rubiaceæ
„ <i>ventosa</i> , L.	„
<i>Potamogeton pusillum</i> , L.	Naiadaceæ
<i>Pouzolzia procridioides</i> , Win	Urticaceæ
<i>Priva leptostachya</i> , Juss	Verbenaceæ
<i>Pupalia lappacea</i> , Moq	Amarantaceæ
<i>Salacia alternifolia</i> , Hook	Celastrinæ
<i>Schrebera latialata</i> , Gilg	Oleaceæ
<i>Sebæa pentandra</i> , E.M.	Gentianæ
<i>Seidelia mercurialis</i> , Baker	Euphorbiaceæ
<i>Senecio subcoriaceus</i> , Schlechter	Compositæ
„ <i>viscidus</i> , N. E. Brown	„
<i>Sphærothylax algiformis</i> , Birch	Podostemaceæ
<i>Stobæa echinopodea</i> , D.C.	Compositæ
<i>Struthiola</i> sp. (M. S. Evans 761))	Thymeliaceæ

<i>Thesium angulosum</i> , A.D.C.	<i>Santalaceæ</i>
<i>Tristicha</i> sp.	<i>Podostemaceæ</i>
<i>Trochomeria pectinata</i> , Bth & Hook	<i>Cucurbitaceæ</i>
<i>Ursinia alpina</i> , N. E. Brown	<i>Compositæ</i>
<i>Vanueria lasiantha</i> , Sond.	<i>Rubiaceæ</i>
" <i>latifolia</i> "	"
<i>Vernonia collina</i> , Schlechter	<i>Compositæ</i>
<i>Vitis cussonioides</i> , Schinz	<i>Ampelidææ</i>
<i>Walafrida densiflora</i> , Rolfe	<i>Selagineæ</i>
" <i>Nachtigali</i> , Rolfe	"

The following alterations have been made :—

<i>Crassula quadrifida</i> , Baker	is	<i>C. multicaeva</i> , Lam
" (Wood 977—1875)	are	<i>C. stachyera</i> , E. & Z.
" (Wood 1876)	is	<i>C. natalensis</i> , Schonland
" (Wood 1840)	is	<i>C. tenuifolia</i> , "
" (Wood 3052 a)	is	<i>C. latispathulata</i> , "
<i>Cyclonema triphyllum</i> , Harv	is	<i>Clerodendron iriphyllum</i> , H. H. Pearson
<i>Cyrtopera pappilosa</i> , Rolfe	is	<i>Eulophia chrysantha</i> , Schlechter
<i>Duvernoia adhatodiodes</i> , E.M.	is	<i>Adhatoda Duvernoia</i> , C. B. Clarke
<i>Plectronia</i> (Wood 1808)	is	<i>P. locuples</i> , K. Schum
<i>Selago densiflora</i> , Rolfe	is	<i>Walafrida densiflora</i> , Rolfe
<i>Thesium</i> (Wood 262)	is	<i>T. angulare</i> , A.D.C.

Owing to the publication of Vol. VII. of the "Flora Capensis," I am able to record the following additions to the list of indigenous grasses, and also to note some alterations, and to delete some names which were wrongly inserted in the previous list.

ADDITIONS.

<i>Agrostis bergiana</i> , Trin	{	<i>Ischaemum fasciculatum</i> , Brogn.
" <i>natalensis</i> , Stapf.	{	<i>var arcuatum</i> , Hack
<i>Andropogon auctus</i> , Stapf.	{	<i>Leptocarydion vulpiastrum</i> ,
" <i>Buchanani</i> , Stapf.	{	Stapf.
" <i>contortus</i> , Linn		<i>Lolium temulentum</i> , Linn
" <i>dichroos</i> , Steud.		<i>Melica decumbens</i> , Thb.
" <i>distachyus</i> , Linn		<i>Microchloa altera</i> , Stapf. <i>var</i>
" <i>Dregeanus</i> , Nees		<i>Nelsoni</i> , Stapf.
" <i>filipendulus</i> , Hochst		<i>Panicum arrectum</i> , Hack.
" <i>halepensis</i> , Brot. <i>var</i>	"	<i>brizanthum</i> , Hochst
" <i>effusus</i> , Stapf.	"	<i>chusqueoides</i> , Hack.
" <i>hirtiflorus</i> , Kunth	"	<i>coloratum</i> , Linn
" <i>hirtus</i> , Linn	"	<i>Crus-pavonis</i> , Nees <i>v.</i>
" <i>nardus</i> , L. <i>var mar-</i>	"	<i>rostratum</i> , Stapf.
" <i>ginatus</i> , Hack	"	<i>curvatum</i> , Linn

<i>Andropogon plurinodis</i> , Stapf.	„	<i>deustum</i> , Thb.
„ <i>rufus</i> , Kunth	„	<i>Ecklonii</i> , Nees
„ <i>schirensis</i> , Hochst	„	<i>filiculme</i> , Hack.
<i>v. angustifolia</i>	„	<i>helopus</i> , Trin. var <i>glabrescens</i> , K. Schum
<i>Anthoxanthum Ecklonii</i> , Stapf.	„	<i>hymenochilum</i> , Nees
<i>Aristida aequiglumis</i> , Hack	„	<i>Isachne</i> , Roth.
„ <i>angustata</i> , Stapf.	„	<i>laticomum</i> , Nees
„ <i>congesta</i> , Roem and Schult	„	<i>Meyerianum</i> , Nees
„ <i>junciformis</i> , Trin.	„	<i>miliare</i> , Lam
„ <i>sciurus</i> , Stapf.	„	<i>perlaxum</i> , Stapf.
„ <i>vestita</i> , Thb.	„	<i>proliferum</i> , Lam v.
<i>Arundinella Ecklonii</i> , Stapf.	„	<i>longijubatum</i> , Stapf.
<i>Azonopus semialatus</i> , Hook v.	„	<i>pyramidale</i> , Lam.
<i>Ecklonii</i> , Stapf.	„	<i>serratum</i> , Spreng
<i>Bromus leptoclados</i> , Nees.	„	<i>trichopus</i> , Hochst
„ <i>natalensis</i> , Stapf.	„	<i>zizanioides</i> , H. B. K.
„ <i>unioloides</i> , H. B. K.	<i>Paspalum distichum</i> , Linn	
<i>Chloris pycnothrix</i> , Trin.	„	<i>scrobiculatum</i> , Linn
„ <i>virgata</i> , Swartz	<i>Pennisetum natalense</i> , Stapf.	
<i>Crossotropis grandiglumis</i> ,	„	<i>sphacelatum</i> , Dur.
Rendle		& Schinz.
<i>Dactyloctenium ægyptiacum</i> ,	„	<i>Thunbergii</i> , Kunth
Willd	„	<i>typhoideum</i> , Rich.
<i>Digitaria debilis</i> , Willd	„	<i>unisetum</i> , Benth.
„ <i>diagonalis</i> , Stapf.	<i>Pentaschistis natalensis</i> , Stapf.	
„ <i>diversinervis</i> , Stapf.	<i>Phalaris minor</i> , Retz.	
„ <i>eriantha</i> , Steud.	<i>Poa annua</i> , Linn	
„ <i>flaccida</i> , Stapf.	„	<i>binata</i> , Nees
„ <i>horizontalis</i> , Willd	„	<i>trivialis</i> , Linn
„ <i>monodactyla</i> , Stapf.	<i>Pogonarthria fulcata</i> , Rendle	
„ <i>sanguinalis</i> , Scop.	<i>Polypogon monspeliensis</i> , Desf.	
„ <i>setifolia</i> , Stapf.	<i>Potamophila prehensilis</i> , Benth	
„ <i>tenuiflora</i> , Beauv.	<i>Setaria aurea</i> , A. Braun	
„ <i>ternata</i> , Stapf.	„	<i>Gerrardi</i> , Stapf.
„ <i>tricholænoïdes</i> , Stapf.	„	<i>lindenberghiana</i> , Stapf.
<i>Diplachne biflora</i> , Hack.	„	<i>nigrirostris</i> , Durand
„ <i>fusca</i> , Beauv.	„	<i>perennis</i> , Hack
„ <i>triflora</i> , Hack.	„	<i>rigida</i> , Stapf.
<i>Ehrharta calycina</i> , Sm.	„	<i>sulcata</i> , Raddi
„ <i>erecta</i> , Lam.	<i>Sporobolus festivus</i> , Hochst	
„ <i>ramosa</i> , Thb.	„	<i>indicus</i> , R. Br.
<i>Eragrostis caesia</i> , Stapf.	„	<i>pungens</i> , Kunth
„ <i>chapelieri</i> , Nees	„	<i>Rehmanni</i> , Hack
„ <i>gangetica</i> , Steud.	„	<i>subtilis</i> , Kunth
„ <i>gummiflua</i> , Nees	<i>Stiburus alopecuroides</i> , Stapf.	
„ <i>heteromera</i> , Stapf.	<i>Stipa Dregeana</i> , Steud.	
„ <i>hornemanniana</i> , Nees	<i>Tragus racemosus</i> , All	

<i>Eragrostis Lehmanniana</i> , Nees	<i>Tricholæna glabra</i> , Stapf.
„ <i>major</i> , Host	„ <i>rosea</i> , Nees
„ <i>namaquensis</i> , Nees	„ <i>setifolia</i> , Stapf.
„ <i>nebulosa</i> , Stapf.	<i>Trichopteryx simplea</i> , Hack.
„ <i>patentissima</i> , Hack.	<i>Triraphis Rehmanni</i> , Hack.
„ <i>plana</i> , Nees	<i>Urelytrum squarrosum</i> , Hack.
<i>Erianthus Soryhum</i> , Nees	<i>Vulpia Myuros</i> , Gmel.
<i>Festuca scabra</i> , Vahl.	

The following alterations in nomenclature have been made :

<i>Agrostis Neesii</i> , Trin	is <i>Agrostis lachnantha</i> , Nees
<i>Ehrharta punicea</i> , Sm.	is <i>Ehrharta erecta</i> , Lam.
<i>Eragrostis Thunbergiana</i> , Steud.	is <i>Eragrostis curvula</i> , Nees
<i>Hemarthria compressa</i> , R. Br.	is <i>Rottbællia compressa</i> , L. var <i>fasciculata</i> .
<i>Eriochrysis pallida</i> , Munro	is <i>Saccharum Munroanum</i> , Hack
<i>Lappago racemosa</i> , Honck	is <i>Tragus racemosus</i> , All
<i>Lasiagrostis elongata</i> , Nees	is <i>Stipa Dregeana</i> , Steud. v. <i>elongata</i> , Stapf.
<i>Leptochloa grandiglumis</i> , Nees	is <i>Crossotropis grandiglumis</i> , Rendle
<i>Maltebrunnia prehensilis</i> , Nees	is <i>Potamaphila prehensilis</i> , Bth.
<i>Melica dendroides</i> , Lehm	is <i>Melica decumbens</i> , Thb.
<i>Miscanthus capensis</i> , And	is <i>Erianthus capensis</i> , Nees
<i>Oplismenus crus-galli</i> , Bauer	is <i>Panicum crus-galli</i> , Linn
<i>Panicum commutatum</i> , Nees	is <i>Digitaria eriantha</i> , Steud.
„ <i>diagonale</i> , Nees	is „ <i>diagonalis</i> , Stapf.
„ <i>erucæforme</i> , Sibth	is <i>Panicum Isachne</i> , Roth
„ <i>lindenbergianum</i> , Nees	is <i>Setaria lindenbergianum</i> , Stapf.
„ <i>monodactylon</i> , Nees	is <i>Digitaria monodactyla</i> , Stapf.
„ <i>phaeocarpum</i> , Nees var	is <i>Digitaria ternata</i> , Stapf.
„ <i>sanguinale</i> , Linn	is „ <i>sanguinalis</i> , Scop.
„ <i>semialatum</i> , R. Br.	is <i>Axonopus semialatus</i> , Hk. var <i>Ecklonii</i> , Stapf.
„ <i>unguiculatum</i> , Trin	is <i>Panicum deustum</i> , Thb.
„ <i>Zeyheri</i> , Nees	is <i>Digitaria horizontalis</i> , Willd
<i>Paspalum dissectum</i> , Nees	is <i>Paspalum scrobiculatum</i> , Linn
„ <i>brevifolium</i> , Fluegge	is <i>Digitaria tenuiflora</i> , Beauv
<i>Spodiopogon arcuatus</i> , Nees	is <i>Ischænum fasciculatum</i> , Brogn, var <i>arcuatum</i> , Hack.
<i>Sporobolus capensis</i> , Kunth	is <i>Sporobolus indicus</i> , R. Br.
<i>Stenotaphrum complanatum</i> , Schltr	is <i>Stenotaphrum glabrum</i> , Trin
<i>Trachypogon capensis</i> , Nees	is <i>Trachypogon polymorphus</i> , Hack var. <i>capensis</i> , Hack
<i>Tragus occidentalis</i> , Nees	is <i>Tragus major</i> , Stapf.
<i>Tricholæna tousa</i> , Nees	is <i>Tricholæna rosea</i> , Nees
<i>Trisetum longifolium</i> , Nees	is <i>Avenastrum caffrum</i> , Stapf.

The following species have been removed from the list of plants indigenous to Natal:—

<i>Aristida curvata</i> , Linn	<i>Panicum arenarium</i> , Brot.
<i>Agrostis antarctica</i> , Hk.	„ <i>excurrens</i> , Trin
<i>Arundinella nepalensis</i> , Trin.	„ <i>longiglume</i> , Munro
„ <i>rigida</i> , Nees	„ <i>madagascariense</i> , Spreng.
<i>Bromus asper</i> , Linn	
<i>Chloris radiata</i> , Sw.	<i>Poa abyssinica</i> :
<i>Diplachne Buchanani</i> , Munro	<i>Setaria dasyura</i> , Willd
<i>Eragrostis elongata</i> , Jacq.	„ <i>penicillata</i> , Nees
„ <i>interrupta</i> , Beauv.	„ <i>viridis</i> :
„ <i>macilentata</i> , Steud.	<i>Trisetum lachnanthum</i> , Hochst.
„ <i>minor</i> , Hochst.	<i>Uralepis alopecuroides</i> :
<i>Heteropogon hirtus</i> ?	„ <i>integra</i> , Munro
<i>Microchloa Buchanani</i> , Munro	

The following specimens have been received from the Museum Department:—

From the Durban Museum.

Australian Woods—

<i>Acacia melanoxylon</i> , R. Br.	Blackwood
<i>Banksia integrifolia</i> , Linn	Honeysuckle
<i>Callitris columellaris</i> , F. v. Muell	Cypress Pine
<i>Castanospermum australe</i> , A. Cunn	Black Bean
<i>Casuarina torulosa</i> , Ait	Forest Oak
<i>Duboisia myoporoides</i> , R. Br.	Corkwood
<i>Dysoxylon Fraserianum</i> , Bth	Rosewood
„ <i>Muelleri</i> , Bth	Red Bean
<i>Eucalyptus acmenoides</i> , Schaur	White Mahogany
„ <i>longifolia</i> , Lk. & Otto	Woollybutt
„ <i>maculata</i> , Hk.	Spotted Gum
„ <i>microcorys</i> , F. v. M.	Tallow Wood
„ <i>paniculata</i> , Sm.	Grey Ironbark
„ <i>pilularis</i> , Sm.	Blackbutt
„ <i>propinqua</i> ?	Grey Gum
„ <i>saligna</i> , Sm.	Blue Gum
„ <i>siderophloia</i> , Bth	Red Ironbark
„ <i>tereticornis</i> , Sm.	Red Gum
<i>Fagus Moorei</i> , F. v. M.	Negrohead Beech
<i>Grevillea robusta</i> , A. Cunn	Silky Oak
?	She Beech
Grey Ironbark after 20 years' service	
„ „ after 40 years' service on Circular Quay.	
<i>Frenela robusta</i> , A. Cunn	White or Common Pine
<i>Melia composita</i> ?	White Cedar
?	Red Cedar

<i>Stenocarpus salignus</i> , R.Br.	Beefwood
<i>Tristania laurina</i> , R. Br.	Water Gum
<i>Villaresia Moorei</i> , F. v. M.	White Maple
<i>Weinmannia rubifolia</i> , Bth	Corkwood
?	Colonial Pine
<i>Dammara</i> , sp.	With Gum in situ
<i>Polyporus</i> , sp.	

From Mr. G. Thorncroft, Barberton.

Two specimens of rubber from *Landolphia* as offered for sale by natives at Barberton.

From Mr. H. Swanfield, Qudeni, Zululand.

<i>Strychnos Henningsii</i> , Gilg.	Wood	<i>um-Caloti</i>
"	"	"
"	Bark as used	"

From Botanic Gardens, Sydney, New South Wales.

Specimens of Wood—

<i>Alphitonia excelsa</i> , Reiss	Red Ash
<i>Alstonia constricta</i> , F. v. M.	?
<i>Angophora intermedia</i> , D.C.	Apple Tree
<i>Araucaria Cunninghamii</i> , Ait	Moreton Bay Pine
<i>Briedelia exaltata</i> , F. v. M.	Brush Ironbark
<i>Callitris verrucosa</i> , R. Br.	Murray or White Pine
<i>Castanospermum australe</i> , A. Cunn	Black Bean
<i>Casuarina torulosa</i> , Ait	Forest Oak
<i>Cearela australis</i> , F. v. M.	Red Cedar
<i>Ceratopetalum apetalum</i> , Don	Coachwood
<i>Dysoxylon Fraserianum</i> , Bth,	Rosewood
" <i>Muelleri</i> , Bth.	Red Bean
<i>Elaeocarpus grandis</i> , F. v. M.	Blue Pig
<i>Eucalyptus capitellata</i> , Sm.	Stringybark
" <i>hemiphloia</i> , F. v. M.	Grey Box
" <i>maculata</i> , Hk.	Spotted Gum
" <i>microcorys</i> , F. v. M.	Tallow Wood
" <i>paniculata</i> , Sm.	White or Grey Ironbark
" <i>pilularis</i> , Sm.	Black Butt
" <i>propinqua</i> , M. & D.	Grey Gum
" <i>resinifera</i> , Sm.	Red mahogany
" <i>saligna</i> , Sm.	Sydney Blue Gum
" <i>siderophloia</i> , Bth	Broad-leaved Ironbark
<i>Flindersia australis</i> , R. Br.	Flindosa or Cudgerie
" <i>Bennettiana</i> , F. v. M.	Native Teak
<i>Gmelina Leichardtii</i> , F. v. M.	White Beech
<i>Grevillea robusta</i> , A. Cunn	Silky Oak
<i>Litsaea reticulata</i> , ?	Brown Beech
<i>Melia composita</i> , Willd	White Cedar

<i>Piper Novae-Hollandiae</i> , Miq.	Stems only
<i>Stenocarpus salignus</i> , R. Br.	Red Silky Oak or Beef wood
<i>Syncarpia laurifolia</i> , Ten	Turpentine Wood
<i>Tristania conferta</i> , R. Br.	Brush Box
<i>Xanthorrhoea hastilis</i> , R. Br.	Grass Gum Tree
<i>Xanthoxylum brachyanthum</i> , F. v. M.	Bark only

FRUITS.

<i>Acacia falcata</i> , Willd	<i>Acacia myrtifolia</i> , Willd
<i>Acronychia Bauerii</i> , Schott	<i>Banksia armata</i> , R. Br.
<i>Banksia ericifolia</i> , Linn	„ <i>latifolia</i> , R. Br.
„ <i>serrata</i> , Linn	„ <i>spinulosa</i> , Sm.
<i>Elaeocarpus grandis</i> , F. v. M.	<i>Elaeodendron australe</i> , Vent
<i>Eriostemon hispidulus</i> , Sieb	<i>Eriostemon lanceolatus</i> , Gaertn
„ <i>Umbellatus</i> , Turcz	<i>Eucalyptus acmenoides</i> , Schaur.
<i>Eucalyptus cambagei</i> , M. & D.	„ <i>capitellata</i> , Sm.
„ <i>crebra</i> , F. v. M.	„ <i>goniocalyx</i> , F. v. M.
„ <i>haemastoma</i> , Sm.	„ <i>obliqua</i> , l'Her
„ <i>piperita</i> , Sm.	„ <i>pilularis</i> , Sm.
„ <i>punctata</i> , D.C.	„ <i>robusta</i> , Sm.
„ <i>rostrata</i> , Schlech	„ <i>stricta</i> , Sieb
„ <i>tereticormis</i> , Sm.	<i>Hakea acicularis</i> , Knight
<i>Hakea gibbosa</i> , Cav.	„ <i>pugioniformis</i> , Cav.
<i>Hibbertia volubilis</i> , Andr.	<i>Hovea linearis</i> , R. Br.
<i>Macrozamia Fawcettii</i> , C. Moore	<i>Persoonia pinifolia</i> , R. Br.
<i>Pultenoea daphnoides</i> , Wendl	<i>Sterculia diversifolia</i> , G. Don
<i>Vitis hypoglauca</i> , F. v. M.	<i>Xylomelum pyriforme</i> , Knight
<i>Xanthorrhoea hastilis</i> , R. Br.	

In addition to the specimens enumerated above there are a number of seed-vessels, wood specimens, etc., which require arranging and placing in the Museum-room as soon as time can be spared for the purpose. To contain these specimens an upright glass-fronted cupboard was obtained out of the Government Grant for furniture, but as this exhausted the Grant the Botanic Society have consented to provide a large showcase for the centre of the room. As soon as this is received an effort will be made to get the specimens arranged and catalogued.

It will be noticed that nearly all the Museum specimens are foreign, not indigenous, and have been acquired by exchange, but my wish is to obtain as many specimens of our indigenous woods, seeds, seed-vessels, barks, gums, or other vegetable productions as possible, especially such as are used medicinally or

otherwise by natives or colonists, and I therefore take this opportunity of again asking for contributions of this kind, which will be duly and thankfully acknowledged.

Parcels of specimens, if within the limit of size and weight, will pass free through the post if addressed O.H.M.S., Curator Colonial Herbarium, Botanic Gardens, Berea, Durban. Printed direction labels will be sent on application.

A photo of the Herbarium accompanies this Report, and I am glad to say that the building is commodious, and, better than that, it is, from its height above the ground and the asphalt platform on which it is built, quite dry, so that the specimens are not in danger of damage from damp.

My two assistants are still with me, and their time is fully occupied, as in addition to the ordinary work of mounting and arranging the specimens, the drawings and dissections for "Natal Plants" occupies the whole of their spare time, Miss Lauth still keeping to the grasses, and Miss Franks, with some assistance from Miss Lauth, to the miscellaneous plants.

J. MEDLEY WOOD.

