



HAND-GUIDE

TO THE

BOTANIC GARDENS BUTENZORG

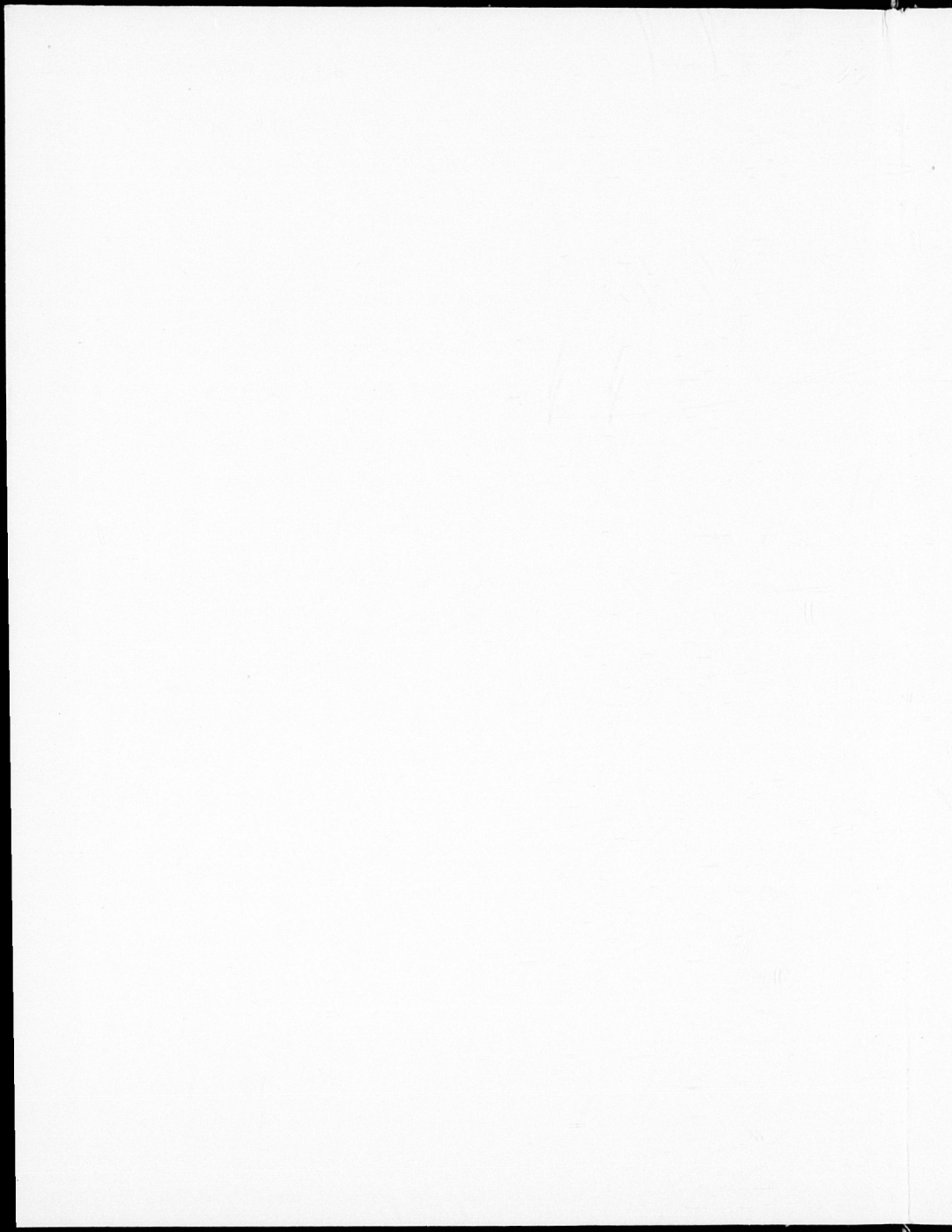
With a Plan

PUBLISHED UNDER SUPERVISION OF THE DIRECTOR



BATAVIA
G. KOLFF & Co
1897





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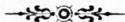
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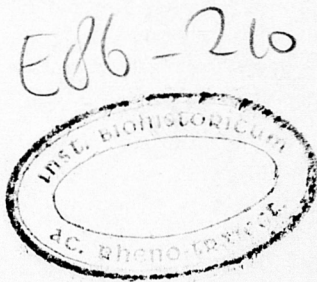
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INTRODUCTORY.

The Botanic Gardens at Buitenzorg were established in April 1817, at the suggestion of REINWARDT, who was afterwards a Professor at the Leiden University. During REINWARDT'S stay in Netherlands-India there was no special director for the new botanical establishment; he took over the superintendence himself. On his departure from Java Dr. C. L. BLUME was appointed the first Director of the Buitenzorg gardens.

BLUME proved to have remarkable abilities for natural science; in a short time he got great renown as a botanist and so the gardens seemed to have under his direction, a very satisfactory prospect. But, after a stay of four years, BLUME was obliged to go home on account of his bad health; there was no director appointed as his successor, the gardens were left in charge of a curator.

The curator JAMES HOOPER, an able man, who came originally from the royal Kew-gardens, returned to Europe in 1830. A young gardener just arrived with a new Governor-General was selected as his successor.

The young man's name was J. E. TEYSMANN; devoid of the slightest scientific notions, lacking even ordinary general instruction, and having had but a very superficial training in horticulture, he seemed rather an unqualified person for filling up the post of curator.

Happily the Buitenzorg gardens belong to the insti-

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tutions which have good luck. TEYSMANN turned out to be a most energetic man, with a bright intelligence and greatly gifted for natural science.

By self-training and hard work, guided by a clear insight and supported by a keen aptitude for organization, he became, in fact, a second founder of the gardens, with which his name will always be inseparably connected.

In the course of his career as a curator TEYSMANN was assisted by two very clever men, J. K. HASSKARL, and S. BINNENDYK. HASSKARL, afterwards famous as a botanist, was the man who suggested a new plan for the gardens, in order to have all the plants, even the trees and shrubs arranged after the natural system. That idea, once grasped by TEYSMANN, was pushed by him, often under great difficulties, with fierce energy. The arrangement after the natural system, in some parts already sixty years old, constitutes now one of the prominent features of the Buitenzorg botanic garden. It makes it still comparatively easy to study the plants and especially to compare the species belonging to the same natural order, though the number of species under cultivation is now some 10.000, covering an area of 145 acres.

BINNENDYK was appointed assistant-curator in 1850. His services were of great value, not only because he was a very able horticulturist, but also because he had had a fair training in systematic botany at the Leiden botanic garden. And so as TEYSMANN resigned (in 1869) BINNENDYK was, of course, selected as his successor.

In the mean time the whole institution was re-organized, on a plan drawn up long before by TEYSMANN.

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There was to be a Director again, and it was Dr. R. H. C. C. SCHEFFER who in 1868 was appointed the second Director of the Buitenzorg gardens.

Having made thorough studies in botany under MIQUEL's direction at the Utrecht University Dr. SCHEFFER although young, was well prepared for the post.

Devoting as much of his time as possible to research and original scientific work, he had the good idea of starting, in 1875, the *Annales du Jardin Botanique de Buitenzorg*, a scientific periodical still existing.

Beyond all other things the Buitenzorg establishment is most indebted to the late Dr. SCHEFFER, for establishing, in 1876, a special garden, on a large scale, (an area of more than 180 acres) for agricultural and experimental purposes. He added also an agricultural school to this experimental garden. This school lasted only a few years.

Without time to go on furlough to Europe to restore his health, Dr. SCHEFFER died, of overwork, in the beginning of 1880, only 36 years old.

Dr. TREUB was selected as his successor. This gentleman, who has been in charge since 1880, still continues the extensions begun in 1876 by Dr. SCHEFFER.

The institution still called „s Lands Plantentuin" consists of the following nine Divisions.

Division I. Herbarium and Museum.

„ II. Botanical Laboratories.

„ III. Agricultural and experimental garden (181 acres) with Laboratory for agricultural chemistry.

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Division IV. Pharmacological Laboratory.

" V. Botanic Garden (145 acres) and Mountain Garden (77 acres and 700 acres of virgin forest) with Laboratory.

" VI. Office, Library and Photographic Laboratory.

" VII. Forest flora collections.

" VIII. Laboratory for the study of Deli Tobacco ¹⁾.

" IX. Experimental station for coffee ²⁾.

The second division has special laboratory accommodations for 8 foreign visitors, the institution acting, since 1885, also as an international botanical station that has already been visited by a great number of foreign naturalists.

It is hardly necessary to point out that the name of „Botanic Garden,” does not give a fair idea of what the „Buitenzorg Institution” actually is. What is now the 5th division, corresponds, in general lines, with what was „the Botanic Gardens” till 1876.

In Dutch the difficulty arising from a no longer appropriate name, is partially avoided by keeping for the whole institution the original name „’s Lands Plantentuin” and giving the name „Botanische tuin” ²⁾ to the Botanic Garden belonging to the 5th division.

The Buitenzorg institution is working now with a staff of 27 Europeans, and over 200 natives.

1) The divisions VIII and IX work at the expenses of private committees of persons interested in the culture of Deli tobacco and of coffee.

2) The Dutch word „tuin” means gardens.

A WALK THROUGH THE BOTANIC GARDEN.

For visitors with only a limited time at their disposal it will be well to state here, that in following the dotted line on the map, the walk will occupy the better part of two hours.

The best time for a visit are the early morning hours, the climate of Buitenzorg being rather hot in the day and very apt to be rainy in the late afternoon. Of course one visit to the garden will prove insufficient for those who desire to study details of the plants pointed out in this guide.

On entering the garden by the main road near to the Director's office one has in front the well-known beautiful avenue „Canarium lane” planted by TEYSMANN. It derives its name from the magnificent trees belonging to the genus *Canarium*.

Quite near to the entrance one meets with one of the most remarkable plants of the garden, the *Entada monostachya* (or *E. scandens*) which is planted in quarter I B. It is a very large climber, whose branches spread over a large number of trees.

Passing by the *Pterocarpus* trees (I A) and turning to the right, we see in II A a small monument consecrated to the memory of the wife of the English Governor RAFFLES.

The *Pterocarpus* trees which we passed are remarkable for their red useful juice, called „angsana” or „kino”.

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The fine red-flowering tree in part I. I, near to the road is the *Amherstia nobilis*, a native of British-India.

Nearly opposite we meet with a peculiar tree with umbellate branches which by means of a *red* label is indicated as the *Jagera speciosa*.

This red label is used to announce that here an exception occurs to the general plan after which the trees are arranged in the garden, viz after the natural system. (Some of the more important natural orders are named on the map). Now the red label indicates that the plant thus marked does not belong here, but that for some reason or other it was not deemed wise to transplant it to the quarter where it ought to stand.

The normal way of labelling in the garden is thus: generally every species is represented by two specimens, only one of which is labelled though they have both a same number. — On the corners of the different quarters wooden poles are placed, the numbers and letters of which correspond with the numbers and letters on the map.

In the corner of quarter I L there is a fine specimen of the *Schizolobium excelsum*. This tree has been introduced from tropical America and is finding its way here both as a lane tree and as a „shade-tree”. The word „shade-tree” means here a tree planted on purpose to produce the necessary shadow in such plantations as require this for their crops.

In the center of quarter I L a tree worthy of special notice can be seen. It is the *Pithecolobium saman*, known in its fatherland Trinidad as the „rain-tree”. Between the quarters I L and I turning a little way into the road to

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the right, we remark on the side of the road (in I C) the *Strychnos nux vomica*. Its fruits the „*semina strychni*” of the pharmacopeia contain the frightful poison strychnine. Returning to the main road and following it for some little distance we perceive at the corner of II K, the *Xanthophyllum excelsum*. The tree is remarkable for its almost mathematically regular development and more so for the fact that it belongs to a family which in temperate regions is represented only by herbaceous or at the most by shrubby plants, viz the order of the *Polygalaceae*. The native name of the tree is „*ki-endog*” which means egg-tree.

A highly interesting almost weird group of *Pandanaceae* is seen in II A, II D and II C. The peculiar aspect of these „Screw-pines” is caused by their numerous heavy aerial roots giving the impression of stilt-walking trees.

Opposite to these, in II E, some *Cycadeae* are found, mostly natives of Australia, not less remarkable, forming as they do the humble remnants of gigantic plants, in former geological periods widely spread over the earth's surface. In quarters II H, II I, II L, II M, and II N many Orchids may be seen, generally flowering in greater number than a first sight would make us suppose.

The Fernery (quarter II K) behind these Orchids contains many forms of interest.

The note-worthy collection of Palms begins in II F, containing some specimens of the *Areca catechu*, producing the *areca* or pinangnuts. These form one of the ingredients of the *sirih*, or *betel*, the masticatory used in great quantities throughout the East. In the same bed we can

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see, down the slope, the *Phytelephas macrocarpa*, the palm which affords the vegetable ivory. Descending in the neighbourhood of the pavilion to the lower parts of the garden, especially kept for the use of water- and marshplants, the visitor meets with a number of interesting plants. They grow partly in the water, partly on its banks as for instance *Nipa*, *Cyperus papyrus*, the papyrus-plant of the old Egyptians and the *Bruguiera's* belonging to the most typical tropical shoreplants generally known by the name of mangroves. In the water we perceive many species of *Nymphaea* f. i. the *N. Lotus* with white, pink and red flowers. This species unfolds its flowers in the evening, they remain open during the night and close again towards 11 A. M.; other species behave totally different, some blue species don't open before 9 A. M. and close them towards midday, another unfolds them only from 7 until 10 or 11 P. M.

Luxurious growth of some varieties of *Nelumbium speciosum* can here be observed, one has white, another pink flowers; the seeds of these plants were already known to the old Egyptians as a delicate morsel and to day are sold as such on the Javanese markets. Among the other plants growing on the banks, the following are worth mentioning viz: *Eichhornia crassipes*, *Sagittaria*, *Lasia*, *Acorus*, some *Cyperaceae* and some *Gramineae* as *Oryza sativa* (the rice) and *Hymenachne interruptum*, the pith of which is used generally by the natives by way of wicks.

On the border of the river some *Pisoniae* are found among which *P. sylvestris* the celebrated „*Widjojo Koesoema*”, whose flowers are used at the coronation of the

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Sultans of Soerakarta; and *P. excelsa* „*ki-tjaoe*,” the fruits of which are so sticky that small birds and numerous insects may be found glued to them.

Crossing the river by the small bridge in the neighbourhood, we come into new grounds, only laid out some five or six years ago. At the entrance there is a special part for shrubs and higher up is the quarter of the herbaceous plants, which recently has been considerably extended. Numerous beautiful, useful or botanically interesting plants may here be observed.

Keeping to the left of the long avenue planted with *Canarium commune* and following the pathway above the shrubgarden and the shed, we see to the right several species of *Musa* (banana's) and a little further on the *Compositae*.

On both sides of the road we see a quarter planted with Malvaceous plants, among which on the one side, the *Durio zibethinus* (doerian), *Lahia kutejensis* (the Borneo doerian), *Eriodendron anfractuosum* (Silk-cotton-tree), *Adansonia digitata* (the African Baobab) and the tall *Salmalia malabarica* („*kapok oetan*”) should be especially noticed, while on the other side we meet with the fine blooming species of *Hibiscus* („*Kembang sepatoe*”). Continuing our walk in this direction we enter again, after having passed the main bridge, into the old part of the garden.

The other part of the new grounds is entirely planted with climbers and different kinds of trees serving as support or as „shade-trees” to them.

Having gone across the bridge we return to bed V F where we meet with some *Araucariae*, the well known

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Australian pines. For them however the Buitenzorg climate is too hot and finer specimens may be seen in the mountain garden of *Tjibodas*.

In the same bed is found the botanically interesting *Gnetum Gnemon* (*Manienjo*), which is more generally known to all lovers of a good ricetable on account of its edible fruits, and also magnificent specimens of *Dammara alba*. In V H several graceful Palms may be seen, among which the genera *Attalea* and *Phoenix* are specially conspicuous; the last genus contains the date-palms.

Passing between plots V K and V H the visitor sees near to the point of V K the curious tall somewhat bended „*Niboeng-Palm*” (*Oncosperma filamentosum*). To the right one distinguishes lower down the red Pinang (*Cyrtostachys Rendah*), highly valued as an ornamental plant, and next to it the *Zalacca*’s whose fruits under the name of „*Salak*” are known to most inhabitants of Java.

Straight on we meet on the right bank of the road in V H, with fine specimens of *Latania*, and on the left with a large number of graceful palms belonging to different genera. Opposite to the main road, when one descends from the left, one sees in quarter V J tall, straight palms with their column-like stems; these are the *Oreodoxae* or royal palms of Cuba. On the side of the waterlet from the garden into the river *Tjiliwong* may be noted two specimens of one of the most rapid growing species of palms, the *Metroxylon elatum*, which especially during youth are truly magnificent.

To the left one has in quarters V B and V C the

Myrtaceous plants to which belong the clove-tree, the *Guava's* and the species of *Eucalyptus*. Opposite to these we remark on the bank of the road in V L, several varieties of coconuts and nearer to the river the *Elaeis guineensis* or oil-palm, yielding the african palm oil, and species of *Metroxylon*, palms containing in their pith the „sago”.

Opposite to the two small houses (bathes belonging to Government-house) the well known *Lontarpalm* — also called *Palmirah-palm* — (*Borassus flabelliformis*) has been planted on the border of the river.

Near to the lontarpalm on the other side of the *Eugeissonia tristis*, we see the famous „coco-de-mer” (*Lodoicea Seychellarum*) producing the largest of all palmfruits. The powerful plant carries leafstalks almost as hard as iron. The same may be said of the wood of the *Eusideroxylon Zwageri* („ironwood”) which is found a little way above and to the right of the lontar palm.

On the left side of the road in beds VI B, VII A, VI E, and also opposite on the riverbank several species of the genera *Mangifera* and *Canarium* may be seen. The first affords the delicious „mango's” the latter the canariumkernels („Java almonds”) whose taste reminds us of almonds.

The stony part forming plot VII E., on which now nothing but *Cactae* can be found was formerly planted with high trees. More than twenty years ago this part with all trees on it has been carried away by the highly swollen waters of the river. Such a flood is called „bandjir” throughout the Archipelago.

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Continuing our walk between beds VII F and VII G, we notice on both sides many species of wild fig-trees belonging to the genus *Ficus* or closely related to it. One of them, near the point of VII G, is very conspicuous, it is the *Ficus Riedelii*. The small figs are here bundle-like united to brown-black almost globular bodies which form pendulate, longly stalked raisins.

Further on in quarter VIII B, still on the right of the road, we find some malayan oaks (*Quercus spec.*) well developed but not so fine as those in plot III L.

Observe in plot VIII G, the *Casuarinae*, resembling strikingly some *Conifers*, though they do not belong to them at all. The species of *Casuarina* are partly plants of the seashore, partly of the mountains in tropical and subtropical countries.

On the mountains they not unfrequently form uninterrupted forests, which remind us of the pinewoods of our northern homes. In the family of the *Laurinaceae* (plot IX D) we remark among others the Avocado-pear, the ironwood above mentioned and last not least, several species of *Cinnamomum*.

In the family of the *Euphorbiaceae* (quarters VIII T, VIII H, IX A, en IX C) the following are worthy of special notice: as ornamental *plants* the well-known species of *Codiaeum* (*Croton*; *malay*: „*poering*”) and species of *Acalypha*; the *Hura crepitans* from Surinam, formerly used as a remedy against lepra; the fruit-trees „*menteng*” and „*kapoentoeng*” belonging to the genus *Pierardia* and the *Manihot utilissima* (*ketella pohon*) which affords the sweet *cassava*, while its relation the *M. Glaziovii* from

Botanic Garden Buitenzorg.

Brasil produces the ceara-rubber, a well known article of trade.

Between beds VIII C and VIII D one ascends by a pathway paved with stones against erosion by the tropical showers.

Especially on the left, are again several species of *Ficus* and on the right, mostly trees belonging to the *Dipterocarp*-family, a large order described for the first time by BLUME (about 70 years ago) and based on plants derived from the Buitenzorg botanic gardens. This family contains among others the plants yielding the *Sumatra camphor* (*Dryobalanops aromatica*) and those which afford the *Tangkawang-fat*, (*Shorea stenoptera* and *Isoptera borneensis*) cultivated on a larger scale in the experimental garden.

From the top of the little hill on which the pavilion stands, a fine panorama may be seen; the range of mountains here visible, terminates at the right in the big „*Gedé*“. The word *Gedé* generally used in Buitenzorg is a collective for a number of tops and in this case rather irrelevant as the peak we see is the „*Pangerango*“.

The high trees near the pavilion are mostly species of the genus *Terminalia*, to which among others the „*katapan*“, with edible kernels, belongs.

Looking down on the right we frequently are attracted by graceful red or lilac flowers; they belong to species of *Lagerstroemia* called „*Boengoer*“ or „*Woengoe*“ by the natives.

Walking along the visitor sees on the right in front of Government-house the Governor-General's park, in which

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Walking along the visitor sees on the right in front of Government-house the Governor-General's park, in which

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a large number of deer are kept. On the left we are fascinated again by the range of hills above mentioned, which ends in a rather isolated coneshaped hill the „Goenoeng Pantjar”, a place where the famous „ant-plants”, well-known to botanists and others, may be found.

After having passed by some *Boueae* among which the *B. Gandaria* (malay: *Genderia*), we find ourselves surrounded by representatives of the genus *Garcinia*, of which the *G. mangostana* gives the excellent „Mango-steen.”

In the triangle labelled VI A, we find another „ironwood” viz the *Mesua ferrea*. Turning into a large road, we have just in front of us the order of *Sterculiaceae*, containing among others the *Cacao*, and the well-known *kolanut*, from Africa. A large number of the species of *Sterculia* has very conspicuous beautiful fruits whose orange-red, open carpels carry velvety black seeds.

On descending, tall trees are seen at some distance on the left bank of the road, these are species of *Elaeocarpus* easily recognised by the turning red of the old leaves, and classed with the European limetrees in the same order. On the same side of the road there are a little further on the *Bertholletia excelsa*, affording the *Paranuts*, some fine-flowered *Barringtoniae* and *Melaleucae* with white barks, peeling like paper, in the way of birchbark. The genus *Melaleuca* yields the „kajoe-poetih-oil”. ¹⁾

1) The name „kajoe-poetih” means: white wood.

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Before ascending again while rounding the point of IV H, one mostly sees in quarters V D and V E some shrubs who are in flower. It are species of the genera *Gardenia* and *Pavetta*, also cultivated in European hothouses and belonging with the genera *Coffea* and *Cinchona*, to the order of *Rubiaceae*.

On the nearest corner of V H, two specimens of *Santalum album* are planted, the tree yielding the fragrant „sandelwood”. Continuing straight on between IV G and IV H, we see on both sides species of *Anonaceae*, the order affording several tropical fruits as the „Sourop”, the „Bullock’s heart” and the „Custardapple”.

The tall trees behind IV G, on the border of IV F are mostly *Magnoliaceae*, belonging to the genera *Talauma* and *Michelia*, remarkable for their highly fragrant blossoms; so the famous „Tjampaka”-flowers come from a species of the genus *Michelia*. Proceeding a little further on our way we are struck by the presence of a tree which conspicuously carries its flowers and fruits on the trunk. This position of the flowers is by no means an exception in tropical countries. The tree in question is *Stelechocarpus Burahol*; its fruits are for peculiar reasons highly valued at the courts of Javanese princes.

Behind this tree *Wormiae* and *Dilleniaceae* have been planted, trees with fine leaves, flowers and fruits, members of the order of *Dilleniaceae*. The visitor has to turn now to the left and pass between IV D en IV G. On the left side of this small pathway, in IV G, we find a number of wild nutmeg trees and also the cultivated species *Myristica fragrans* called „pala” by

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the natives. Several species of this genus may also be found in IV H. Frequently a very agreeable odour meets us here, it is caused by *Myristica Horsfieldii* on the corner of IV G.

Quarters IV D and IV B on the right contain a number of important trees. Species of *Diospyros* to which we are indebted for several good things as „*Ebony*” and the delicious Japanese „*kakifruit*”; *Styrax Benzoin* („*minjan*”) yielding the fragrant „*Benzoë*”; several *Sapotaceae* affording the well-known „*sapodilla*” or „*saoe manilla*” (*Achras sapota*); the important guttapercha-yielding trees belonging to the genera *Palaquium* and *Payena*.

Opposite to the guttapercha quarter (IV B) *Apocynaceae* are planted, in IV A to the left of the pathway. This order is notorious on account of the large number of species containing highly poisonous principles as for instance the *Tanghinia venenifera* of Madagascar, the seeds of which are said to have been used to submit thousands of criminals to a „poison-proof”, and also the *Cerbera Odallam* „*Bientaroh*”, common on our shores, which has poisonous fruits. The same natural order contains on the other hand the species of *Oleander* and *Plumiera* which line our walk; the latter are the special graveyard trees.

Reaching the large pond, near the bridge which leads to the garden belonging to Government-house, and *not* to „’s Lands Plantentuin”, we have a fine view of the „Canarium-avenue” and of the dainty island, where the red pinang, before mentioned, contributes much to its gracefulness.

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On the other side of the bridge within the reserved part, stands a peculiar tree, whose sausage-like fruits are suspended by long rope-like peduncles. This tree is the *Kigelia pinnata*, a native of Africa; the fruits are hardly edible but in case of need they might be used as clubs (two large specimens are to be found in XI H). In an arm of the pond aside of IV C, several flowers and leaves belonging to the now widely known *Victoria regia* may be seen floating. Walking alongside of the pond we find on its bank several species of *Nephelium* affording the „ramboetans”, „poelasans” and the Chinese „Litchis” all well-known pleasant fruits.

Walking between III I and III J in the direction of the small pond provided with a fountain we pass between *Sapindaceae*. This order contains the species of *Nephelium* already mentioned and also the *Sapindus Rarak* (on III J); the fruits of the latter affording „saponine” on account of which they can serve to a certain extent as a substitute of soap. To the left, behind III I a tall *Cecropia* from America is seen.

A little before we reach the small pond we pass by a heavy trunk (*Terminalia Catappa*), one of the red-labelled specimens, already mentioned, left in a wrong quarter.

In the small pond several species of *Nymphaea* got their home; they differ from their European sisters in as much as their flowers do not float on the water, but are elevated above it by means of rigid straight peduncles. This arrangement seems far from practical for waterplants, because a rapid rising of the water may cause death by drowning to their flowers. Part of the pond is shaded by a gigantic Fig-tree.

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It is the *Ficus* (*Urostigma*) *elastica* or India-rubber tree, small plants of which are favorites in European drawing-rooms.

Walking around this giant one may observe at leisure how aerial roots descend from the branches and on reaching the ground penetrate into it, after which they increase enormously in diameter, finally supporting the branches as heavy columns. Behind that „*karet-tree*” an exceedingly tall stem may be seen, bearing the label *Dipterocarpus trinervis*. Though not at its proper place — the red label indicates as much — two reasons were decisive in saving it; its beauty and especially the fact that it has probably been planted by BLUME and is perhaps one of the specimens on which the *Dipterocarp*-family has been based.

Parting from this venerable tree, we return alongside of the pavilion on the pond's bank and ascend towards the canarium-avenue. Doing thus we leave to the left the family of the *Meliaceae* providing us with *Mahagony* „*soeren-wood*” and „*doekoe*”, *Lansium domesticum*, a very pleasant fruit. We then meet on the right with a magnificent specimen of *Urostigma giganteum*, which frequently without any apparent external cause drops all its leaves at once. Two bushes of *Erythroxylon Coca*, the plant to which we are indebted for the painkilling „*cocaine*” are seen a little higher up at the end of quarter III K. The whole number of Coca plants in the agricultural garden as well as most of the Coca shrubs now found all over Java are descendants of these two specimens.

After a short rest at the end of the large pond, to enjoy the view on Government-house, a view widely

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known by its numerous reproductions in photography and engraving, the visitor may continue his walk towards the canarium-avenue and follow the latter till near Government-house.

Most of the plants climbing in the high canarium-trees belong to the Aroid-order.

Plants worth mentioning in the beds on the left hand of the avenue are *Parmentiera cerifera* (XI H) with fruits strikingly resembling wax-candles; in the centre of the same quarter, the usually flowering beautiful *Spathodea campanulata* from Africa and furthermore the already mentioned „sausagetree” *Kigelia pinnata*.

In XI I calabash-trees (*Crescentia spec.*) and the teak-wood (*Tectona grandis*) may be observed.

Past XIII J usually a fine view of the *Salak* may be obtained while at the end of the large pond near the reserved part fine Lotus plants (*Nelumbium speciosum*) are conspicuous. The part to the left surrounded by bamboo is, as indicated on the map, the cemetery of Gouvernment-house where mostly relations of the different Governors-General are interred. The graves of two very able young naturalists KUHLE and VAN HASSELT are also found here, the first passed away on the 14th of September 1821 the last on the 8th of September 1823.

Leaving the cemetery to the left we have a view over the two lawns (XIII M and XIV A) and perceive bed XIV C where *Scitamineae* are planted.

There the visitor meets with *bananas* (mostly now removed to the new part of the garden), *ginger*, *cardamon*, *curcuma*, *Marantae* with magnificent foliage, *Cannae* and

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other well-known ornamental plants. The road between the lawns leads to the second main entrance of the garden.

Continuing our promenade along the cemetery we reach the rivulet „*Tji-Ballok*” on the banks of which several species of bamboo are planted.

Crossing the *Tji-Ballok* we have in front of us the *Livistona*-avenue thus called after the tall palms bordering it. On the side of this lane, in XII E, a supplementary Palm-quarter is found which became necessary on account of the increasing numbers of the very rich collection of this order. The building on the right is a protestant church.

Not following the *Livistona*-avenue, but turning to the left, we follow the middlepath through the rose-garden in the centre of which a humble column is consecrated to the memory of TEYSMANN.

Reaching that part of the chief road which forms the continuation of the *Livistona*-alley we remark several fine palms planted here for ornamental purposes.

To the left in XII C and also in V, the climbing palms or „*Rottans*” are kept.

The long tendrils of these plants, closely set with grappling hooks, make caution necessary on a walk in this quarter. The native policemen line their thief-catching forks („*tjanggoh*”) with rows of these rottan tendrils. The extraordinary length which the usually thin stems of these climbing palms can reach is observed at our ease here. A length of far over three hundred feet is not at all out of the common.

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Notice in XII D, some specimens of a famous tree viz the poisonous „upas-tree” (*Antiaris toxicaria*) which in fantastic tales of horror plays a predominant part.

Proceeding we arrive at a shed, where some fine and new plants are cultivated. A little further on another shed also executed in lathwork is kept for plants requiring shade and much moisture.

The latter contains fine species of *Maranta* and *Calathea*; a number of large specimens of *Anthurium*, *Dieffenbachia* and other plants belonging to the Aroid-order; nice *Selaginellae*; interesting *Lycopods*; hanging Ferns and a great number of other plants from the moisty parts of the jungles.

Leaving the nursery, we perceive to the right on the border of the *Tji-Ballok* a climbing bamboo scientifically known as the *Dinorchloa Tjankorreh*. A few paces along the nurseries, to which the public is not admitted, bring us again to the canarian-avenue and turning to the right we regain the point, where we entered, thus having completed the circuit of the garden.

Till a few years ago the parts X, XI and XII formed together a special garden for the numerous tropical climbers.

The whole collection of climbers is to be transferred to the new grounds (see p. 11); a great number of interesting climbers belonging to different orders is already to be found there, (in the parts XVI, XVII, XVIII).

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Still the visitor may find in the old quarters numerous very fine specimens of conspicuous climbing plants and creepers. So in XI A several frequently blooming species of the genus *Connarus* and a fine set of climbing *Anonaceae*.

In XIII A, species of the gigantic *Entada*'s (see p. 7); the luxuriously developed *Clianthus Binnendijkii*, named after the late curator BINNENDIJK; *Abrus precatorius* („*Saga*” or „*Jequirity*”) with peculiar red, blackspotted beans, used by children as playthings and in former times having served as coins. In XI B shrubs belonging to the genera *Medinilla* and *Dissochaeta* with glorious pink and blue flowers, and the lofty *Zanoniae* with their long pendulate branches and large round fruits, ascending the trees by means of the sole-like broadened tips of their furcate tendrils. In X G, behind the Director's bungalow, two fine specimens of *Fagraea imperialis*, with conspicuous white bell-shaped flowers, perhaps the largest flowers of all the plants in the garden; hook-climbing *Uncaria*'s and a great number of *Mussaenda*'s with large white „leaves” dispersed between the green ones, „leaves” that prove to be, on closer examination, parts of the calyx of some of flowers. Finally in X C and X D, species of *Landolphia* the climbing India-rubbers of Eastern Tropical Afrika; *Allamandae* and species of *Beaumontia* with lovely yellow and pink-white flowers; *Strophantus* spec. div. with peculiar fruits, resembling a pair of bull-horns, yielding a poisonous principle, „strophantine” recommended as a remedy against heart-diseases.

A VISIT TO THE AGRICULTURAL AND EXPERIMENTAL GARDEN.

To anybody interested in tropical agriculture a visit to this garden can be specially recommended. From the centre of *Buitenzorg* we have the choice of two roads. We may follow the high road as far as the „*Witte paal*” and then turn to the left taking the way „*Boeboelak*” or we may take the road leading across the „*roode brug*” and from there continue our walk through the district of *Tjikeumeuh*.

Among the natives the garden is known by the name of „*langbae*”, a corruption of the Dutch word „*Landbouw*” which means agriculture. The natives use it because formerly a school of „*Landbouw*” was found here. (see p. 5).

A large number of useful plants is grown here, in order to obtain as many facts as possible as to the methods of their cultivation, their rate of growth, the amount of their produce etc. On the other hand, seeds, cuttings and young plants are provided free of cost. Moreover the division is doing a great deal, in introducing new cultivations into Netherlands-India, in giving advice and information about their cultivation and preparation for market, in trials and experiments, and so on.

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Finally a number of pharmaceutical plants is cultivated to provide material for the investigations in the pharmacological laboratory.

A broad road leading to the Estate *Tjileboet* divides the garden into two nearly equal parts.

The roads and pathways have been made almost perpendicular to this main road, from this a regularity results which makes supervision very easy. The meshes of this network of pathways have all been numbered and an alphabetical register of the names of all plants cultivated is kept by the aid of which it is easy to find a plant at the shortest notice.

In this garden each species is represented as a rule by a great number of specimens, occupying generally a whole bed. On two of the corners of each bed labels give the name of the plant and the date of its planting.

We will start our walk from the *Laboratory of Agricultural Chemistry*. This was built in 1890—1891 and upon completion it was equipped with everything required by this branch of science. Small gasworks, where the gas is made from kerosene are connected with it.

Turning into the road which runs alongside of the laboratory we find ourselves immediately surrounded by large trees of *Liberian coffee* already past their first youth. They were planted in 1876 in the shadow of *Albizzia moluccana* and are the eldest specimens in the „*Cultuurtuin*” and probably even the eldest in Java. This tree has proved already to be of great value to the western parts of Java as well as to other moist and low countries of the Malay archipelago.

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The important part which's *Lands Plantentuin* has had in its introduction and in promoting its cultivation, may be pointed out here. Throughout the year the plant bears fruit and it flowers repeatedly.

A narrow road to the left of this bed leads alongside of a large bed containing several varieties of Arabian-coffee; the growth of none of these can be compared with the luxuriance of the Liberian coffee.

This bed is surrounded by a hedge consisting on the North- and East-sides of Liberian coffee and on the South-side of *Bixa Orellana*, the „roucou-tree” affording the well known „anatto”. Following the narrow path, we soon reach a spot where the eye is caught by a number of „sawahs” belonging to the garden. These are experimental fields for rice-culture and have served as such for a number of years already.

Turning to the right we follow the Liberian hedge until we arrive at a small aqueduct and then turning to the right again we see in front of it a small bed with „Dilem” (*Pogostemon spec.*) yielding on destillation the well-known „Patchouli-oil”. Turning to the left, we soon notice a bed with several species of *Boehmeria*, affording the „rameh” fibre also known as „China grass”. On the right of the road there is some *Arabian-coffee* now past its prime and on the left young *Assam-tea* of a select type; a little further on a bed with *sugar cane*, growing luxuriously in the moist climate of Buitenzorg. Opposite to the canes we may turn into the road on the right, between a bed of *Diospyros macrophylla*, the tree affording the ebony and one of *Cedrela odorata*, introduced to test

its value as a shade-tree. As yet the results are very promising, it is a rapid grower, the shadow is not too heavy, and here at least the tree has hardly any leaves during the first months of the rainy season. The trunks are here used as supports for the *Alangium sundaicum* a plant interesting to pharmaceutical chemistry. Continuing straight on the visitor passes between *Myroxylon toluiferum*, yielding the „Tolu-balsam” and *M. peruiferum* affording the „balsam of Peru”. A little further on a bed with „Vanilla” is met with usually bearing either blossom or unripe fruits. As the insect, which fertilises the Vanilla in its native land, is not found in Java artificial fertilisation must be resorted to, to obtain the „Vanilla”. On the right of the road fine specimens of *Eucalyptus alba*, a native of Timor, may be seen, which grow very well here. They shade the India-rubber producing *Landolphiae* from Africa and *Chonemorpha macrophylla*. Opposite to this a young Cocoa-garden is found where the plants enjoy the shade of *Cedrela serrulata*, affording a good timber besides. The Cedrela stems here serve moreover as supports to some plants of the pepper-family and also to *Smilax syphilitica* the roots of which yield the „sarsaparilla”.

Next to it an old pepper-garden is seen, a couple of rows of which are occupied by the well-known *Cubeba pepper*. On drying, the immature pepper-fruits produce the black pepper, the ripe ones the white pepper. The supports here are Silk cotton trees, which give but little shade and besides have the advantage of affording yearly a crop of Silk-cotton. Keeping this road the

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visitor soon perceives on the right a great number of *Coca-shrubs* with their fine pale green foliage and handsome red fruits. The leaves afford the *Cocaine*. The *Erythroxylon Coca var. Spruceana* yields much alcaloid in Java but its composition differs somewhat from that produced by the Peru-coca. On the right a fine grove of *Theobroma Cacao* is worth noticing. It furnishes a product of excellent quality.

Next to it we have a bed with *Schleichera tryuga* yielding the famous Makassar-oil. It must be acknowledged that the plant develops badly in the climate of Buitenzorg, in the mean time the trees here have suffered considerably from the India-rubber climbers the stems of which have made deep grooves in their trunks. Next to the coca a clove-garden is found, shaded by *Caesalpinia arborea* and further on African oil-palms, *Elaeis guineensis*, whose fern-covered trunks and magnificent crowns produce a fine effect. The oil present in the seed as well as that in the fruit-flesh is won. Notice opposite to the oil-palms a plot of *Theobroma bicolor*, a species of cacao inferior to the one just mentioned.

This bed is shaded by *Pithecolobium Saman* („rain-tree”) belonging to the family of the *Leguminosae*. Numerous seeds of this tree have recently been distributed as many planters judge it a good shade-tree for coffee. Next to it is a bed with satinwood, *Chloroxylon Swietenia*, containing many fine stems.

Alongside of the *Elaeis*-bed a row of *Acacia catchu* is found. The wood of this tree is used for the manufacture of the „cutch”. Further on we have a

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couple of rows of *Indigofera galeoides* (*taroem oetan*) containing bitter almond oil and prussic acid instead of indigo; subsequently we find in the same, not over-fertile bed *Melia azedarach* (*Mindi*) shading the coffee on many estates and esteemed also a good timber, and finally *Stenotropis Broteroi* and *Culpicarpum Roxburghii* both of some importance from a pharmaceutical point of view. The beds bordering on the „Road Boeboelak” contain a number of trees belonging to different orders.

Continuing our walk alongside of the small aqueduct we see on the left some specimens of *Antiaris toxicaria* the notorious *upas-tree*, the juice of which is used both as an arrow poison and as a drug. Proceeding we first pass by a bed of Arabian-coffee, then by *Palaquium rostratum*, the stems of which support pepper-plants and after that by *Uncaria gambir*, the leaves of which afford by extraction with water the well-known *gambir*. Further on the visitor sees a number of fine „Karet”-trees (*Urostigma elastium*) with many scars on the stems, showing that they have been tapped repeatedly for their very valuable India-rubber. Turning into a narrow pathway on the left hand, we perceive some fine specimens of *Theobroma bicolor* and a bed with *Bixa Orellana*. Walking along-side of the third border of the India-rubber bed there is at the corner a bed densely planted with *Myristica fragrans*. Usually these nut-meg trees bear fruits which on splitting expose the dark-brown nut-meg enveloped in the brilliant scarlet meshes of the „mace”. Walking along we pass by a group of *Coco-palms*; by *Hevea brasiliensis*, affording the excellent *Para-rubber*.

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and by a bed with rows of Liberian coffee, each pair of which differs one year with the next. In the same bed we find some specimens of *Manihot Glaziovii* („*Ceara-rubber*”) the culture of which will be abandoned because the promised magnificent results have in no respect been fulfilled. Further on there is an other bed with Liberian coffee. A number of these trees have been topped, and the other ones have their natural size. On this same bed we remark on the bank of the highroad about a hundred cuttings of a variety of the Liberian-coffee (or perhaps of a hybrid between Liberian and Arabian coffee) grafted on Liberian-stems. In the centre of the same bed we perceive a number of specimens of the white flowered variety of *Punica Granatum*, the root of which is known as a remedy against tapeworm. In the bed near to the highroad there are some varieties and perhaps hybrids of Liberian-coffee and also a large quantity of *Syzygium jambolanum*, a tree said to afford a remedy against diabetes.

Crossing the road we pass by a keepers-lodge and across the stonebridge we go to the opposite part of the garden.

Immediately on entering, the visitor is confronted by a group of *Palaquium borneense*, a tree yielding a gutta-percha of excellent quality. Following the aqueduct to the right we see on its border groups of other species of *Palaquium* and of *Payena Leerii*. The latter yields but a small crop of gutta-percha. One of these species the *Palaquium gutta* deserves fully our interest, because this is one of the few places where the tree

may be seen, because nearly everywhere the tree has been exterminated by the collectors of forest products. While the gutta-percha can be collected by making cuts in the bark and while this process may be repeated over and over again if one gives the tree the necessary rest it is still easier to cut the whole tree. Thus the natives cut off all further supply and not only that but they do not even get all the gutta-percha present in the tree at the time of felling. The leaves also contain guttapercha and experiments in the laboratory have taught that in regular cultivation it may be won advantageously from them.

Turning into the narrow road between the beds with *Payena Leerii* and the ironwood, *Eusideroxylon Zwageri*, we reach on turning to the left beds with *Java-* and *Assam tea*. The lowly cut shrubs are treated in the way usual in tea-estates. At regular intervals the young leaves are picked, and after having withered a little they are rolled either by hand or by machines. After this they are exposed during a couple of hours to the action of the air to obtain a brown-red color and a good flavour. This process is called fermentation. Finally they are dried and after sorting the crop is ready for sale. If one allows the tea shrub to grow naturally it forms a rather tall tree as is here shown by some specimens of the Assam-tea.

A little further on one sees on the right two other species of *Palaquium* viz *P. Treubii* var. *parvifolium* and *P. oblongifolium*, the latter affording an excellent product. On the right again observe a group of *Sicietenia mahagoni*, the mahagony-tree. On the left there is an old Liberian-

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coffee garden with trees planted more crowded than usual. Keeping this road we pass by a bed of *Caesalpinia coriaria* usually expanding its fragrant blossoms and mostly bearing fruit at the same time. The fruits are peculiar S-shaped pods, containing much tannine and known as „*Divi-Divi*”. Subsequently one passes by a group of „Cinnamon” trees („*Cinnamomum zeylanicum*”), whose flowers have a nauseous odour. The leaves have a clove-flavor and the root-bark contains camphor. Opposite to the cinnamons there is a bed with *Anacardium occidentale* (*djamboe monjet*) the fruits of which are known as „Cashew nuts”. A peculiarity of this tree is that during the process of fruit-ripening the peduncle swells to the size of an apple. The tree is said to be a gumproducer.

Finally we remark on the left the *Lepidadenia Wightiana* („tangkalak”) containing a considerable quantity of fat in fruitflesh and seeds. Returning and following the road between the cinnamons and *Divi-Divi* beds we have in front of us some specimens of *Calotropis gigantea* („*baäoeri*”). The fruits of this plant contain fine silky seed-hairs. On the right there is a group of *Fourcroya gigantea*, which in its large swordlike leaves contains a very strong fibre the „*Mauritius hemp*”. To the right of this some varieties of the true Cottonplant are met with. This plant does not do well in Buitenzorg, the climate being too moist. Going on we pass by a bed of *Andropogon muricatus* (*Akar wangi*). The roots contain a very fragrant essential oil and are used, especially in British-India, for the

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manufacture of matting, baskets etc. The first cross-road on the left leads past a bed with *Andropogon nardus* („*sereh wangi*”). The leaves of this species yield a large quantity of an essential oil (*citronella-oil*). Next to it some few specimens of *Agave rigida* var. *Sisalana* are planted; their leaves afford the „*Sisal-hemp*”. Further on we find some *Sansevieria*'s affording fibre also, and *Erythroxylon bolivianum*, a coca species of slower growth- and containing less alcaloid than the *E. Coca*.

Finally we meet with some species of *Cardamon* and *Maranta indica*, containing in their rhizomes a kind of starch know by the name of *arrow-root*. Turning into the road to the right the visitors sees, on the right, a group of *Dryobalanops aromatica* a tree from Sumatra, yielding the „*Baros camphor*” or „*borneol*”. The tree has lost much of its importance however as now its product is made artificially. On the right there is a special part for annuals. There we find *Sesamum indicum* („*widjen*”) *Polygala oleifera* both with seeds containing much oily substance; *Corchorus capsularis* affording the „*jute*” or „*goeni*” fibre; *Andropogon Schoenanthus* („*sereh*”), yielding a fragrant oil; *Orthosiphon stamineus* („*Koemis koetjing*”) and finally some rows of *Indigofera galegoides* (*taroem oetan*). Walking along we meet on the right hand again, with two beds with *Baros camphor* between which some specimens of the poorly growing „*cow-tree*” (*Galactodendron utile*) have been planted. This tree can be tapped for its sweet tasting milkjuice.

On the left we have some small groups of plants to be tested as to their pharmaceutical value, for instance:

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Solandra grandiflora, *Tiliacora acuminata*, *Ancistrocldus VahlII*, *Popowia pisocarpa*. Further on the visitor meets again with *Theobroma Cacao* and with *Th. bicolor*. Next to it on the right there is a group of *Kopsia flacida* and on the left one of *Strophanthus dichotomus*, a robust climber with fine flowers and peculiar bull-horn shaped fruits. The seeds contain *strophantine* used as a remedy against some forms of heart-disease. Further on our attention is caught by some fine trees (*Castilloa elastica*) native of S. America, the trunks of which are covered with scars left after the tapping of the India-rubber.

In the bed on the right there are a few young specimens of *Dalbergia latifolia* („*sono kling*”) affording very fine timber. Turning to the left at the corner of the *Castilloa*-bed we have on the right a group of *Cynometra ramiflora*. Turning to the right once more we see on the left hand a species of grape introduced from *Cochin-China*.

Further on we meet with a group of *Cola acuminata*. This tree affording the well-known „*Kolanut*”, usually bears fruit and flowers in large numbers at the same time. Visitors interested in fotherplants will find in this part of the garden many kinds of different countries. Next to the kola there is a small group of *Haematoxylon Campechianum*, affording the „*logwood*”. In the bed opposite to it we have *Marsdenia tinctoria* used in *Sumatra* as an indigo-plant and a little further on *Urostigma Vogelii*. This tree can be tapped for the so called *Lagos-rubber*, a kind inferior to the one of the *Urostigma elasticum*.

Instead of crossing the ravine bij the stonebridge we

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return and follow its banks as far back as the *Castilloa*-bed. Turning there to the left we have an opportunity of observing some rubber-producing climbers (species of *Willughbeia*). Opposite to it see *Isoptera borneëse*, the seeds of which yield a solid fat (*minjak tengkawang*). Behind this plot *Musa mindanensis* will be seen, the leaf-sheaths of which afford the „*Manilla-hemp*”. Next to *Isoptera borneëse* a group of *Shorea stenoptera* will be found. The large seeds contain a great quantity of a solid fat, called „*tengkawang*” also.

A rustic bridge leads across the ravine to the division of pharmaceutical plants and further on a stone bridge to the nursery near to which a small museum is found, containing a collection of seeds and products of the garden. Passing by the house of the Chief of the Division we are again at the point from where we started.

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China-grass 27.

1) These numbers refer to plants in the Agricultural garden.

Chloroxylon Swietenia 29.
 Chonemorpha macrophylla 28.
 Cinchona 17.
 Citronella 34.
 Cinnamon 33.
 Cinnamomum 14.
 Cinnamomum Zeylanicum 33.
 Clianthus Binnendykii 24.
 Clove-trees 13, 29.
 Coca 29.
 Coco-de-mer 13.
 Coco-palm 30.
 Cocos nucifera 30.
 Coffea 17.
 Cola accuminata 35.
 Conifers 14.
 Connarus 24.
 Corchorus capsularis 34.
 Cow-tree 34.
 Crescentia 21.
 Croton 14.
 Cubeba pepper 28.
 Curcuma 21.
 Custard apple 17.
 Cutch 29.
 Cynometra ramiflora 35.
 Cyperus papyrus 10.
 Cyrtostachys rendah 12.
 Dalbergia latifolia 35.
 Dammara alba 12.
 Dieffenbachia 23.
 Dillenia 17.
 Dinocloa Tjankorreh 23.
 Diospyros 18.
 Diospyros macrophylla 27.
 Dipterocarpus trinervis 20.
 Dissochaeta 24.
 Divi-divi 33.
 Djamboe-monjet 33.
 Doekoe 20.
 Doerian 11.
 Dryobalanops aromatica 15, 34.
 Durio zibethinus 11.
 Ebony 18.
 Eichhornia crassipes 10.
 Elaeis Guineensis 13, 29.
 Elaeocarpus 16.

Entada 24.
 Entada monostachya 7.
 Entada scandens 7.
 Eriodendron anfractuosum 11.
 Erythroxylon Bolivianum 34.
 Erythroxylon Coca 20, 29.
 Eucalyptus 13.
 Eucalyptus alba 28.
 Eugeissonia tristis 13.
 Eusideroxylon Zwageri 13, 32.

Fagraea imperialis 24.
 Ficus 15.
 Ficus elastica 20.
 Ficus Riedelii 14.
 Fourcroya gigantea 33.

Galactodendron utile 34.
 Gambir 30.
 Garcinia mangostana 16.
 Gardenia 17.
 Genderia 16.
 Ginger 21.
 Gnetum Gneumon 12.
 Goeni 34.
 Guava 13.
 Gutta percha 18, 31.

Haematoxylon Campechianum 35.
 Hevea brasiliensis 30.
 Hibiscus 11.
 Hura crepitans 14.
 Hymenachne interruptum 10.

Indigofera galegoides 30, 34.
 India-rubber 20, 30.
 Ironwood 13, 32.
 Isoptera borneensis 36.

Jagera speciosa 8.
 Java almonds 13.
 Jequirity 24.
 Jute 34.

Kajoe poetih 16.
 Kaki 18.
 Kapoentoeng 14.
 Kapok oetan 11.

Karet 20.
 Katapan 15.
 Kembang sepatoe 11.
 Ketella pohon 14.
 Ki-endok 9.
 Kigelia pinnata 19.
 Kino 7.
 Ki-tjae 11.
 Koemis koetjing 34.
 Kolanut 16, 35.
 Kopsia flavida 35.
 Lagerstroemia 15.
 Lagos-rubber 35.
 Lahia Kutejensis 11.
 Landolphia 24, 28.
 Lansium domesticum 20.
 Lasia 10.
 Latania 12.
 Lepidadenia Wightiana 33.
 Liberian coffee 26, 31, 32, 33.
 Livistona 22.
 Lodoicea Seychellarum 13.
 Logwood 35.
 Lontarpalm 13.
 Lotus 21.
 Mahagony 20, 32.
 Manienjo 12.
 Mangifera 13.
 Mango 13.
 Mangosteen 16.
 Manihot Glaziovii 14, 31.
 » utilissima 14.
 Manilla-hemp 36.
 Maranta 21, 23.
 Maranta indica 34.
 Marsdenia tinctoria 35.
 Medinilla 24.
 Melia azedarach 30.
 Menteng 14.
 Mesua ferrea 16.
 Metroxylon elatum 12.
 Michelia 17.
 Mindi 30.
 Minjak tengkawang 36.
 Minjan 18.
 Musa 11.
 Musa mindanensis 36.

Mussaenda 24.
 Myristica fragrans 17, 30.
 » Horsfieldii 18.
 Myroxylon peruiferum 28.
 » toluiferum 28.
 Nelumbium speciosum 10, 21.
 Nephelium 19.
 Niboeng-palm. 12.
 Nipa 10.
 Nymphaea 19.
 » alba 10.
 Nutmeg 17, 30.
 Oil palm 29.
 Oleandra 18.
 Oncosperma filamentosa 12.
 Oreodoxa 12.
 Ortosiphon stamineus 34.
 Oryza sativa 10.
 Pala 17.
 Palaquium 31.
 » borneense 18, 31.
 Palaquim gutta 31.
 » oblongifolium 32.
 » rostratum 30.
 » Treubii 32.
 Palmirah-palm 13.
 Paranuts 16.
 Para-rubber 30.
 Parmentiera cerifera 21.
 Patchouli 27.
 Pavetta 17.
 Payena 18.
 » Leerii 31, 32.
 Pepper 30.
 Phoenix 12.
 Phytelphas macrocarpa 10.
 Pierardia 14.
 Pinangnuts 9.
 Pisonia excelsa 11.
 Pisonia sylvestris 10.
 Pithecolobium Saman 8, 29.
 Plumiera 18.
 Poelasan 19.
 Poering 14.
 Pogostemon 27.
 Polygala oleifera 34.

Popowia pisocarpa 35.

Pterocarpus 7.

Punica granatum 31.

Quercus 14.

Rain-tree 8, 29.

Ramboetan 19.

Rameh 27.

Rottan 22.

Roucoun-tree 27.

Saga 24.

Sagittaria 10.

Salak 12.

Salmalia malabarica 11.

Sandelwood 17.

Sansevieria 34.

Santalum album 17.

Saoe manilla 18.

Sapindus Rarak 19.

Sapodilla 18.

Sarsaparilla 28.

Satinwood 29.

Schizolobium excelsum 8.

Schleichera trijuga 29.

Screw-pines. 9.

Sereh 34.

Sereh wangi 34.

Sesamum indicum 34.

Shorea stenoptera 15, 36.

Silk-cotton 11, 28.

Sirih 9.

Sisal-hemp 34.

Smilax syphilitica 28.

Soeren 20.

Solandra grandiflora 35.

Sono kling 35.

Soursop 17.

Spathodea campanulata 21.

Stelechocarpus Burahol 17.

Stenotropis Brotheroi 30.

Strophantus 24.

Strychnos nux Vomica 9.

Styrax Benzoin. 18.

Sugar cane 27.

Sumatra camphor 15.

Swietenia Mahagoni 32.

Syzygium jambolanum 31.

Talauma 17.

Tanghinia venenifera 18.

Tangkalak 33.

Tangkawang 15.

Taroem oetan 30, 34.

Tea 32.

Teak 21.

Tectona grandis 21.

Terminalia 15.

— Catappa 19.

Theobroma bicolor 29, 30, 35.

Theobroma Cacao 29, 35.

Tiliacora acuminata 35.

Tjampaka 17.

Uncaria 24.

— Gambir 30.

Upas 23, 30.

Urostigma elasticum 30.

— giganteum 20.

— Vogelii 35.

Victoria regia 19.

Vanilla 28.

Widjojo Koesoema 10.

Widjen 34.

Willughbeia 36.

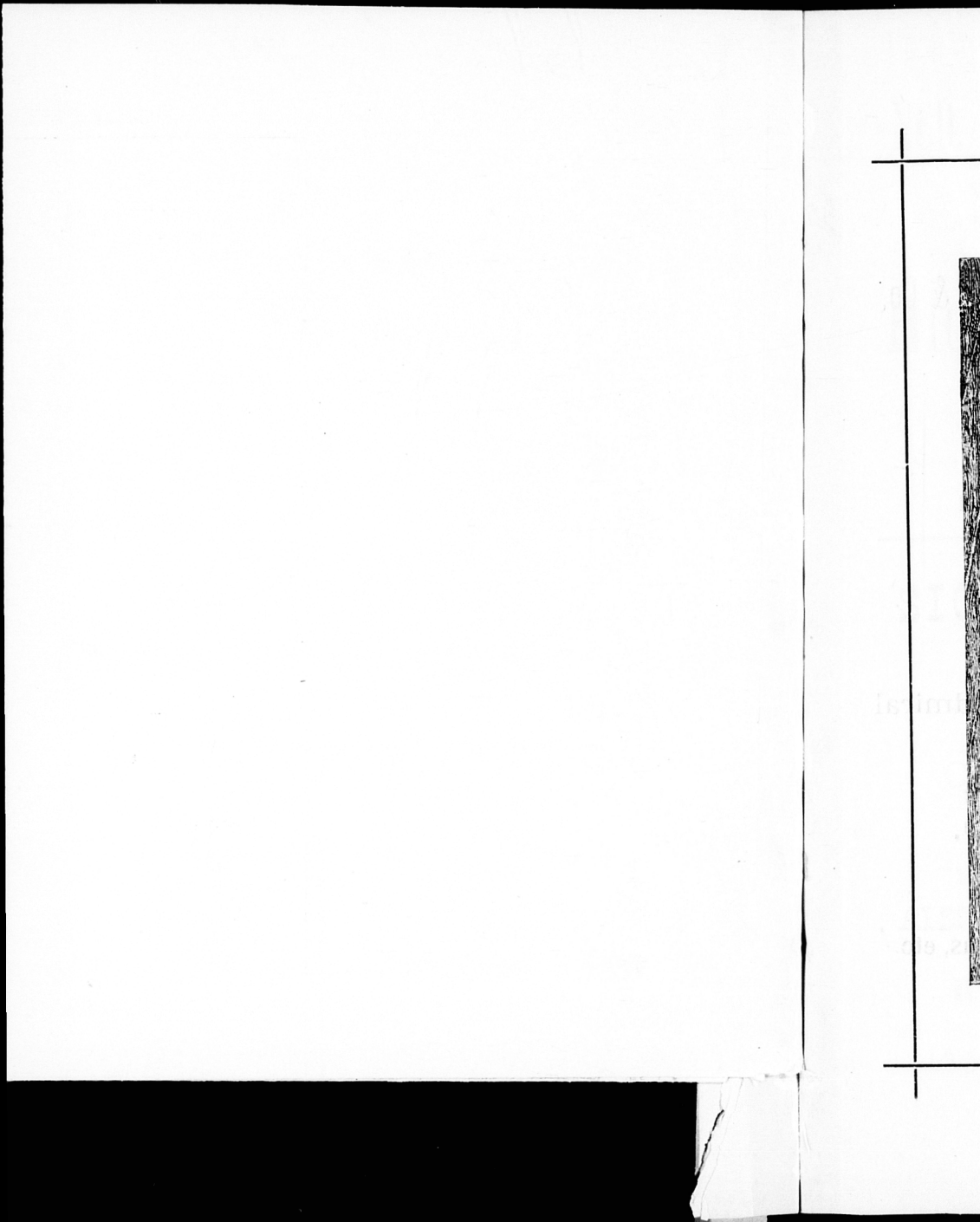
Woengoe 15.

Wormia 17.

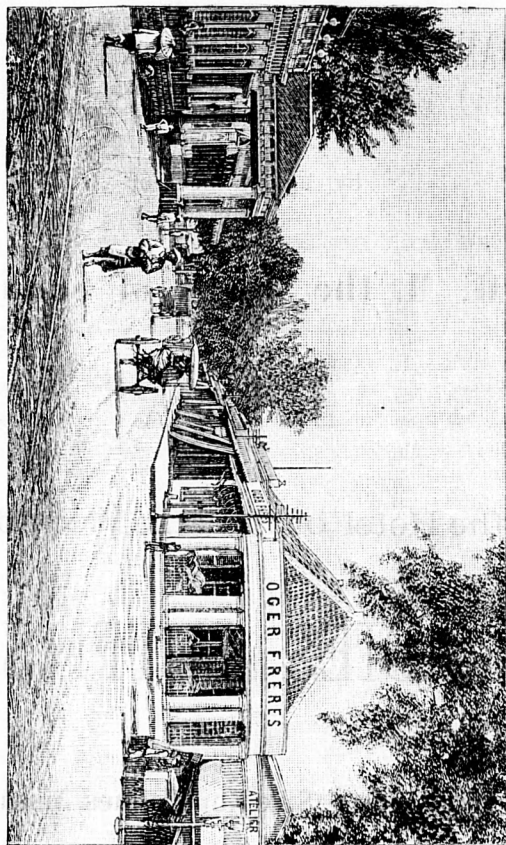
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Zalacca 12.

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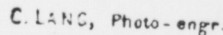
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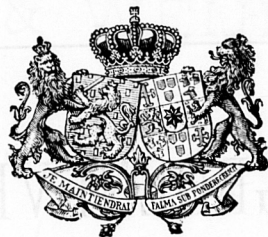
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