

REVISION
OF THE
NATURAL ORDER HEDERACEÆ

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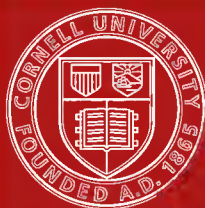
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REVISION

OF THE

NATURAL ORDER HEDERACEÆ,

BEING

A REPRINT, WITH NUMEROUS ADDITIONS AND CORRECTIONS, OF A SERIES OF
PAPERS PUBLISHED IN

THE 'JOURNAL OF BOTANY,' BRITISH AND FOREIGN.

BY

BERTHOLD SEEMANN, PH.D., F.L.S.,

PRES. ADJ. OF THE IMPERIAL GERMAN L. C. ACADEMY NATURÆ CURIOSORUM.

With Illustrations.

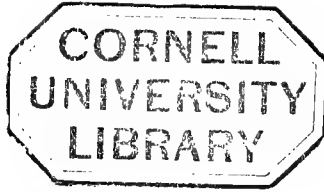


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REVISION OF THE NATURAL ORDER HEDERACEÆ.

From my 'Journal of Botany' I here reprint, with numerous corrections and additions, a series of papers on all Umbelliferous plants having valvate petals and a fruit composed of two or more carpels, of which *Hedera Helix* is the type, and for which I have adopted the name *Hederaceæ*; all genera with imbricate petals and 1-celled ovaries being excluded, as elements foreign to this group.

Linnæus has bequeathed to us only one genus of *Hederaceæ* (*Hedera*); his genera *Panax* and *Aralia*, reduced to their true limits, are not members of the group.

In 1756, P. Browne published the genus *Sciadophyllum*; ten years later (1766), Forster, *Schefflera* and *Polyscias*. In 1780, Thunberg established the genus *Cussonia*, and in 1789, Commerson that of *Gastonia*. In 1791, Gærtner added *Heptapleurum*; in 1802, Ruiz and Pavon, *Gilibertia* and *Actinophyllum*, the latter identical with *Sciadophyllum*; and in 1806, Petit-Thouars, *Maralia*.

In 1830, De Candolle enumerated thirteen genera, viz. *Adoxa*, *Panax*, *Cussonia*, *Maralia*, *Gilibertia*, *Gastonia*, *Polyscias*, *Toricellia*, *Aralia*, *Sciadophyllum*, *Hedera*, *Paratropia*, and *Arthropphyllum*. Five of these (*Adoxa*, *Panax*, *Aralia*, *Toricellia*, and *Arthropphyllum*) being excluded by the definition above given, the genera known to De Candolle are reduced to eight, whilst the two published as new on this occasion were previously known.

In 1840 Endlicher, in his 'Genera Plantarum' (including the first supplement), enumerated sixteen genera, adding to those known to De Candolle *Botryodendron*, *Miquelia*, and *Brassaia*. But *Miquelia* belongs to *Olacineæ*, and *Botryodendron*, previously described by Forster under the name of *Meryta*, as I have shown in 'Bonplandia' for 1862, p. 294, to *Haloragineæ*, an Order to which *Helwingia*, Willd., should also be referred.

In 1854 Asa Gray (Botany of Wilkes's Expedition) added *Reynoldsia*, *Tetraplasandra*, and *Plerandra*,—all three excellent genera.

In the same year (1854) Decaisne and Planchon commenced, in the

'Revue Horticole,' a revision of the Order "*Arabiaceæ*," which unfortunately has never been completed, only nineteen genera being treated upon. It is a sketch, written merely for a gardening paper, but nevertheless most important. The learned authors there availed themselves of several characters pointed out in 1848 by Röper, viz. the articulation of the pedicels, the calyculus, and the æstivation, in circumscribing the genera. The new genera indicated were found, in most instances, to be so natural, and to coincide so well with the geographical distribution of the species, that most of them have been generally adopted, though they have, as yet, not been described by them. They were eight in number (viz. *Stilbocarpa*, *Echinopanax*, *Fatsia*, *Brassaiopsis*, *Dendropanax*, *Oreopanax*, *Didymopanax*, and *Cuphocarpus*), two of which, *Cuphocarpus*, with its unicellular ovary, and *Stilbocarpa*, on account of its quincuncial petals, must be excluded from the Order, whilst *Echinopanax* has proved identical with *Horsfieldia*.

In 1856, Miquel published in my 'Bonplandia' a paper on the *Arabiaceæ* of the Indian Archipelago, in which he establishes five new genera (viz. *Agalma*, *Eupteron*, *Aralidium*, *Macropanax*, and *Nothopanax*); and in a subsequent, though antedated publication, his 'Flora of Dutch India,' and its supplement, he adds to them *Actinomorphe* and *Parapanax*. Of these *Aralidium*, with its 1-celled ovary, will have to be transferred to *Cornaceæ*; whilst *Eupteron* is identical with the older genus *Polyscias*. In 1863, the same author published the genera *Botryopanax*, *Osmoxylon*, *Textoria*, and *Kalopanax*, one of which only (*Osmoxylon*) proved new. In 1856, Hooker fil. and Thomson established the genus *Tupidanthus*; in 1858, Grisebach ('Bonplandia') the genus *Sciadodendron*; and in 1859, Maximowicz, the genus *Eleutherococcus*.

In 1859, Carl Koch gave, in his 'Wochenschrift für Gärtnerei und Pflanzenkunde,' an enumeration of the garden *Arabiaceæ* known to him, and a review of the labours of those gone before him in this field of inquiry. Though overlooking a few genera, he enumerates thirty-four, of which seven (*Aralidium*, *Arthrophyllum*, *Cuphocarpus*, *Panax*, *Aralia*, *Pukateria*, and *Bursinopetalum*) are not recognized by me as *Hederaceæ*. He proposes two new genera (*Pseudopanax* and *Tetrapanax*), which I have adopted.

In 1863 I pointed out, in the 'Journal of Botany,' that *Horsfieldia*, *Astrotricha*, *Hydrocotyle* (in part), etc., hitherto placed in *Umbellifereæ*

must be referred to *Hederaceæ*, on account of their truly valvate petals; and in 1864 I added *Crithmum* to the list.

I. ON THE POLYANDROUS GENERA.

In the 'Botanical Magazine' for April, 1856, there is published, on plate 4908, a new genus of *Hederaceæ*, *Tupidanthus calyptratus*, Hook. fil. et Thoms., of which it is remarked, that "the coalescence of the calyx lobes and corolla into an arched coriaceous calyptra, together with the numerous stamens, the total absence of styles, and very numerous cells of the ovary, are perhaps unique in the Order" to which it belongs. The characters are certainly very singular, but it had evidently been overlooked that two years previously (in 1854) Asa Gray described two allied genera from the South Sea Islands (*Plerandra* and *Tetraplasandra*), both of which share with *Tupidanthus* a calyptrate corolla, polyandrous stamens, and a many-celled ovary. The calyptrate corolla had previously been noticed in some of the older genera of the Order, but the polyandrous stamens were certainly quite a new feature,—no more 13 than had been known to exist amongst this group of plants. During my exploration of the Viti Islands, I was fortunate enough to discover several additions to the polyandrous *Hederaceæ*, among them two entirely new genera (*Nesopanax* and *Bakeria*), and in the following pages I propose to give a description of them, together with an enumeration of all the polyandrous *Hederaceæ* known to me. In this list a polyandrous genus will be missed, which being referred by Bentham and Hooker fil. (Gen. Plant. p. 17) to *Hederaceæ*,—"est Araliaceæ anomala ovario subsupero" are their exact words,—would naturally be looked for in this place. I mean *Trochodendron*, a Japan genus founded by Siebold and Zuccarini, and placed by them amongst *Winterææ*, by Endlicher as an anomalous genus at the end of *Magnoliaceæ*, and by Miers in the neighbourhood of *Ternstroemiaceæ*. However it cannot be admitted amongst *Hederaceæ*, differing as it does from all the known members of the Order by its 4-celled anthers and many-ovuled ovaries, to say nothing of its entire want of calyx and corolla. Its affinities are, in my opinion, much more with *Winterææ*, the very group in which Siebold and Zuccarini placed it; and its nearest ally I hold to be *Euptelia*, Sieb. and Zucc., the nature of which has become better understood by the recent publication of Drs. Hooker and Thomson's new Indian species ('Linnean Journal,' sect. Botany, vii. 241. t. 2),

in which it is convincingly shown that the best place to be found for that genus is with or near *Winterææ*. This is exactly the position in which *Trochodendron* has been put by its founders. The two genera agree in almost all essential points, viz. their arboreous habit, alternate, serrate simple and exstipulate leaves, peculiar process of budding, apetalous flowers, numerous stamens, 4-celled anthers, many-ovuled carpels (at least in two out of the three known species), anatropous ovules, albuminous seed, and minute embryo; but they differ in the carpels being separate in *Euptelia*, and almost consolidated in *Trochodendron*. How far this would affect their being grouped together is a matter of individual opinion. In *Ranunculaceæ* we have genera with free, and more or less consolidated carpels, and in *Papaveraceæ* a species, the common garden Poppy, one variety of which* has distinct and consolidated carpels in the same flower. I incline to think that we have here the first known members of a new Order of plants which will have to be ranged near *Ranunculaceæ* and *Magnoliaceæ*, and which might be called *Trochodendreeæ*.

The two genera I have to propose (*Bakeria* and *Nesopanax*) present a new feature, combining as they do free petals with an indefinite number of stamens, the other polyandrous genera previously known having calyptrate petals.

CONSPECTUS GENERUM HEDERACEARUM POLYANDRARUM.

* *Petala calyptratim cohærentia, caduca.*

1. *Tupidanthus*. Pedicelli inarticulati. Flores ecalyculati. Petala 5. Stamina indefinita, biserialia. Ovarium multiloculare. Stigma depressum, 3-4-crure.—Arbor Indiæ orientalis, exstipulata, foliis digitatim 8-9-foliolatis, umbellis compositis.

2. *Tetraplasandra*. Pedicelli inarticulati. Flores ecalyculati. Petala 7-8. Stamina 28-32, uniserialia. Ovarium 7-10-loculare. Stigma obsolete 7-10-radiatum, stylopodio brevi impositum.—Arbor Hawaiiensis, exstipulata, foliis pinnatim 5-7-foliolatis, umbellis paniculatis.

3. *Plerandra*. Pedicelli inarticulati. Flores ecalyculati. Petala 5. Stamina indefinita, pluriserialia. Ovarium 14-15-loculare. Stigma truncatum, obsolete multiradiatum, stylopodio conico impositum.—Arbores Vitienses, exstipulatæ, foliis digitatim 9-foliolatis, umbellis compositis.

* See figure in Gard. Chronicle for 1859, and 'Bonplandia,' 1859, p. 336.

4. *Brassaia*. Pedicelli subnulli. Flores calyculati. Petala 7-17, vulgo 12. Stamina 7-17, plerumque 12, uniserialia. Ovarium 7-17, vulgo 12-loculare. Stigma obsolete 7-17-radiatum, stylopodio conico impositum.—Arbores Novæ Hollandiæ, Novæ Guineæ, et Sumatræ, stipulatæ, foliis digitatim 9-16-foliolatis, capitulis racemosis, pedicellis basi bracteolatis.

5. *Reynoldsia*. Pedicelli inarticulati. Flores ecalyculati. Petala 8-10. Stamina 8-18, uniserialia. Ovarium 8-18-loculare. Stigma 8-18-radiatum, stylopodio conico impositum.—Arbores insularum Oceani Pacifici, exstipulatæ, foliis pinnatim 3-9-foliolatis, umbellis paniculatis compositis, pedicellis nudis.

** *Petala basi cohærentia, persistentia.*

6. *Gastonia*. Pedicelli inarticulati. Flores ecalyculati. Petala 10-11. Stamina petalorum numero, uniserialia. Ovarium 8-10-loculare. Styli 8-10, distincti.—Arbor Mauritanica, foliis exstipulatis imparipinnatis, umbellis paniculatis.

7. *Grotefendia*. Pedicelli articulati. Flores calyculati. Petala 11-13. Stamina petalorum numero, uniserialia. Ovarium 5-10-loculare. Styli 5-10, distincti.—Arbores Mauritanicæ, foliis exstipulatis imparipinnatis, floribus racemosis v. umbellatis.

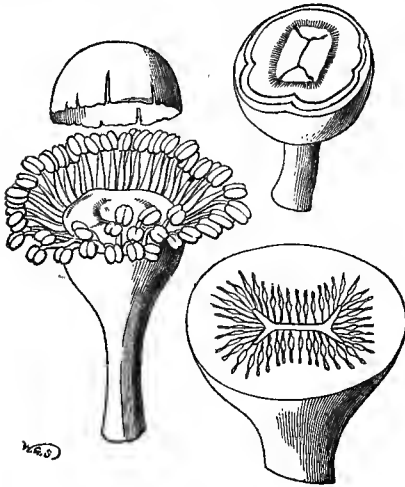
*** *Petala libera, persistentia.*

8. *Bakeria*. Pedicelli inarticulati. Flores ecalyculati. Petala 5. Stamina 15, uniserialia. Ovarium 5-loculare. Stigma obscure 5-fidum, stylopodio subconico impositum.—Arbor Vitiensis, foliis digitatim 5-foliolatis, petiolis basi stipulatim dilatatis, umbellis compositis.

9. *Nesopanax*. Pedicelli inarticulati. Flores ecalyculati. Petala 5. Stamina indefinita, pluriserialia. Ovarium 5-7-loculare. Styli 5-7, distincti, breves.—Arbor Vitiensis, foliis digitatim 7-9-foliolatis, petiolis basi stipulatim dilatatis, umbellis compositis.

I. *TUPIDANTHUS*, Hook. fil. et Thoms. Pedicelli inarticulati. Flores ecalyculati, hermaphroditi. Calyx tubo late clavato v. hemisphærico, limbo truncato. Petala 5, calyptratim cohærentia ("corolla monopetala," C. Koch). Stamina indefinita, biserialia; antheræ oblongæ, 2-loculares. Ovarium multiloculare, centro depressum et rima stigmatifera 4- v. 3-cruri insculptum, loculis uniovulatis. Bacca coriacea, multilocularis, loculis 1-spermis.—Arbor Indiæ orientalis, foliis exstipulatis digitatim 8-9-foliolatis, foliolis petiolulatis oblongis acu-

minatis, integerrimis, glaberrimis, umbellis compositis, lateralibus, corol-



lis viridibus, staminibus pallide stramineis. — *Tupidanthus*, Hook. fil. et Thoms. in Bot. Mag. t. 4908 (1856); C. Koch, *Wochenschrift*, 1859, p. 348.

1. *T. calyptratus*, Hook. fil. et Thoms. in Bot. Mag. t. 4908. *T. Pückleri*, C. Koch, in *Wochenschrift*, 1859, p. 348, cum icon. *Sciadophyllum pulchellum*, Hort.—At the base of the Khasia Mountains, Eastern Bengal (Hooker fil. and Thomson! Griffith! n. 2701).

Tupidanthus calyptratus (partly after Hooker).

This tree seems to grow as underwood and support its weak stem by leaning against other trees, as many other *Hederaceæ* do, a habit which the founders of the genus expressed by "*Arbor alte scandens*." Dr. Carl Koch, mistaking "*scandens*" for "*cirrhosus*" ("*rankend*" is his exact translation), has endeavoured to make a second species (*T. Pückleri*), which he says differs from *T. calyptratus* by not being cirrhose. Of course *T. Pückleri* must fall to the ground. The Kew plant, from which the figure in Bot. Mag. t. 4908 was made, is now 24 feet high, and erect, in growth very much the same as all the other garden plants of this species are.

II. *TETRAPLASANDRA*, A. Gray. Pedicelli inarticulati. Flores ecalyculati, polygami (?). Calyx tubo hemisphærico, limbo brevissimo truncato vix denticulato. Petala linearia, 7–8, calyptratim cohærentia. Stamina petalorum numero 4-plo (28 v. 32), uniserialia; antheræ oblongæ, subsagittatæ. Ovarium 7–10-loculare. Stigma obsolete 7–10-radiatum, stylopodio brevi conico impositum, loculis 1-ovulatis. Drupa baccata, 8–10-pyrena, pyrenis coriaceis.—Arbor Hawaiiensis, procera, inermis, foliis exstipulatis pinnatim 5–7-foliolatis, foliolis oblongis v. ellipticis utrinque obtusis v. apice acutis integerrimis, subtus incanis,

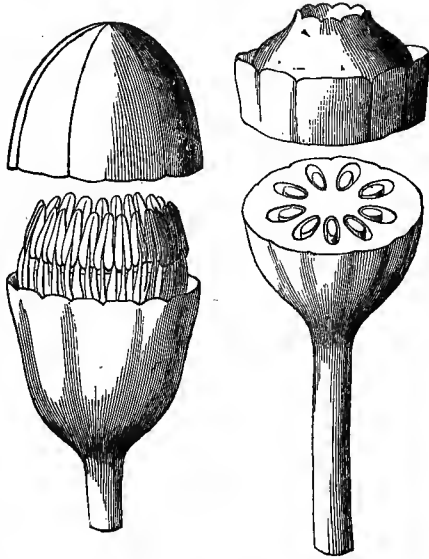
umbellis paniculatis. —
Tetraplasandra, A. Gray
 Bot. Wilkes, p. 727, t. 94
 (1854). Walp. Ann. v.
 p. 82.

1. *T. Hawaiensis*, A.
 Gray, Bot. Wilkes, p.
 728, t. 94; Walp. Ann.
 v. p. 82.—Hawaii, Sand-
 wich Islands, in the dis-
 trict of Puna (United
 States Expl. Exped.).

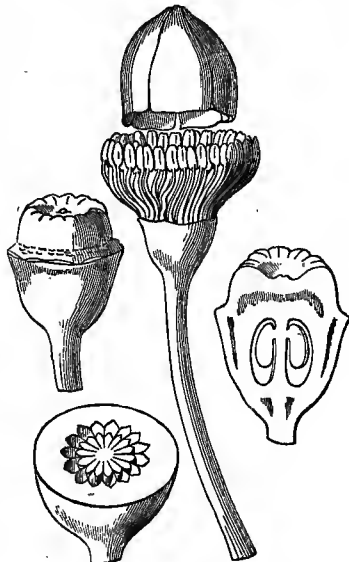
III. *PLERANDRA*, A.
 Gray. Pedicelli inarticu-
 lati. Flores ecalyculati,
 polygami. Calyx tubo
 turbinato, limbo brevis-
 simo post anthesin re-
 pandendo-undulato. Petala

ovato-triangularia, 5, ca-
 lyptratum cohærentia. Stamina
 indefinita, pluriserialia; antheræ
 oblongæ. Ovarium 12–15-locu-
 lare, loculis 1-ovulatis. Stigma
 truncatum v. depressum, obso-
 lete multiradiatum, stylopodio
 conico impositum. Drupa obo-
 vata, 12–15-loculare, loculis 1-
 spermis. — Arbores Vitienses,
 inermes, foliis exstipulatis digi-
 tatum 9-foliolatis, foliolis obo-
 vato-oblongis integerrimis, um-
 bellis compositis. — *Plerandra*,
 A. Gray, Bot. Wilkes, p. 729,
 t. 95 (1854); Walp. Ann. v. 81.

Asa Gray not having had suf-
 ficient materials, I have emen-
 dated the generic character of
Plerandra. The petals are 5,



Tetraplasandra Hawaiensis (after Asa Gray).



Plerandra Grayi.

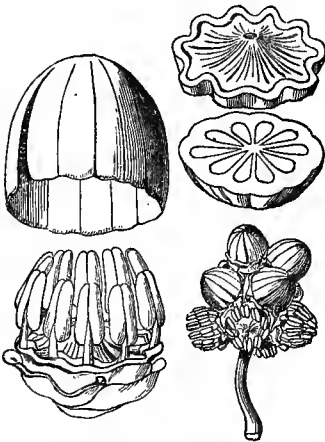
and calyptrate. Hitherto there was only one species known; the second, which I was enabled to add, I have named in honour of the illustrious founder of the genus, *P. Grayi*.

1. *P. Pickeringii*, A. Gray, Bot. Wilkes, p. 729, t. 95 (1854) Walp. Ann. v. 81.—Viti Levu (Seemann! n. 206); Vanua Levu, above Nandy (Milne!); Ovalau, Viti Islands (United States Expl. Exped.). “A tree, called ‘Vola’ by the natives of Vanua Levu” (Milne).

2. *P. Grayi*, Seem. Viti, Appendix, n. sp.; inermis, glabra, foliis digitatis, foliolis 9 obovato-oblongis obtusis basi in petiolum attenuatis integerrimis, umbellis multiradiatis, umbellulis 26-floris, calyce post anthesin repando-undulato, petalis 5 valvatis oblongis acutis calyptratim cohærentibus, mox deciduis, staminibus indefinitis, stigmatibus obscure multiradiato, ovario 12–15-loculari, drupa obovata obscure 12–15-costata.—Viti Levu, Viti Islands (Seemann!, n. 208).

A small tree. Petioles 12 inches, petiolules $1\frac{1}{2}$ inch long. The upper leaflets the largest, and their blade 6–7 inches long and $2\frac{1}{2}$ inches broad. Flowers greenish. Drupe about $\frac{3}{4}$ of an inch long, $\frac{1}{2}$ inch in diameter. Stigma depressed in the male flowers, on conical stylopodia in the hermaphrodite.

IV. *BRASSAIA*, Endl. Pedicelli subnulli. Flores calyculati, calyculo 4-phylo, polygami. Calyx tubo obconico, limbo truncato. Petala linearia, 7–17, plerumque 12, calyptratim cohærentia. Ovarium 7–17-loculare, vertice exserto multicostatum, loculis 1-ovulatis. Stigma sessile, 7–17-radiatum, stylopodio conico impostum. Drupa angulato-sulcata, 7–17-vulgo 12-locularis.—Arbores inermes, Novam Hollandiam, Novam Guineam, Amboynam et Sumatram incolentes, stipulatæ, foliis digitatim 7–16-foliolatis, foliolis subintegerrimis, capitulis racemosis, pedicellis subnullis.—*Brassaia*, Endl. Nov. Stirp. Mus. Vindob. Dec. n. 100; Gen. Plant. Suppl. i. p. 1415. *Parapanax*, Miq. Fl. Nederl. Ind. Suppl. i. p. 339, ex parte.



Brassaia actinophylla.

Sciadophylli, *Paratropiæ* sp. auct.

The genus *Brassaia*, though well defined by Endlicher, has not been recognized by other botanists. Several years after its publication (1843) Bentham described a new *Hederacea* from New Guinea, which he referred to *Sciadophyllum*, and which, in 1856, was transferred to *Paratropia* by Miquel, though he had not seen the plant; and, in order to admit it into that genus, had to amplify the generic character. More recently the same author, still unaware of the existence of *Brassaia*, established the genus *Parapanax* upon two Sumatran species, without, however, suspecting that his *Paratropia macrostachya* was congeneric with one of them. It is to be hoped that, in future, this truly natural genus will be more generally recognized. We now know representatives of it from tropical New Holland, New Guinea, Amboyna, and Sumatra, and the intermediate regions will doubtless supply additional species.

1. *B. actinophylla*, Endl. Nov. Stirp. Mus. Vindob. Decad. i. p. 89; Walp. Rep. i. p. 430, v. p. 925; F. Mueller, Fragmenta, ii. p. 108.—Tropical parts of Eastern Australia (Sir Joseph Banks! A. Cunningham! n. 484, of Second 'Mermaid's' Voyage in Mus. Brit., Robert Brown! in Herb. Hook.)

This fine tree was first discovered by Sir Joseph Banks, next found by Robert Brown, and afterwards met with "at Pine Head and similar situations" of the east coast of New Holland, north of Endeavour River by A. Cunningham, who, in his journals sent to Sir J. Banks, enumerates it under n. 484, as an *Urticacea*, appending to it the following note:—"Amentum [capitulum] 8-10-florum, subglobosum, pedicellatum, pedicello crasso. Flores 12-andri, hermaphroditi. Calyx semisuperus, subcyathiformis, dentibus [*i. e.* petalis] apice conniventibus deciduis, 3-bracteatus. Stam. 12, antherifera, calyci inserta. Anth. 2-locul. Ovarium 10-loculare. Stigm. sessile, radiatum.—Arbuscula 16-20 ped. ramis crassis brevibus, foliis 7-12-nis, foliolis ellipticis petiol. glabris mucronatis obtusis." From Dr. F. Mueller (Fragm. l. c.) we learn that Mr. Charles Moore found this tree near Boyn River, Mr. Eug. Fitzalan near Port Molle, and Leichhardt in those parts of E. Australia which he crossed. By the last-named author the tree is stated to be forty feet high, and the leaflets varying in number to sixteen. According to Ch. Moore the flowers are said to be *scarlet*, but this statement is not confirmed from what is known from other sources, nor borne out by an inspection of the specimens before me. In the copy of

'Endlicher's Iconographia' which I have consulted, there is no plate of this *Brassaia*, though Endlicher quotes it himself; and C. Koch says ('Wochenschrift,' 1859) that it has never been published.

2. *B. macrostachya*, Seem. mss.—*Sciadophyllum macrostachyum*, Benth. in Lond. Journ. of Bot. ii. (1843), p. 222; Walp. Rep. ii. p. 939. *Paratropia macrostachya*, Miq. in Bonplandia, 1856, p. 139.—New Guinea (Hinds! in Herb. Benth.).

3. *B. littorea*, Seem.—*Papaya littorea* seu *Papaja Pante*, Rumph. Amb. i. p. 150. t. 52.—Halong, Amboina, rare (Rumphius).

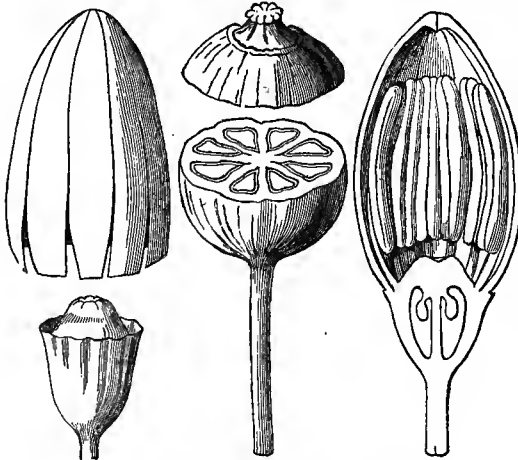
Leaves over 3 feet long, leaflets 13–16 elliptico-lanceolate, 12–15 inches long, 3 inches broad, acute on both ends. Racemes paniculate, over a foot long. Called by some Amboinese "Lau Takka," from the resemblance of its leaves to those of *Tacca*. Does not seem to have been collected since the time of Rumphius.

4. *B. sessilis*, Seem. mss.—*Parapanax sessile*, Miquel, Fl. Nederl. Ind. Suppl. i. p. 339.—Western Sumatra, near Lolo (Teijsmann).

Species exclusa:—

B. palmata, Dene. et Planch.=*Trevesia Sundaica*, Miq. fide C. Koch.

V. REYNOLDSIA, A. Gray. Pedicelli inarticulati. Flores ecalyculati, polygami. Calyx tubo obconico, limbo integerrimo v. subre-



Reynoldsia Sandwicensis (after A. Gray).

pando. Petala linearia, 8–10, calyptratim cohærentia. Stamina 8–10, uniserialia; antheræ lineares. Ovarium 8–18-loculare. Stigma 8–18-radiatum, stylopodio conico impositum. Drupa baccata, globosa, 8–18-pyrena, pyrenis cartilagineis. Embryo minu-

tus, radícula supera cylindrica.—Arbores insularum Oceani Pacifici, inermes, glabræ, exstipulatæ, foliis pinnatim 3–9-foliolatis, foliolis ovatis v. subcordatis dentatis, umbellis paniculatim compositis.—*Reynoldsia*, A. Gray, Bot. Wilkes, p. 723, t. 92 et 93; Walp. Ann. v. p. 82.

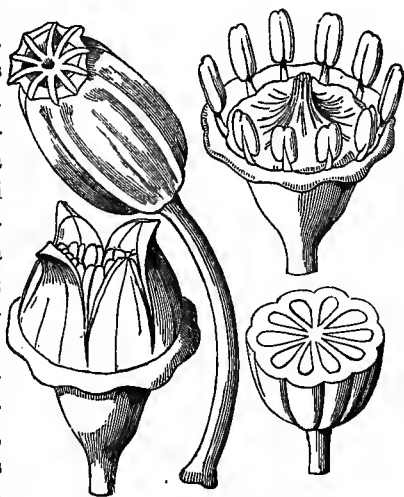
1. *R. Sandwicensis*, A. Gray, Bot. Wilkes, p. 724, t. 92; Walp. Ann. v. p. 82.—In a ravine near Waianæ, Oahu, Hawaiian (Sandwich) Islands.

2. *R. pleiosperma*, A. Gray, Bot. Wilkes, p. 725; Walp. Ann. v. p. 82.—Forests of Savaii, Samoan (Navigator) Islands.

3. *Reynoldsia verrucosa*, Seem. n. sp.; foliis pinnatis, foliolis 3–4-jugis cum impari ovatis acuminatis dentatis, dentibus glanduloso-verrucosis, umbellis 5–7-floris, pedicellis ancipitibus, calyce undulato-multidenticulato, corolla clausa subobovata, petalis staminibusque 7, ovario multiloculari, stigmate multiradiato, fructu . . .—Tahiti (Nelson! collected in Captain Cook's third voyage).

Differs from the allied *R. pleiosperma* of the Samoan Islands in the quite warty teeth of the leaves, and compressed pedicels. The whole plant glabrous. Leaflets petiolulate, $2\frac{1}{2}$ –3 inches long, $1\frac{1}{2}$ inch broad. The umbels axillary, shorter than the leaves. All the flowers in Nelson's specimens hermaphrodite.

VI. *GASTONIA*, Comm. Pedicelli inarticulati. Flores ecalyculati, hermaphroditi. Calycis tubo obconico, angulato, limbo subintegro. Petala 11, linearia, 1-nervia, basi plus minus cohærentia, æstivatione valvata. Stamina petalorum numero æqualia; antheræ oblongæ. Styli 8–10, basi ima connati, erecti, demum recurvi. Drupa oblonga, 8–10-costata, 8–10-locularis.—Arbör Mauritaniana, foliis imparipinnatis, foliolis 5 integerrimis, umbellis paniculatim, paniculis termina-



Gastonia cutisponga.

libus.—*Gastonia*, Comm. in Juss. Gen. 217; Lam. Dict. ii. p. 610; De Cand. Prodr. iv. p. 256.

The genus *Gastonia* has been incorrectly described. De Candolle ('Prodr. ii. p. 256'), to go no further back, assigns to it from 5-16* petals, and double the number of stamens, two stamens being said to be placed before each petal. Decaisne and Planchon describe the petals as 3-nerved. All three are wrong. The stamens in this, as in all other genera of the Order with definite stamens, alternate with the petals, and are equal in number with them; and they are always 1-nerved. What has given rise to the belief of their being 3-nerved is that they are very narrow, and are more or less coherent, in some instances not separating at all from each other, so that the corolla appears to have fewer petals than it really has. The normal number of petals and carpels seems to be 10. But there are sometimes fewer by abortion, or more by excess.

Gastonia is closely allied to *Grotelandia*, a genus also inhabiting the islands of Eastern Africa. Both have imparipinnate leaves and very narrow petals, but they are easily distinguished from each other, viz. :—

Gastonia. Pedicelli inarticulati. Flores ecalyculati.

Grotelandia. Pedicelli articulati. Flores calyculati.

1. *G. cutisponga*, Lam. Dict. ii. p. 610; De Cand. Prodr. iv. p. 256; *G. spongiosa*, Pers. Ench. ii. p. 20; *Bois d'éponge*, incolarum.—Mauritius (Sieber! Fl. Maurit. Exs. ii. p. 197, Carmichael! Bouton! in Herb. Kew.), growing in woods, abundantly in Mount "Pouce."

2. *Species dubia*, indescripta :—*G. saururoides*, Roxb. Cat. Hort. Calc. p. 70; *Gilibertia saururoides*, De Cand. Prodr. iv. p. 256, in the Moluccas.

Species exclusæ :—

G. aculeata, Hortor. = *Cuphocarpus aculeatus*, Dene. et Planch.

G. Candollei, Hortor. = *Brassaiopsis speciosa*, Dene. et Planch.

G. dentata, Hortor. = *Brassaiopsis speciosa*, Dene. et Planch.

G. longifolia, Hortor. = *Brassaiopsis speciosa*, Dene. et Planch.

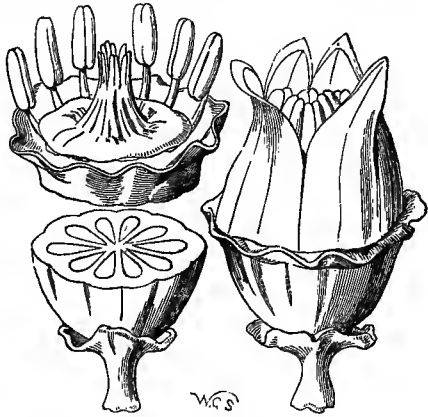
G. Nalugu, Lam. (*Gilibertia Nalugu*, De Cand.) = *Leea staphylea*, Roxb. teste Wight et Arn. Prodr. ; = *L. sambucina*, Willd. teste Miq.

G. (?) Oahuensis, A. Gray, Bot. Wilkes, p. 726, is the type of a new genus.

G. palmata, Roxb. = *Trevesia palmata*, Visian.

* "16" may possibly be a misprint for "6," else the number would be 32.

VII. GROTEFENDIA, Seem. n. gen. Pedicelli articulati. Flores calyculati, hermaphroditi. Calyx tubo obconico angulato, limbo obscure 5-6-lobato v. subintegerrimo. Petala cuneato-lineararia, 1-nervia, 11-13, basi cohærentia, æstivatione valvata. Stamina 11-13; antheræ lineares. Pollen ellipticum. Styli 5-10, compressi, erecti v. demum recurvi. Ovarium 5-10-loculare, loculis 1-ovulatis. Drupa oblonga, costata v. sublævis.—Arbores Mauritianæ, foliis exstipulatis, imparipinnatis, foliolis integerrimis v. obsolete dentatis, floribus umbellatis v. racemosis, umbellis v. racemis paniculatis.



Grotefendia cuneata.

This genus I have named in honour of Dr. Grotefend (one of the earliest decipherers of cuneate writings, and Director of the college in which I was educated), and of his son, to whom I am indebted for my first lessons in botany.

1. *G. cuneata*, Seem. mss. Glabra; foliis imparipinnatis, foliolis 11 longe petiolulatis ovatis v. subrotundato-ovatis obtusis basi acutis v. obtusis, penninerviis, subrepando-dentatis v. integerrimis, floribus racemosis, pedicellis subnullis, calyculo 5-dentato, calycis tubo obconico, limbo subintegro, petalis cuneato-linearibus 13 1-nerviis plus minusve coalitis, staminibus 13, antheris linearibus, pollinis granulis ellipticis, styliis 10 basi læviter cohærentibus, ovario 10-loculari, loculis 1-ovulatis.—*Gastonia spongiosa*, Herb. Hook. non Pers.—Mauritius (Carmichael! in Herb. Hook.; Hardwicke! in Mus. Brit.).

Leaflets 3-3½ inches long, 2½-3 inches broad; petiole ½-¾ inch long.

2. *G. paniculata*, Seem. mss. Glabra; foliis imparipinnatis, foliolis 7 oblongis elliptico-oblongis acutis v. obtusis basi acutis integerrimis penninerviis, floribus racemosis, pedicellis articulatis brevissimis, calyculo 5-dentato, calycis tubo obconico, 5-6-angu-

lato, limbo 5-6-dentato, petalis cuneato-linearibus 11 1-nerviis, plus minusve cohærentibus, staminibus 11, stylis 5-7 compressis erectis demum recurvis, fructu oblongo 5-7-angulato 5-7-loculari.—*Gastonia heptagyna*, Herb. Hook.; *Gilibertia paniculata*, De Cand. Prodr. iv. p. 256.—Mauritius, in mountainous forests (Carmichael! Bouton! in Herb. Kew.).

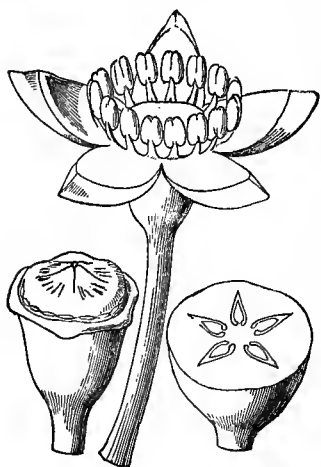
Leaflets 6-7 inches long (or smaller), 3-3½ inches broad.

That *Gilibertia paniculata*, De Cand., described from a scrap, is a synonym of this species, I was able to determine from a few flowers kindly sent to me by M. Alph. de Candolle for that purpose.

3. *G. repanda*, Seem.—*Gilibertia repanda*, De Cand. Prodr. iv. p. 256.—Mauritius (Bory! in Herb. De Candollei).

Easily distinguished from the foregoing species by its umbellate flowers and long pedicels. I am indebted to M. Alph. de Candolle for a sight of a few flowers of this species, sufficient for determining the genus.

VIII. *BAKERIA*, Seem. mss. n. gen. Pedicelli inarticulati. Flores ecalyculati. Calyx tubo turbinato cum ovario connato, limbo brevissimo repando-undulato. Petala 5, ovato-triangularia, æstivatione valvata, apice incurvula, libera, intus 1-nervia. Stamina 15, uniserialia; filamenta compressa; antheræ oblongæ. Ovarium 5-loculare, loculis 1-ovulatis. Stigma obscure 5-fidum, stylopodio subconico brevi 5-angulato sulcato impositum; fructu . . .—Arbor Vitiensis mediocris, glaberrima, inermis, foliis digitato-5-foliolatis, foliolis longe petiolulatis obovato-obtusis v. acutis in petiolum angustatis integerrimis, petiolo basi stipulato-dilatato (ut in *Agalma*), umbellulis umbellatis exinvolucratis, floribus viridiusculis.



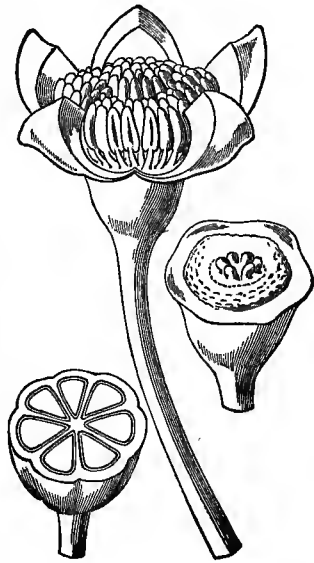
Bakeria Vitiensis.

This new genus, named in honour of Mr. J. G. Baker, of Thirsk, Yorkshire, a distinguished British botanist, differs from *Plerandra* in having free petals, a definite number of stamens (15) arranged in a

single series, and a 5-celled ovary; from *Tetraplasandra*, in having only 5 petals and a 5-celled ovary, and a different habit; from *Reynoldsia*, in having three times as many stamens as petals, and a 5-celled ovary; and from all the other genera of the Order in having 5 free petals, 15 stamens, and a 5-celled ovary. There is only one species, viz. :—

1. *B. Vitiensis*, Seem. n. sp.; a slender tree; petioles 4–5 inches long, petiolules 1 inch long; blade of leaflets 3–4 inches long, $1\frac{1}{2}$ –2 inches broad; pedicels 4-angular, not articulated.—Namosi, interior of Viti Levu (Seemann!, 209); also collected in the same island (foliage only), twenty miles inland, and there plentiful, by Milne.

IX. NESOPANAX, Seem. n. gen. Pedicelli inarticulati. Flores ecalyculati. Calyx tubo obconico, cum ovario connato; limbo supere, obsolete 5-dentato. Corollæ petala 5, ovato-triangularia, disci epigyni margini inserta, libera, æstivatione valvata. Stamina indefinita, cum petalis inserta, pluriserialia; filamenta brevissima; antheræ oblongæ. Ovarium inferum, 5–7-loculare. Ovula in loculis solitaria, pendula. Styli 5–7, breves, distincti; stigmata simplicia. Drupa oblonga, 5–7-locularis, calycis limbo stylisque coronata.—Arbor Vitiensis mediocris, glabra, inermis, foliis digitatis, foliolis 7–9 obovato-oblongis utrinque attenuatis integerrimis, petiolis basi stipulato dilatatis, umbellis multiradiatis, umbellulis 26–30-floris, floribus viridibus.



Nesopanax Vitiensis.

This genus differs from *Plerandra*, A. Gray, in having free petals, 5–7 distinct styles, and a 5–7-celled drupe. It agrees with it in habit, and the indefinite number of stamens. I have only one species:—

1. *N. Vitiensis*, Seem. n. sp.—Viti Islands (Seemann! n. 207, Milne!).

Petiole $1\frac{1}{2}$ feet long. Leaflets pinnately veined, coriaceous; blade 6–7 inches long, $2\frac{1}{2}$ –3 inches broad; petiolules $1\frac{1}{2}$ –2 inches long. Peduncles 6–8 inches long. Pedicels of fruiting specimens $1\frac{1}{2}$ –2 inches long. There is no ripe fruit.

II. ON THE GENERA WITH A SINGLE STYLE.

There are only a few genera having a single style, genera in which the ovary is elongated into a short conical stylopod being more common; these are *Brassaiopsis*, *Macropanax*, *Pentapanax*, *Agalma*, *Dendropanax*, and *Hedera*. I follow Lowe in his 'Flora of Madeira' in calling the style *single* rather than *simple*, because in *Hederaceæ* that organ is always composed of two or more styles, in the genera here provisionally grouped together so closely united as to form a single column, and separating either not at all or just a little at the top; but they never become disunited to the very base, and bend back as in *Gastonia*, *Polyscias*, *Gilibertia*, etc.

CONSPECTUS GENERUM HEDERACEARUM STYLO UNICO.

* *Ovarium 2-loculare.*

10. *Brassaiopsis*. Pedicelli inarticulati. Flores ecalyculati. Albumen æquabile.—Arbores aculeatæ Asiæ tropicæ et subtropicæ, foliis simplicibus, palmatis v. digitatim sectis.

11. *Macropanax*. Pedicelli articulati. Flores calyculati. Albumen ruminatum.—Frutices inermes Indiæ orientalis, foliis digitatim compositis.

** *Ovarium 5-(per excessum 6-)loculare.*

12. *Pentapanax*. Pedicelli articulati. Flores calyculati. Drupa exsucca. Albumen æquabile.—Arbusculæ inermes Indiæ orientalis, foliis pinnatis.

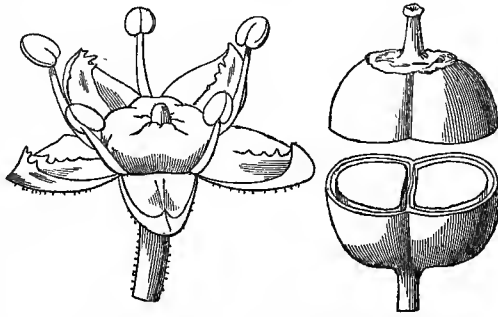
13. *Agalma*. Pedicelli inarticulati. Flores ecalyculati. Drupa exsucca. Albumen æquabile.—Arbores inermes Asiæ tropicæ, foliis digitatim compositis.

14. *Dendropanax*. Pedicelli inarticulati. Flores ecalyculati. Drupa baccata. Albumen æquabile.—Arbores inermes Americæ et Asiæ tropicæ et subtropicæ, foliis simplicibus.

15. *Hedera*. Pedicelli inarticulati. Flores ecalyculati. Drupa

baccata. Albumen ruminatum. — Frutices sarmentosi, inermes, in Europa Asia et Africa indigenæ, foliis simplicibus.

X. *BRASSAIOPSIS*, Dcne. et Planch. Pedicelli inarticulati. Flores ecalyculati, hermaphroditi. Calyx tubo obconico, limbo 5-dentato. Petala 5, ovato-triangularia, 1-nervia, apice incurvula, libera, æstivatione valvata.



Brassaiopsis speciosa (partly after Hooker).

Stamina 5, petalis alterna; filamenta filiformia; antheræ subrotundatæ. Ovarium 2-loculare, loculis 1-ovulatis. Ovula pendula. Stylus unicus, compressus; stigma obscure 2-lobatum. Drupa subglobosa, 2-locularis. Semina solitaria. Albumen æquabile. — Arbores aculeatæ in Asia tropica et subtropica vegetantes, stipulis nullis, foliis alternis longe petiolatis palmato-5-lobis, lobis argute dentatis v. digitatis 5-8-sectis; segmentis dentatis, umbellis globosis longe pedunculatis in racemes v. paniculas dispositis involucriatis, pedunculis pedicellisque compressis, floribus albidis. — *Brassaiopsis*, Dcne. et Planch. Rev. Hort. 1854, p. 106; Planch. Hort. Donat. p. 8; *Hederæ*, *Panacis*, *Kalopanax* et *Araliæ* sp. auct.

C. Koch ('Wochenschrift,' 1859, p. 364) has endeavoured to show that *Brassaiopsis* and *Macropanax* are identical, but he had evidently overlooked that *Brassaiopsis* (of which *Hedera glomerulata*, Bot. Mag. t. 4804, is the type) has inarticulate pedicels, no calyx, and a very distinct habit. It is true that Miquel referred *Hedera glomerulata* to his genus *Macropanax*; nevertheless it does not agree with the generic character he furnishes, and is very different from *M. oreophilum*. Decaisne and Planchon, in their valuable paper on *Hederaceæ*, ascribe to their new genus *Brassaiopsis* two short styles, but there is only one, as in the absence of specimens may be seen from Hooker's very correct figure; and by a slip of the pen the island of Bourbon, instead of Java, is named as the native country of *B. speciosa*.

1. *B. Hainla*, Seem. mss.—*Hedera Hainla*, Hamilton, mss. in Don, Prod. Fl. Nep. p. 187 (1825); De Cand. Prodr. iv. p. 253. *H. polycantha*, Wall. Cat. n. 4907; Wall. Plant. Asiat. t. 190; Don, Gen. Syst. iii. 392; Walp. Rep. ii. p. 431 and 432. *H. scandens*, De Cand. Prodr. iv. p. 264? *Panax palmatum*, Roxb. Fl. Ind. ii. p. 74 (1832). *P. curcifolia*, Griff. Itinerary Notes, p. 145. *Aralia palmata*, Lour. Fl. Cochinch. p. 233? non Lam. *A. scandens*, Poir. Suppl. i. p. 419?

Nepal (Hamilton! in Mus. Brit.; Wallich! n. 4907); moist valleys of Chittagong (Roxburgh); Bootan (Griffith! n. 2667), towards Oongar Bridge, in forests, 5–6000 feet (Griffith! n. 697), Sikkim (Hook. fil. et Thoms.!).

2. *B. ricinifolia*, Seem. mss.—*Panax ricinifolium*, Sieb. et Zucc. in Abhandl. Bair. Akad. iv. 2, p. 198.—*Kalopanax ricinifolium*, Miq. Ann. Mus. Bot. Lugd. Bat. vol. i. p. 16. Japan (Siebold! in Herb. Benth.), N. China (Fortune! in Herb. Mus. Brit.).

3. *B. hispida*, Seem. sp. n.; ramis petiolisque pedunculisque hispidaculeatis, aculeis rectis, foliis palmato-10-lobis, lobis ovatis v. oblongis acuminatis setoso-serratis, supra glabris, subtus ad nervos ferrugineo-hirtellis hinc inde aculeatis, umbellis multifloris (50–60) in paniculas terminales dispositis, pedicellis rufo-hirtellis, calycibus tomentosis, petalis glabris.—Bootan (Griffith! n. 2066 in Mus. Brit.).

Judging from the dried specimen, the peduncles are stiff and patent, not drooping as in *B. speciosa*. Leaves nearly a foot across; peduncles 5 inches long; bracts surrounding the base of the pedicels lanceolate-linear acute; the whole inflorescence forming terminal panicles 1–1½ feet high.

4. *B. confluens*, Seem.; ramis petiolisque aculeatis, foliis glabris palmatis 8–9-lobis, lobis pinnatifidis v. bipinnatifidis, umbellis globosis longe pedunculatis solitariis v. racemosim dispositis, junioribus stellatopubescentibus, calyce 5-dentato, stylo 1, fructu subgloboso, latiore leviter compresso, 2-spermo.—*Hedera confluens*, Wall. Cat. n. 4910, ex parte; Nepal (Wallich! n. 4910, ex parte).

The sheet of Wallich's Herbarium at the Linnean Society containing this plant, has two other *Hederaceæ* pasted on it, all three of which are labelled n. 4910. One of them is probably another species of *Brassaïopsis*, with unarmed petioles and palmate 3–5-lobed leaves; the other is a *Trevesia*.

The leaves of *B. confluens* are $1\frac{1}{2}$ foot across. The petiole is at the top expanded into the blade, from which spring 8–9 mostly bipinnatifid lobes. It is a magnificent species.

5. *B. speciosa*, Dcne. et Planch. l. c.—*Macropanax glomerulatum*, Miquel in Bonplandia, 1856, p. 139. *Aralia glomerulata*, Blum. Bijdr. p. 873. *Hedera glomerulata*, De Cand. Prodr. iv. p. 265; Hook. Bot. Mag. (1854) t. 4804; Regel, Gartenflora (1863), tab. 411. *Brassaïopsis floribunda*, Dcne. et Planch. Hort. Donat. p. 8, excel. syn. Wall. *Gastonia longifolia*, hortorum.—Java (not Bourbon, as stated by Dcne. and Planch.). Decaisne and Planchon have introduced considerable confusion into the synonymy of this species by abandoning (Hort. Donat.) the name *speciosa*, which a few months previously they gave to the plant, and quoting Wallich's *H. floribunda* as a synonym. I have retained the oldest name.

6. *B. floribunda*, Seem. mss. in Herb. Mus. Brit.—*Hedera floribunda*, Wall. Cat. n. 4912A; G. Don, Gen. Syst. iii. p. 394. *Hedera Wallichiana*, Steudl. Nom. Bot.—Nepal (Wallich! n. 4912A); Khasia Mountains, 2000–4000 feet high (Hooker fil. et Thomson!)

Segments of leaves ovate at base, minutely dentate, or almost quite entire at the edge. Peduncles unarmed.

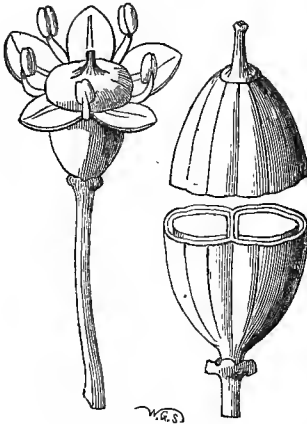
7. *B. aculeata*, Seem. mss. in Herb. Mus. Brit.—*Hedera aculeata*, Ham. in D. Don, Fl. Nepal. p. 185; De Cand. Prodr. iv. p. 264.—Nepal (Hamilton!—in Mus. Brit.).

Segments of the leaves acute at base, and coarsely serrated at the edge; umbels on stiff peduncles 2–3 inches long.

Obs.—The leaves of the last three species seem, at first sight, compound, but on closer inspection it will be found that there is no articulation at the base of the apparent leaflets, but that the top of the petiole is expanded, then suddenly contracted, and again expanded into leaflet-like segments. In *B. confluens* the same structure is repeated on a much larger scale. I took some pains to investigate this structure, as *Brassaïopsis* seemed to be the only genus of the Order in which simple and compound leaves occurred together.

8. *B. cyrtostyla*, Seem.—*Macropanax cyrtostylum*, Miq. Ann. Mus. Lugd. Bat. i. p. 13.—Sumatra (Korthals).

XI. MACROPANAX, Miquel. Pedicelli articulati. Flores calyculati, polygami. Calyx tubo obconico, limbo 5-(vel per excessum 6-) dentato. Petala 5 v. 6, ovata, libera, æstivatione valvata. Stamina 5 v. 6, petalis



Macropanax undulatum.

alterna; filamenta filiformia; antheræ ovatæ. Ovarium 2-loculare, loculis 1-ovulatis. Ovula pendula. Stylus unicus, cylindricus, stigmatibus 2 orbiculari-convexis subunitis. Drupa ellipsoidea, subsicca, lævis, 2-locularis. Semina solitaria. Albumen ruminatum.—Frutices inermes Indiæ orientalis, foliis exstipulatis digitatim 5-7-foliolatis, foliolis serratis, umbellis in racemos v. paniculas dispositis.—*Macropanax*, Miq. in Bonplandia, 1856, p. 139.

1. *M. oreophilum*, Miquel in Bonpl. l. c. p. 139; Flor. Nederl. Ind. vol. i. pars 1, p. 763. — *Panax serratum*, Wall.; in De Cand. Prodr. iv. p. 253. *Aralia disperma*, Blum. Bijdr. p. 872. *Hedera disperma*, De Cand. Prodr. iv. 265. *Aralia (?) calyculata*, Zoll. et Moritz. Syst. Verz. p. 265. *Brassaiopsis disperma*, C. Koch, Wochenschrift, 1859, p. 364.—Java (Horsfield! in Mus. Brit.; De Vriese! Junghuhn! in Herb. Hook.) 3000-4000 feet above the sea; Sumatra and Laronan (fide Miquel), Bootan (Griffith! n. 206); Nepal (Wallich! Cat. n. 4915); Khasia Hills (Hook. fil. et Thomson!).

Var. β , *foliolis multo tenuioribus*. *M. floribundum*, Miq. l. c.—*Brassaiopsis floribunda*, C. Koch, Wochenschrift, 1859, p. 364.—Java (Junghuhn! in Herb. Hook.).

2. *M. undulatum*, Seem. mss. in Herb. Mus. Brit.—*Hedera undulata*, Wall. Cat. n. 9416 A; Don, General System, iii. p. 394; Walp. Rep. ii. p. 432 (v. s. sp.)—Silhet (Wallich! n. 9416 A); Khasia (Hooker fil. et Thomson); Sikhim (Hooker fil. et Thomson!).

3. *M. concinnum*, Miq. Anu. Mus. Lugd. Bat. i. p. 220.—Java (De Vriese).

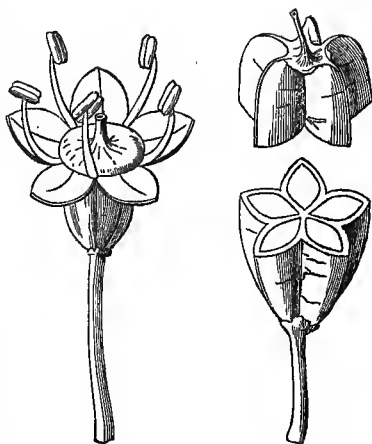
Species exclusæ :

M. cyrtostylum, Miq. = *Brassaiopsis cyrtostyla*, Seem.

M. glomerulatum, Miq. = *Brassaiopsis speciosa*, Dcne. et Planch.

XII. PENTAPANAX, Seem. gen. nov. Pedicelli articulati. Flores calyculati, hermaphroditi. Calyx tubo obconico angulato, limbo 5-

dentato. Petala 5, ovata, 1-ner-
 via, libera, æstivatione valvata.
 Stamina 5. Stylus 1, 5-angu-
 latus; stigma 5-lobatum. Fruc-
 tus oblongus, acute 5-angulatus,
 5-locularis.—Frutices v. arbus-
 culæ Indiæ orientalis, inermes,
 foliis alternis, pinnatim 3-5-fo-
 liolatis, foliolis coriaceis v. sub-
 membranaceis, ovatis v. oblon-
 gis, basi obtusis v. subcordatis,
 integerrimis, serratis v. setoso-
 serratis, racemis v. umbellis com-
 positis, pedicellis sæpe elongatis
 subfiliformibus, apice incrassatis.
 — *Pentapanax*, Seem. mss. in
 Herb. Mus. Brit. *Panaxis* et
Hederæ sp. auctor.



Pentapanax Leschenaultii.

Flores racemosi.

- Pedicelli hirtelli *P. racemosum*.
 Pedicelli glabri *P. subcordatum*.

Flores umbellati.

- Pedicelli hirtelli *P. umbellatum*.
 Pedicelli glabri.
 Foliola coriacea, integerrima *P. parasiticum*.
 Foliola membranacea, setoso-serrata *P. Leschenaultii*.

1. *P. racemosum*, Seem. mss. in Herb. Mus. Brit.; glabrum, foliis longe petiolatis pinnatim 3-5-foliolatis, foliolis petiolulatis obovatis v. ovato-oblongis, basi obtusis v. subcordatis, acuminatis, subintegerrimis, floribus distincte racemosis, racemis longis gracilibus paniculatis, pedunculis pedicellisque hirtellis, pedicellis basi bractea suffultis, calyculo fimbriato (v. s. sp.).

Sikhim (Hooker fil. et Thomson! in Herb. Mus. Brit.), 4000-6000 feet above the sea.

This plant was distributed by Drs. Hooker and Thomson under *Hedera subcordata*, Wall., but it is not identical with the species described by Don under that name from Wallich's authentic specimen. The panicles are $1\frac{1}{2}$ foot long, and at the base (as are the young leaf branches) furnished with persistent scales (perulæ).

2. *P. subcordatum*, Seem. mss. in Herb. Mus. Brit.; glabrum, foliis pinnatim 5-foliolatis, foliolis longiuscule (1-1½ poll. long.) petiolulatis ovato-oblongis acuminatis, basi rotundatis vel subcordatis, serratis, serraturis obtusiusculis, floribus distincte racemosis, pedunculis pedicellisque glabris, calyculo integro.—*Hedera subcordata*, Wall. Cat. n. 4917; G. Don, Gen. Syst. iii. p. 394 (v. s. sp.).—Silhet (Wallich! n. 4917, in Herb. Soc. Linn. Lond.); Khasia Hills (Hooker fil. et Thomson!).

Blade of leaflets from 4-5½ inches long, 3-4 inches broad.

Both this and the preceding species differ in their truly racemose flowers from the other species of *Pentapanax*, but they agree so well in every other respect, that I cannot separate them generically.

3. *P. umbellatum*, Seem. mss. in Herb. Mus. Brit., foliis pinnatim 5-foliolatis, foliolis petiolulatis ovatis acuminatis, basi obtusis, serratis coriaceis, floribus umbellatis, umbellis compositis, pedunculis pedicellisque hirtellis, calyculo subintegro (v. s. sp.).—Khasia (Hook. fil. et Thomson!).

Differs from *P. Leschenaultii* (for which it was mistaken by Hooker and Thomson) in its coriaceous, not setoso-serrate leaves, and hirtellous peduncles and pedicels, from *P. racemosum* in its umbellate flowers.

4. *P. parasiticum*, Seem. mss. in Herb. Mus. Brit.—*Hedera parasitica*, Don, Prodr. Fl. Nepal. p. 188; De Cand. Prodr. iv. p. 265. *Hedera glauca*, Wall. Cat. n. 4921; Don, Gen. Syst. iii. p. 394; Walp. Rep. ii. p. 432 (v. s. sp.).—Nepal (Hamilton! in Herb. Mus. Brit.; Wallich! n. 4921).

I have identified *Hedera parasitica*, Don, with *H. glauca*, Wall., by means of the authentic specimens, one existing in the British Museum, the other in Burlington House. *Hedera acuminata*, which Thwaites unites with *Hedera parasitica*, is at once distinguished generically by its five free styles. Leaflets quite entire, with the exception of the ultimate one, almost sessile; umbels globose terminal, simple or compound, springing from scaly buds.

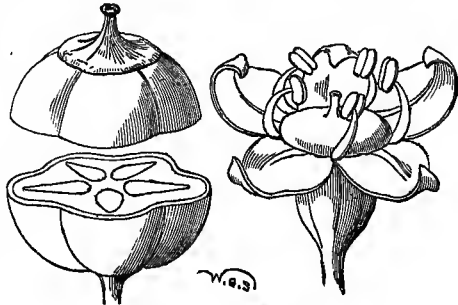
5. *P. Leschenaultii*, Seem. mss. in Herb. Mus. Brit.—*Panax Leschenaultii*, De Cand. Prodr. iv. p. 254. *Hedera Leschenaultii*, Wight et Arn. Prodr. i. p. 377. *Panax bijugum*, Wall. Cat. n. 4937; Don, Gen. Syst. iii. p. 386. *Hedera trifoliata*, Wight et Arn. Prodr. i. p. 377; Wight, Icon. Plant. t. 307. *Hedera fragrans*, Don, Fl. Nepal, p. 187, non Roxb. (v. s. sp.).—Nepal (Wallich! n. 4937); Sikhim

(Hooker fl. et Thomson !); Nilgherrie Hills (Leschenault); Kumaon (Strachey et Winterbottom !); Bootan (Griffith! n. 2065).

Wight and Arnott separate the trifoliate from the 5-foliate form, stating that they had never seen a plant where both kinds of leaves occur. There are no other differences between those two supposed species; and, as I have seen specimens with both 3- and 5-foliate leaves, I have no hesitation in uniting them under the oldest specific name.

XIII. AGALMA, Miq.

Pedicelli inarticulati. Flores ecalyculati, hermaphroditi. Calyx tubo obconico, limbo 5-6-dentato. Petala 5-6, ovato-triangularia, libera, 1-nervia, apice incurvula, æstivatione valvata. Stamina 5-6; antheræ oblongæ.



Agalma rugosum (after Miquel).

Stylus 1; stigma 5-6-lobatum. Ovarium 5-6-loculare, loculis 1-ovulatis. Drupa oblonga, exsucca, 5-6-angulata, 5-6-pyrena. Albumen æquabile. — Arbores inermes Asiæ tropicæ, foliis digitatim foliolatis, foliolis integerrimis v. dentatis, floribus racemosis v. umbellatis in paniculas dispositis, petalis viridiusculis. — *Agalma*, Miq. in Bonplandia, 1856, p. 138; Fl. Ned. Ind. i. pars i. p. 752, t. 11 et 12. — *Hederæ*, *Paratropiæ*, sp. auct.

Miquel wished to confine the genus *Agalma* to those species which have truly racemose flowers, represented typically by *A. rugosum* (*Arabia rugosa*, Blum.), and it is only in this particular that his *Agalma* differs from his *Paratropia*. Singular as is the inflorescence in *A. rugosum*, *simillimum*, and *racemosum*, few botanists would follow him in thinking that character sufficient to found a genus upon. I have therefore sought for better limits, and, adopting Miquel's two *Agalmas* as the type, added all that agreed generically with them. Most of their congeners had been referred to *Paratropia*, even by Miquel himself, where, on account of their long style, they were quite misplaced. De Candolle established *Paratropia* for plants with sessile stigmas, and three out of the four species he referred to it have sessile stigmas, the fourth being a species of *Polyscias*, and having long styles. Now

Paratropia, restricted to the species with sessile stigmas, is identical with *Heptapleurum* of Gærtner; and as the latter was established as early as 1791, that name, quite as appropriate as *Paratropia*, claims the right of priority by thirty-nine years. *Agalma* and *Heptapleurum* have certain features in common, but they differ in several essential points, viz. :—

Agalma. Stylus 1, elongatus.—Arbores plerumque terrestres, floribus viridiusculis.

Heptapleurum. Stigmata ovario immersa, punctiformia.—Arhusculæ epiphytæ, floribus viridiusculis v. sæpe purpureis v. sanguineis.

* *Flores racemosi*. (*Agalma*, Miq.)

1. *A. rugosum*, Miq. in Bonplandia, 1856, p. 138; Fl. Nederl. Ind. i. pars i. p. 752, t. 11.—*Aralia rugosa*, Blum. Bijdr. p. 871. *Polyscias rugosa*, Reinw. Herb. *Hedera rugosa*, De Cand. Prodr. iv. p. 265. *Hedera squarrosa*, Jungh. in Tijdsch. Nat. Geschied. vii. p. 301; Walp. Rep. ii. p. 432. *Hedera heptaphylla*, Jungh. Itin.—Java, 5–8000 feet above the sea (Horsfield! in Herb. Mus. Brit.; Lobb! in Herb. Hook.; Junghuhn; Blume).

2. *A. simillimum*, Miq. in Bonplandia, 1856, p. 138; Fl. Ned. Ind. l. c.—*Hedera simillima*, De Cand. Prodr. iv. p. 265. *Aralia simillima*, Blum. Bijdr. p. 871. *Hedera rugosa*, Reinw. Herb.—Java (Reinwardt).

3. *A. racemosum*, Seem. mss. in Herb. Mus. Brit.—*Hedera racemosa*, Wight Icon. Plant. t. 1015. Ootacamund (Wight); Ceylon (Thwaites! n. 549, in Mus. Brit.; Walker! in Herb. Hook.); Nilgherries (Gardner! Hohenacker!)

** *Flores umbellati*.

4. *A. octophyllum*, Seem. mss.—*Aralia octophylla*, Lour. Fl. Cochinch. (ed. Willd.) p. 233; De Cand. Prodr. iv. p. 258. *Paratropia Cantoniensis*, Hook. et Arn. Bot. Beech. n. 189; Walp. Rep. ii. p. 433.—Cochinchina (Loureiro!); Kakeah Isle (Wright! n. 101); Canton (Lord Macartney!); Macao (David Nelson!); Hongkong (Seemann! n. 2456. Hance! Urquhart! Wilferd! Hinds! Champion!); Foochoo (Swinhoe!),

5. *A. aromaticum*, Seem.—*Paratropia aromatica*, Miq. in Bonplandia, 1856, p. 139, Fl. Ned. Ind. l. c. p. 760, t. 12. *Aralia aromatica*, Blum. Bijdr. p. 871, exclud. var. *Hedera aromatica*, De Cand. Prodr. iv. p. 265.—Java (Blume! Junghuhn! in Herb. Hook).

6. *A. Horsfieldii*, Seem.—*Paratropia Horsfieldii*, Miq. in Bon-

plandia, 1856, p. 139, Fl. Ned. Ind. l. c. p. 761.—Java (Horsfield! in Mus. Brit.).

7. *A. rostratum*, Seem.—*Hedera rostrata*, Wight, Icon. t. 1013-14; Walp. Ann. i. p. 359; Sikkim (Hooker fil. et Thomson!); Nilgherries (Gardner!).

8. *A. æsculifolium*, Seem.—*Hedera æsculifolia*, Wall. Cat. n. 4913; G. Don, Gen. Syst. iii. p. 394; Walp. Rep. ii. p. 432; Nepal (Wallich! n. 4913; Strachey et Winterbottom! n. 3).

9. *A. tomentosum*, Seem.—*Panax tomentosum*, Wall. ex De Cand. Prodr. iv. p. 254. *Hedera tomentosa*, Ham. in Don Fl. Nep. p. 187; De Cand. Prodr. iv. p. 264; Wall. Cat. n. 4922. *Paratropia Wallichiana*, C. Koch, Wochenschrift, 1859, p. 365.—Nepal (Hamilton-Buchanan! Wallich!, Cat. n. 4922); Sikkim (Hooker fil. et Thomson!); Bootan (Griffith! n. 2068).

10. *A. elatum*, Seem.—*Hedera elata*, Ham. in Don, Fl. Nepal, p. 187; De Cand. Prodr. iv. p. 264.—Nepal (Hamilton-Buchanan! in Mus. Brit.; Wallich! Cat. n. 4914; Strachey et Winterbottom! n. 5).

11. *A. lucescens*, Seem.—*Paratropia lucescens*, Miq. in Bonplandia, 1856, Fl. Ned. Ind. l. c. p. 754. *Hedera lucescens*, De Cand. Prodr. iv. p. 265. *Aralia lucescens*, Blum. Bijdr. p. 272.—Java (Blume).

12. *A. glaucum*, Seem. sp. nov.; foliis digitatim 7-foliolatis, foliolis petiolulatis obovato-oblongis acuminatis integerrimis, basi obtusis v. attenuatis glabris subtus glaucis, floribus umbellatis, umbellis racemoso-paniculatis, junioribus albido-tomentosis.—Khasia (Hooker fil. et Thomson!).

Foliola 6-7-poll. longa, 1-1½ poll. lata; petioluli ½-1½ poll. longi; venæ 10-12.

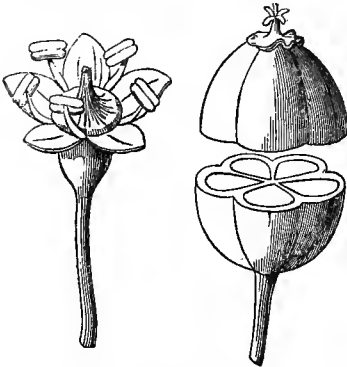
13. *A. Griffithii*, Seem. sp. nov.; foliis digitatim 7-foliolatis glabris, foliolis ovato-oblongis v. oblongis cuspidatis, integerrimis v. obscure denticulatis, basi subcordatis v. obtusis, supra viridibus lucidis, subtus subglaucis, floribus umbellatis, ramulis pedunculis pedicellis calycibusque ferrugineo-furfuraceo-tomentosis.—Bootan (Griffith! n. 2064).

Petioluli 1 poll. longi; foliola 4 poll. longa, 2-2½ poll. lata; venæ 7-9.

14. *A. redivivum*, Seem. n. sp.; scandens, epiphytum, foliis digitatim 4-5-foliolatis, foliolis longissime (3-3½ poll. long.) petiolulatis, ellipticis v. oblongo-ellipticis longe acuminatis, remote dentatis, basi

attenuatis, umbellis brevissime pedunculatis, racemosis, pedunculis pedicellis calycibusque tomentosis, floribus 7-8-meris.—Bangermassing, Borneo (Motley!, n. 1130, in Herb. Hook.).

When gathering his specimens, Motley stripped off and left on the



Dendropanax cuneatum.

ground some leaves, and on revisiting the spot their petioles were found to have made roots, some of which are in Hooker's Herbarium. Leaf-stalks $1\frac{1}{2}$ foot long; leaflets, including the petiolules, 1 foot long and from 4-5 inches broad; racemes 1 foot long.

XIV. *DENDROPANAX*, Dcne. et Planch. Pedicelli inarticulati. Flores ecalyculati, polygamo-monoici. Calyx tubo obco-

uico, limbo 5-6-dentato. Petala 5-6, ovato-triangularia, 1-nervia, æstivatione valvata. Stamina 5-6, antheræ oblongæ. Stylus 1; stigma 5-lobatum. Ovarium 5-loculare, loculis 1-ovulatis. Drupa baccata, subglobosa, obtuse 5-angularis, 5-pyrena. Albumen æquabile.—Arbores inermes Asiæ et Americæ tropicæ et subtropicæ, foliis simplicibus integris coriaceis, umbellis terminalibus, simplicibus v. compositis, floribus pedicellatis, viridiusculis v. albidis.—*Dendropanax*, Dcne. et Planch. Rev. Hort. 1854, p. 107; Planch. Hort. Donat. p. 8. *Hederæ*, sp. auct.

* *Umbellis simplicibus.*

1. *D. pendulum*, Dcne. et Planch. Rev. Hort. 1854, p. 107.—*Hedera pendula*, Swartz, Fl. Ind. Occ. p. 512; Sw. Icon. t. 9; De Cand. Prodr. iv. p. 262; Griseb. Fl. West Ind. i. p. 306.—Mountains of Jamaica, Swartz!, in Mus. Brit.; Wilson! in Herb. Hook.).

2. *D. trilobum*, Seem.—*Hedera triloba*, Gardn. in Hook. London Journ. iv. p. 105; Walp. Rep. v. p. 926.—Forests of Organ Mountains, Brazil, 4000 feet elevation (Gardner!, n. 433, in Mus. Brit. et Herb. Hook.).

3. *D. nutans*, Dcne. et Planch. Rev. Hort. 1853, p. 107.—*Hedera nutans*, Swartz, Fl. Ind. Occ. p. 514; De Cand. Prodr. iv. p. 262;

Griseb. Fl. West Ind. i. p. 306.—Mountains of Jamaica (Swartz !, in Mus. Brit. ; Alexander !, in Herb. Hook.).

Dr. Alexander Prior's specimen is a very fine one ; blade of the leaf $2\frac{1}{2}$ – $3\frac{1}{2}$ inches long, 2 – $2\frac{1}{2}$ inches broad, leaf-stalk 3–4 inches long. Flowers large for the genus. "A tree 40–50 feet high," Alexander.

4. *D. Darienense*, Seem. n. sp. ; ramis cinereis, foliis longe petiolatis ovato-oblongis v. obovato-oblongis, acuminatis, basi acutis, venis costatis 4–5, 2 infimis angule acuto ortis, umbellis solitariis longe pedunculatis, circ. 30-floris, pedunculis inarticulatis, pedicellis filiformibus elongatis.—*Hedera pendula*, Seem. Bot. Herald, p. 132, non Swartz.—By rivulets, Cape Corrientes, Darien (Seemann !, n. 1103, in Mus. Brit. et Herb. Hook.).

Petioles .1–2 inches long. Leaves coriaceous ; blade 4–5 inches long, 2 – $2\frac{1}{2}$ inches broad ; peduncles $2\frac{1}{2}$ inches long, erect ; pedicels very slender, $1\frac{1}{2}$ –2 inches long ; calyx-tubes obconical ; styles ultimately divided on the top and recurved. A comparison of my Darien plant with Swartz's authentic specimen of *Hedera pendula* at once proved their specific differences. The extreme length of the pedicels distinguishes *D. Darienense* at first sight from all its allies.

5. *D. proteum*, Benth. Fl. Hongk. p. 136.—*Hedera protea*, Champ. in Kew Journ. iv. p. 122 ; Hongkong (Champion ! Wright !).

6. *D. parviflorum*, Benth. Fl. Hongk. p. 137.—*Hedera parviflora*, Champ. in Kew Journ. iv. p. 122.—Hongkong (Champion !).

7. *D. Japonicum*, Seem.—*Hedera Japonica*, Jungh. Nov. Gen. et Sp. Plant. p. 25, n. 22 ; Walp. Rep. ii. p. 431.—Japan, not Java as stated by Walpers (Blume ! in Herb. Benth.).

8. *D. ovatum*, Seem.—*Hedera ovata*, Wall. Cat. n. 4911 ; G. Don, Gen. Syst. iii. p. 392 ; Walp. Rep. ii. 431.—Madras (Wallich ! n. 4911).

Though the bulk of species belonging to *Dendropanax* is American, the admission of *Hedera protea*, *parviflora*, *ovata*, and *Japonica*,—four Asiatic species,—is justified by their agreeing in every respect with the definition now adopted for the genus.

** *Umbellis compositis*.

9. *D. Juergenseni*, Seem. n. sp. ; glabrum, foliis ovato-oblongis v. oblongis acuminatis integerrimis, basi attenuatis, venis pinnatis horizontaliter divergentibus, umbellis terminalibus compositis, ramis (pedicellis

primariis) medio articulatis bracteatis, pedicellis (secundariis) basi bracteolis minutis ferrugineis instructis.—Sierra San Pedro Nolasco, Mexico (Jürgensen! n. 729 in Herb. Hook.).

Allied to *D. arboreum*, but all the veins diverge horizontally from the midrib, even the lowermost. Leafstalk 2–3 inches long; largest leaf-blade 7 inches long, 4 inches broad, and having 11–12 veins on each side of the costa.—In *D. arboreum* the two lowermost veins form an acute angle with the midrib, the same is the case in *D. cuneatum*.

10. *D. Fendleri*, Seem. mss. n. sp.; glabrum, robustum, foliis longe petiolatis ovatis acuminatis integerrimis crasse coriaceis, basi 3–5-nerviis, supra viridibus lucidis, subtus pallidioribus opacis, umbellis terminalibus compositis, pedicellis inarticulatis, floribus . . . , drupa baccata (nigra) 5-angulata 5-pyrena, stylis 5 basi arcte connatis apice divaricatis coronata.—Tovar, Venezuela (Fendler! n. 529).

Petiole 3 inches long; blade 4–5 inches long, 3–3½ inches broad; drupe ¾ of an inch across.

11. *D. arboreum*, Dcne. et Planch. Rev. Hort. 1854, p. 107.—*Hedera arborea*, Swartz, Fl. Ind. Occ. p. 518; De Cand. Prodr. iv. p. 262. *Aralia arborea*, Linn. Am. Ac. v. p. 369; Jacq. Hort. Schœnb. t. 51. *Hedera alaris*, Schlecht. Linnæa, ix. p. 605; Walp. Rep. ii. p. 431. *Dendropanax alare*, Dcne. et Planch. l. c. *Sciadophyllum Jacquini*, Griseb. Fl. West Ind. i. p. 306.—Jamaica (Swartz! Masson! Wright! Macfadyen! Purdie! March! Wilson! Alexander! Hartweg! n. 1544); Island of St. Vincent (Anderson!); Isthmus of Panamá (Seemann!, n. 1171; Fendler! n. 131; Hayes!); Central America (Shakespeare!); Cuba (Wright! n. 212); Bogotá (Triana!); Mexico (Jürgensen! n. 63, Botteri! F. Mueller! Lay and Collie!)

12. *D. cuneatum*, Dcne. et Planch. Rev. Hort. 1854, p. 107.—*Hedera cuneata*, De Cand. Prodr. iv. p. 262. *Aralia umbellata*, Pohl, in lit. *Dendropanax Sellowianum*, Miq. in Ann. Mus. Lugd. Bat. i. p. 27?—Brazil (Gardner! n. 4704; Claussen! Herb. Mus. Brit.; Sellow!, n. 1270); Rio Uaupé (Spruce! n. 2860).

13. *D. ramiflorum*, Seem.—*Hedera ramiflora*, De Cand. Prodr. iv. p. 262. *Aralia ramiflora*, Pohl, in lit. *Hedera resinosa*, Benth. mss. in Plant. Sprucean.—Rio Negro, N. Brazil (Spruce! nos. 2350, 2337, 2349).

14. *D. tomentosum*, Seem.; robustum, ramis crassis tomentosis mox glabratiss, foliis obovato-oblongis acutis mucronatis, basi cuneatis,

supra glabris lucidis, subtus dense ferrugineo-tomentosis, floribus racemosis v. umbellis racemosim paniculatis, pedunculis petiolis calycibus petalisque ferrugineo-tomentosis, pedicellis brevissimis.—Minas Geraes (Gardner ! n. 4703 ; Claussen ! in Mus. Brit.).

Petioles $\frac{1}{2}$ –1 inch long. Blade of leaf thick, coriaceous, from 3–5 inches long, $1\frac{1}{2}$ –2 inches broad. Veins 7–8, on each side of the midrib.

*** *Species indescriptæ.*

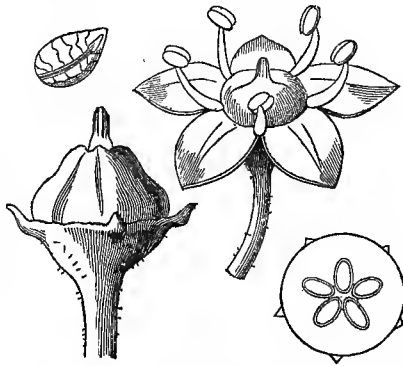
15. *D. montanum*, Dcne. et Planch. l. c.
16. *D. lanceolatum*, Dcne. et Planch. l. c.
17. *D. obovatum*, Dcne. et Planch. l. c.
18. *D. oblongum*, Dcne. et Planch. l. c.
19. *D. densiflorum*, Dcne. et Planch. l. c.
20. *D. lancifolium*, Dcne. et Planch. l. c.
21. *D. citrifolium*, Dcne. et Planch. l. c.

**** *Species exclusæ.*

D. Pavonii, Dcne. et Planch. l. c. (*Aralia umbellata*, Herb. Pav.) = *Gilibertia umbellata*, Ruiz et Pavon.

XV. *HEDERA*, Linn.

Pedicelli inarticulati. Flores ecalyculati, hermaphroditi. Calyx tubo obconico, limbo 5-dentato. Petala 5, ovato-triangularia, 1-nervia, libera, æstivatione valvata. Stamina 5 ; antheræ oblongæ. Ovarium 5-loculare, loculis 1-ovulatis. Stylus 1, elongatus ; stigma obscure 5-lobatum. Drupa baccata, subglobosa, lævis, 5-pyrena. Albumen ruminatum. Embryo magnus.—Frutices sarmentosi inermes Europæ, Asiæ et Africæ indigenæ, foliis exstipulatis simplicibus palmatim lobatis v. integris, umbellis racemosim v. paniculatim dispositis, floribus viridiusculis, drupis nigris flavis v. albidis.—*Hedera*, Linn. Gen. n. 395 (ed. Schreb.) ; De Cand. Prodr. iv. p. 261, excl. sp. ; Koch, Synops. Germ. Fl. p. 321.

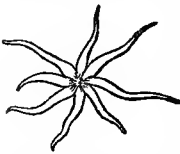


Hedera Helix (partly after Nees von Esenbeck).

inermes Europæ, Asiæ et Africæ indigenæ, foliis exstipulatis simplicibus palmatim lobatis v. integris, umbellis racemosim v. paniculatim dispositis, floribus viridiusculis, drupis nigris flavis v. albidis.—*Hedera*, Linn. Gen. n. 395 (ed. Schreb.) ; De Cand. Prodr. iv. p. 261, excl. sp. ; Koch, Synops. Germ. Fl. p. 321.

Whether there is only one species or several mixed up with the plants which now go in gardens and herbaria under the name of *Hedera Helix*, and make up the genus *Hedera*, as now circumscribed, and whether one or two species are indigenous to the British Islands are still open questions. No botanist has, as yet, been successful in finding good characters for what have been considered as species; and though all other *Hederaceæ* have a limited geographical range, *Hedera Helix* is supposed to be an exception to this rule, and to be spread over three continents, Europe, Asia, and Africa, from the Canary Islands to Japan, and that this circumstance alone sufficiently accounts for the numerous existing varieties. After carefully investigating the subject, and examining every specimen I could lay my hands on, aided by contributions from botanical friends, I have arrived at a different conclusion. I can clearly distinguish three distinct species, which, though having each many varieties, do not run into each other, and have each a distinct geographical range. If these different species had to be named anew, I would propose to call them respectively the European, the African, and the Asiatic.

The European Ivy is *Hedera Helix*, Linn. It is not found out of Europe, and may at once be known by its uppermost leaves being ovate or elliptical, its umbels arranged in simple racemes, and its pedicels and calyx being covered with white stellate hair, the hair

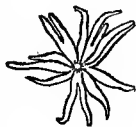


having from 6-8, but never more, rays. From time immemorial a variety with white and yellow variegated leaves has been cultivated in gardens; even Pliny mentions it; indeed it is one of the oldest, if not the oldest, variegated garden plant of which we have any record. The fruit of *Hedera*

Hair of *H. Helix*. *Helix* in northern Europe is generally black; in Germany it occurs occasionally with white; and in European Turkey, Greece, and Italy with yellow berries. The black-fruited kind has always been considered as the true *H. Helix*, and the white as a variety of it, which indeed it is; but the yellow has been made, I think, unjustly into a distinct species, and named *H. poetarum* by Bertoloni, and some time previously *H. chrysocarpa* by Walsh. It is the latter plant which played so important a part in ancient Greece and Rome, its leaves supplying the materials for the wreaths with which poets were crowned, and at the festivals in honour of Dionysos all casks,

vessels, amphoras, etc. were decorated; it was customary even to lie and sit upon ivy branches on those occasions.* It is believed traditionally that the yellow-fruited Ivy came from India with the worship of Bacchus; and the fact that the Nepal Ivy described by Wallich has yellow fruit is regarded as a proof of the correctness of this tradition. But a close examination of the European yellow-fruited plant shows that it is specifically identical with *H. Helix*, and specifically different from the Nepal and all other Asiatic specimens. If the worship of Dionysos gradually crept from India to Greece and Rome, and a yellow-fruited Ivy was deemed essential to its proper performance, there was no need of carrying the Asiatic plant into Europe, as an indigenous variety (*chrysocharpa=poetarum*) occurred at the very threshold; whilst the Asiatic Ivy, as we shall presently see, is spread from the central highlands to the most western confines of Asia,—to ancient Colchis.

The African Ivy is *Hedera Canariensis*, Willd. It is found in the Canary Islands, Madeira, and the north of Africa, and may at once be known by its uppermost leaves being cordate, its umbels arranged in panicles, rarely and only in young plants in simple racemes, and its pedicels and calyx being covered with white stellate hair, the hair having from 13–15 rays. To this must be referred what is called in gardens sharp-leaved Irish Ivy. It is a much quicker-growing plant than *H. Helix*, and on that account frequently planted in gardens. Dr. Moore, of Glasnevin, informs me that it was discovered many years ago by a nurseryman named Hair of *H. Canariensis*. Hodgins, in the county of Wicklow, Ireland, and the fact that it has lately been found in Portugal, and therefore belongs to the so-called Iberian type of the British flora, would seem a confirmation of its being truly indigenous in Ireland. This *sharp-leaved* Irish Ivy is a form rather than variety of *Hedera Canariensis*, with more or less deeply-lobed leaves, and must not be confounded with what is called Irish or Scotch Ivy (*Hedera Hibernica* v. *Scotica*) in our gardens. The latter is a large-leaved and quick-growing form of *H. Helix*, more susceptible to *cold* than the common North European form of that species.



The Asiatic Ivy is *Hedera Colchica*, C. Koch. It is not found out

For further particulars, see C. Bötticher, 'Baumkultus der Hellenen' (Tree-worship of the Hellenes), Berlin, 1856, 8vo, p. 333.

of Asia, and may be known by its uppermost leaves being elliptical or lanceolate, its umbels arranged in simple racemes, and its pedicels and calyx being covered with yellowish 2-lobed scales, the lobes being



Scales of
H. Colchica.

opposite each other, and divided into 7-10 segments. Our first knowledge of this plant is derived from Kæmpfer, who, two centuries ago, found it in Japan, where it is called "Fotogi Tsta (*i. e. simulacri seu idoli Hedera*).” It was afterwards gathered by Wallich and other collectors in the Himalaya Mountains, by Fortune in Northern China, by Wright in the Loochoo Islands, and by C. Koch in the trans-Caucasian countries. Wallich was the first to describe the plant, though he did not venture to separate it from *H. Helix*; in fact, the important character furnished by the scales escaped him. It was not until 1859 that C. Koch, who had seen it wild, named it *Hedera Colchica*, and gave a correct diagnosis of it. It is owing to an authentic specimen kindly transmitted by him that I am able to identify this new species with the Asiatic Ivy. *Hedera Colchica* is now an inmate of our gardens, it having been found on the Caucasian coast of the Black Sea, by Mr. Rœgner, formerly Curator of the Botanic Gardens of Odessa. Thus it found its way into our gardens, occurring here and there under the (I believe unpublished) name of *Hedera Rœgneriana*. The only two popular accounts of this plant are given by Wallich and C. Koch. In Nepal it is called Sagooke or Gooke (*i. e. the climber*), "and is," says Wallich (Roxb. Fl. Ind. ii. p. 515), one of the most common, as well as the most noble productions of Nepal, where it grows to a majestic size, and extends over trees and rocks." In Transcaucasia, on the contrary, it is more stunted than the European Ivy, having reached its western geographical limit; "and," says C. Koch ('Wochenschrift,' 1859, p. 76), "I have never seen it ascend the tops of the numerous Beeches of that country, whilst the common Ivy climbed to the highest branches."

Though there are several important peculiarities to distinguish the three species, the most ready way to make sure of them is to look at the character furnished by the hairs and scales. They are largest in *H. Helix*, where they may be seen distinctly with a common pocket lens; but in the two other species it requires a greater magnifying power to make their nature quite intelligible.

- Pilis pedicelli et calycis stellato-6-8-radiatis *H. Helix*.
 Pilis pedicelli et calycis stellato-13-15-radiatis *H. Canariensis*.
 Squamis pedicelli et calycis bilobis, lobis 7-10-fidis *H. Colchica*.

1. *H. Helix*, Linn. Sp. 292; Koch, Synops. Fl. Germ. p. 321; Sowerby, Engl. Bot. t. 1267; De Cand. Prodr. iv. p. 261, ex parte. —*H. communis*, S. F. Gray, Natural Arrang. of British Plants (1821), p. 491.—Europe.

Var. *u. melanocarpa*, Seem., baccis nigris. Engl. Bot. t. 1267. —*Hedera Helix*, var. *vulgaris*, De Cand. Prodr. l. c.—Common in Northern Europe, and varying with white and yellow blotched leaves. Or does the white-leaved form belong to the following variety and the yellow-leaved to *γ. chrysocarpa*? Has any one ever seen them in fruit?

Var. *β. leucocarpa*, Seem., baccis albis.—In Germany, rare.

Var. *γ. chrysocarpa*, Ten. in Caruel, Fl. Tosc. p. 300, non De Cand. —Baccis flavis. *Hedera chrysocarpa*, Walsh in Trans. Hort. Society of London, vi. 42 (1826). *H. poetarum*, Bertol. Prælectiones rei Herb. p. 78 (1827). *H. poetica*, Casp. Bauh. Pin. 305. *H. Dionysias*, J. Bauh. Hist. Ic. *Hedera chrysocarpos*, seu *Dionysiacos veterum*. *Ederæ* genus *chrysocarpon*, Plin. Hist. *Kissos* of the ancient Greeks. —European Turkey, Greece (Heldreich!), and S. and Central Italy.

2. *H. Canariensis*, Willd. in Berl. Mag. ii. p. 170. t. 5. f. 1; Schult. Syst. v. p. 503.—*H. Helix*, var. (?) *Canariensis*, De Cand. l. c. *H. Helix*, Lowe, Fl. Mad. p. 376, non Linn.—Algiers, Madeira (Lowe!) Portugal (Welwitsch!), Canary Islands (Bourgeau!), and Ireland.

3. *H. Colchica*, C. Koch, 'Wochenschrift,' 1859, p. 76.—*H. Helix*, var. *Colchica*, C. Koch in Linnæa, xvi. p. 365; Regel, Gartenflora, 1862, tab. 360. *H. Helix*, Don, Fl. Nep. p. 187; Wallich in Roxb. Fl. Ind. ii. p. 515. *H. Helix*, var. (?) *chrysocarpa*, De Cand. Prodr. iv. p. 261, exclud. syn. Bauh. et Dalechamp. *H. Helix*, Thunb. Fl. Jap. p. 102. "Fotogi Tsta, i. e. simulacri seu idoli *Hedera*. *Hedera* arbores communes bacciferæ," Kæmpf. Amœn. Exot. Fasc. v. p. 887. *H. rhombea*, Sieb. et Zucc. in Abhand. Bayer. Akad. Math. Ph. Cl. vol. iv. p. 202, sine descript. *Cissus Wallichiana*, Turcz. in Mosc. Bullet., 1838, p. 416.—Japan (Thunberg! in Mus. Brit.); Loochoo (Wright! n. 102); N. China (Fortune! n. 60); Bootan (Griffith! n. 2076, in Mus. Brit.); Nepal (Hamilton! in Mus. Brit.; Wallich! Strachey et Winterbottom!); Khasia (Hooker fil. et Thomson!); Sikkim Hooker fil. et Thomson!); Transcaucasia (C. Koch!); Black Sea, shores of Caucasia (Rocgner).

Species exclusæ :—

- H. acerifolia*, De Cand. = *Oreopanax* (?) *acerifolium*, Seem.
H. aculeata, Ham. = *Brassaiopsis aculeata*, Seem.
H. acuminata, Wight = *Polyscias acuminata*, Seem.
H. acutifolia, De Cand. = (?) *Dendropanax*.
H. æsculifolia, Wall. = *Agalma æsculifolium*, Seem.
H. alaris, Schlecht. = *Dendropanax arboreum*, Dcne. et Planch.
H. angularis, De Cand. = *Oreopanax* (?) *angulare*, Seem.
H. arborea, Sw. = *Dendropanax arboreum*, Dcne. et Planch.
H. argentata, De Cand. = *Oreopanax argentatum*, Dcne. et Planch.
H. aromatica, De Cand. = *Agalma aromaticum*, Seem.
H. Australiana, F. Müller = *Kissodendron Australianum*, Seem.
H. avicenniæfolia, De Cand. = *Oreopanax avicenniæfolium*, D. et Pl.
H. capitata, Smith = *Oreopanax capitatum*, Dcne. et Planch.
H. catalpæfolia, De Cand. = *Oreopanax catalpæfolium*, D. et Pl.
H. cheirophylla, De Cand. = *Oreopanax* (?) *Cheirophyllum*, Seem.
H. corymbosa, Chois. = *Hydnocarpus corymbosus*, Seem.
H. crassinervia, De Cand. = *Oreopanax crassinervium*, Dcne. et Planch.
H. (?) Cumanensis, De Cand. = *Oreopanax* (?) *Cumanense*, D. et Pl.
H. cuneata, De Cand. = *Dendropanax cuneatum*, Dcne. et Planch.
H. discolor, De Cand. = *Oreopanax discolor*, Dcne. et Planch.
H. disperma, De Cand. = *Macropanax oreophilum*, Miq.
H. Echinops, G. Don = *Oreopanax Echinops*, Dcne. et Planch.
H. elata, Ham. = *Agalma elatum*, Seem.
H. ferruginea, De Cand. = *Sciadophyllum ferrugineum*, D. et Pl.
H. ferruginea, Wall. = *Trevesia*.
H. floribunda, De Cand. = *Oreopanax floribundum*, Dcne. et Planch.
H. floribunda, Wall. = *Brassaiopsis floribunda*, Seem.
H. fragrans, D. Don = *Pentapanax Leschenaultii*, Seem.
H. fragrans, Spr. = *Heteropanax fragrans*, Seem.
H. Gaudichaudii, A. Gray = *Cheirodendron*.
H. glauca, Wall. = *Pentapanax parasiticum*, Seem.
H. glomerulata, De Cand. = *Brassaiopsis speciosa*, Dcne. et Planch.
H. Hainla, Ham. = *Brassaiopsis Hainla*, Seem.
H. heptaphylla, Jüngh. = *Agalma rugosum*, Miq.
H. heterophylla, Wall. = *Heptapleurum heterophyllum*, Seem.
H. hypoglauca, Hance = *Vitis Cantoniensis*, Seem.
H. Jackiana, G. Don = *Arthrophyllum*.

- H. Japonica*, Jungh. = *Dendropanax Japonicum*, Seem.
H. jatrophæfolia, De Cand. = *Oreopanax jatrophæfolium*, Dc. et Pl.
H. latifolia, Wight et Arn. = Gen. nov. (?).
H. Leschenaultii, Wight et Arn. = *Pentapanax Leschenaultii*, Seem.
H. lucescens, De Cand. = *Agalma lucescens*, Seem.
H. multiflora, Dc Cand. = *Oreopanax capitatum*, Dcne. et Planch.
H. Mutisiana, De Cand. = *Oreopanax Mutisiana*, Dcne. et Planch.
H. nutans, Sw. = *Dendropanax nutans*, Dcne. et Planch.
H. obovata, Wight = *Heptapleurum stellatum*, Gærtn.
H. obtusiloba, De Cand. = *Oreopanax obtusilobum*, Dcne. et Planch.
H. ovata, Wall. = *Dendropanax ovatum*, Seem.
H. palmatum, Wall. = *Trevesia*.
H. parasitica, Don = *Pentapanax parasiticum*, Seem.
H. parviflora, Champ. = *Dendropanax parviflorum*, Bth.
H. pendula, Sw. = *Dendropanax pendulum*, Dcne. et Planch.
H. platanifolia, De Cand. = *Oreopanax platanifolium*, D. et Pl.
H. platyphylla, A. Gray = *Cheirodendron*.
H. polyacantha, Wall. = *Brassaiopsis Hainla*, Seem.
H. protea, Champ. = *Dendropanax proteum*, Bth.
H. quinquefolia, Linn. = *Ampelopsis hederacea*, De Cand.
H. racemosa, Wight = *Agalma racemosum*, Seem.
H. ramiflora, De Cand. = *Dendropanax ramiflorum*, Seem.
H. reticulata, De Cand. = *Oreopanax* (?) *reticulatum*, D. et P.
H. rostrata, Wight = *Agalma rostratum*, Seem.
H. rugosa, De Cand. = *Agalma rugosum*, Miq.
H. scandens, De Cand. = *Brassaiopsis Hainla*, Seem.
H. Sciadophyllum, Swartz = *Sciadophyllum Brownei*, Spr.
H. sessiliflora, Bth. = *Oreopanax sessiliflorum*, Dcne. et Planch.
H. septemnervea, De Cand. = *Oreopanax septemnerve*, Dcne. et Planch.
H. simillima, De Cand. = *Agalma simillimum*, Miq.
H. Soluensis, Steudl. = *Trevesia*.
H. squarrosa, Jungh. = *Agalma rugosum*, Miq.
H. subcordata, Wall. = *Pentapanax subcordatum*, Seem.
H. terebinthacea, Vahl = *Heptapleurum stellatum*, Gærtn.
H. terebinthacea, Wall. = *Heptapleurum venulosum*, Seem.
H. tomentosa, Ham. = *Agalma tomentosum*, Seem.
H. trifoliata, Wight et Arn. = *Pentapanax Leschenaultii*, Seem.
H. triloba, Gardn. = *Dendropanax trilobum*, Seem.

- H. Turbacensis*, De Cand. = *Oreopanax* (?) *Turbacense*, D. et Pl.
H. umbellifera, De Cand. = *Osmoxylon Amboinense*, Miq.
H. undulata, Wall. = *Macropanax undulatum*, Seem.
H. unifolia, Arrab. =
H. verticillata, Zippl. = *Heptapleurum verticillatum*, Seem.
H. Wallichiana, Steudl. = *Brassaiopsis floribunda*, Seem.
H. Xalapensis, De Cand. = *Oreopanax Xalapense*, Dene. et Planch.

III. ON SPHÆRODENDRON, A NEW AFRICAN GENUS.

Hederaceæ are represented in Africa by the genera *Oligoscias*, Seem., *Hedera*, Linn., *Maralia*, Thouars, *Sciadophyllum*, P. Browne, *Grotefendia*, Seem. (*Botryodendron*, Miq.), *Gastonia*, Comm., *Sciadopanax*, Seem., *Cussonia*, Thunb., and *Hydrocotyle*, Linn., and from the tropical parts of the west coast we know only four woody species (*Sciadophyllum Manni*, Seem., *S. Barteri*, Seem., *S. Baikei*, Seem., and *S. elatum*, Seem.), which have a natural ally in *S. Abyssinicum* (*Aralia Abyssinica*, Hochst.). To these the indefatigable Dr. Welwitsch has made a valuable addition by the discovery of a new genus, which I propose to name *Sphærodendron*, in allusion to the perfectly round crown of the tree (see Fig. 1 of our Plate). This feature is so striking that on account of it, *Sphærodendron* is planted as a boundary tree of fields, a purpose for which its ready and quick growth otherwise well qualifies it.* According to Dr. Welwitsch this species often grows gregariously, and even forms entire woods, the singular aspect of which one of his sketches enables me to realize. The wood is hard, tough, and durable, and serves for many useful purposes.

Sphærodendron differs from *Cussonia* by its non-ruminate albumen, from *Nothopanax* by its inarticulate pedicels, from *Tetrapanax* by its dry fruit, and from *Sciadopanax* by its evittate fruit and inarticulate pedicels. The following generic characters have been drawn up from a fine set of specimens and copious notes, kindly placed at my disposal by the discoverer.

SPHÆRODENDRON (gen. nov.), Seem. Pedicelli inarticulati. Flores ecalyculati, hermaphroditi. Calyx tubo ovato, limbo minute 5-dentato. Petala 5, ovato-triangularia, 1-nervia, apice incurvula, libera,

* In the Isthmus of Panama and about Carthagena, *Sciadodendron excelsum*, Griseb. Bonplandia, 1858, p. 7, a remarkable *Araliaceæ*, is used for making living fences; large poles, struck into the ground, take root as readily as our Willows do.

æstivatione valvata. Stamina 5, petalis alterna; filamenta filiformia, antheræ ovatæ. Ovarium inferum, 2-loculare, loculis 1-ovulatis. Ovula pendula. Styli 2, basi connati, erecti, demum recurvi, apice stigmatosi. Drupa ovata, obscure angulata, evittata, exsucca, 2-pyrrena. Semina solitaria, dorso convexa, faciei plana. Albumen æquabile.—Arbor Angolensis, 15–30-pedalis, trunco 1–2-ped. diam., stric-tissime recto, adulto longe nudo, apice comam exacte sphæricam ramorum foliorumque ferente, aspectu admodum singulari, cortice spongioso, ligno albo tenace durabili, ramulis junioribus petiolis costisque foliolorum floccoso-ferrugineo-tomentosis mox glabratis, foliis alternis digitatim 6–8-foliolatis, foliolis longe petiolulatis ovatis acuminatis, irregulariter subduplicato-serratis, stipulis binis linearibus denticulatis cum petiolo basi connatis, racemos elongatis in apice ramorum clavato spongiose tumido, congestis, floribus solitariis pedicellatis viridescensibus, basi bracteatis.

1. *S. Angolense*, Seem. Tab. I.—Habitat in sylvis humilioribus distr. Ambaca et juxta ripas Rivi de Luxillo et fluminis Cuanza, locis minus humidis, 2400–3800 ped. alt. (Welwitsch! Iter Angol. n. 479, 480.)

Petiole about 1–1½ ft. long, at the insertion of the petiolules with a tuft of brown hair. Leaflets coriaceous, green, shining, 3–5 inches long, 2½–3 inches broad; petiolule 1½–3 inches long. Stipules 1–1½ inches long. Racemes about 1½ feet long, scaly at base, the scales broadly ovate, acute or acuminate, and gradually merging into bracts; rhachis and bracts crowned with a short brown tomentum, afterwards glabrescent. Pedicels pubescent. Calyx and corolla glabrous.

EXPLANATION OF PLATE I., representing *Sphærodendron Angolense*.—Fig. 1. Portrait of the tree, from a sketch by Dr. Welwitsch. 2. One of the larger leaflets. 3. An entire flower. 4. Portion of the raceme in fruit. 5. A fruit (not quite ripe). 6. The same, cut across. Figs. 3, 4, 5, and 6, magnified.

IV. ON SCIADOPANAX, A NEW AFRICAN GENUS.

By the courtesy of Sir W. J. Hooker, I am able to give an illustration of a new East African genus of *Hederaceæ*, discovered by M. Boivin, at Nossibé, Madagascar, which I propose to name *Sciadopanax*. It shares with the American genus *Didymopanax* the peculiarity of having *vittæ*, but it differs from all the other genera I have examined by its very singular four-lobed seeds. When I first saw it at the Kew

Herbarium, I fancied it might possibly be the obscurely known *Maralia Madagascariensis*, and to make quite sure I forwarded a proof of my plate to my friend Señor Triana, to compare it with the authentic specimens of *Maralia* existing at the Paris Herbarium. Señor Triana communicated on the subject with M. Decaisne, to whom we are indebted for one of the ablest papers on *Hederaceæ*, and the latter very kindly took the trouble to compare my plate with the plant in question. The subjoined extract from his letter informs me of the result:—

“I have examined plate xxvii. of the ‘Journal of Botany’ and compared it with *Maralia Madagascariensis* of Petit Thouars’ herbarium (*Panax Maralia*, Dcne. et Planch.). The plant figured is not our *Panax Maralia*, but a distinct species, collected at Nossibé by Boivin, and named *Panax Boivini*, Dcne. mss. in Herb. Par. According to Boivin, it was met with on the seashore at Ampambilava, August, 1851, and forms a tree 30–40 feet high, with few and slightly divided branches, and the leaves crowded at their extremities. I enclose a leaflet and a few fruits of *Panax Boivini*, so that the identity may be well established. The true *Maralia Madagascariensis* = *Panax Maralia* has coriaceous leaflets, very similar to those of certain *Jasmineæ*; the umbellules are composed of 3–5 flowers, and the fruit has from 3–5 styles, I regret that I cannot send more than a single leaflet for comparison.”

Sciadopanax seems to occupy the same position towards *Maralia* as does *Nothopanax* towards *Polyscias* (*Eupteron*); it belongs to the dicarpous series, *Maralia* to the pentacarpous, whilst both have pinnated leaves, a similar inflorescence, and the same native country. It would be desirable to have a good figure and description of *Maralia*, which anybody living at Paris might easily furnish. Good flowering-specimens of *Sciadopanax* are also a great desideratum.

XVII. *SCIADOPANAX*, Seem. (nov. gen.) Pedicelli articulati. Flores ecalyculati. Calyx tubo ovato, limbo obscure 5-dentato. Petala . . . Stamina . . . Ovarium inferum, 2-loculare, loculis 1-ovulatis. Ovula pendula. Stigmata 2, stylopodio conico imposita. Drupa ovato-cylindrica, exsucca, 10-costata, 8-vittata, 2-pyrena. Semina cruciatim 4-loba. Albumen æquabile.—Arbor Madagascariensis, 30–40-pedalis, glaber, sparsim ramosus, ramis teretibus, foliis alternis exstipulatis imparipinnatis, foliolis scssilibus v. breviter petiolulatis, ovatis acuminatis v. ellipticis integerrimis, umbellulis racemoso-paniculatis. Species unica:—

1. *S. Boivini*, Seem. mss. (Tab. nostr. II).—*Panax Boivini*, Decne. mss. in Herb. Par.—Nossibé, Madagascar (Boivin!, in Herb. Kew. et Par.).

EXPLANATION OF PLATE II., representing *Sciadopanax Boivini*, from a specimen preserved in Sir W. J. Hooker's herbarium.—Fig. 1. Part of the inflorescence. 2. Fruit. 3. Longitudinal section of the same. 4. Cross section of the same. Figs. 2, 3, and 4, magnified.

V. ON THE GENERA WITH SESSILE STIGMAS.

The *Hederaceæ* having stigmas not placed on stylopodia, but immediately on the top of the ovary, belong to two Asiatic genera, one recently founded by Miquel (*Osmoxylon*), the other many years ago by Gærtner (*Heptapleurum*). *Osmoxylon* is but imperfectly known.

CONSPECTUS GENERUM HEDERACEARUM STIGMATIBUS SESSILIBUS.

18. *Osmoxylon*. Flores capitulati. Stigma semiglobosum, omnino indivisum, papilloso-puber.—Arbor Indiæ orientalis, foliis simplicibus.

19. *Heptapleurum*. Flores umbellati. Stigmata distincta, ovario immersa, punctiformia.—Arbusculæ epiphytæ Asiæ et Australiæ tropicæ, foliis duplicato- v. simpliciter digitatis, v. rarissime 1-foliolatis.

XVIII. *OSMOXYLON*, Miq. Flores capitulati. Calyx tubo subcylindrico, limbo dilatato integerrimo. Petala . . . Stamina . . . Discus epigynus, centro elevatus, stigmate semigloboso omnino indiviso papilloso pubere. Ovarium 8–10-loculare. Drupa calycis margine detruncato disco stigmatifero tecta, pericarpio carnuloso, ovoidea, 8–10-pyrena. Albumen . . .—Arbor inermis Amboinensis, resinifera, foliis longe petiolatis lanceolatis acuminatis rariter serratis, floribus capitulatis, capitulis umbellatis.—*Osmoxylon*, Miq. Ann. Lugd. Bat. i. p. 5. *Hederæ*, *Araliæ* et *Gastoniæ*, sp. auct.

1. *O. Amboynense*, Miq. Ann. Lugd. Bat. i. p. 5.—*Aralia umbellifera*, Lam. Dict. i. p. 225. *Hedera umbellifera*, De Cánd. Prodr. iv. p. 262. *Gastonia simplicifolia*, Zippel, mss. *G. saururoides*, Roxb. Fl. Ind. i. p. 408? *Pseudo-Santalum Amboynense*, Rumph. Amb. ii. p. 54, t. 12.

The gum resin exuded by this tree is called "Saruru" by the Amboynese. Is Roxburgh's name *Gastonia saururoides* derived from this??

XIX. *HEPTAPLEURUM*, Gærtn. Pedicelli inarticulati. Flores ecalyculati, hermaphroditi. Calyx tubo obconico, limbo brevissimo trun-

cato v. rarius obscure repando. Petala 5-7, ovato-triangularia libera v. calyptratim cohærentia. Stamina petalorum numero, filamentis subulatis v. filiformibus, antheris oblongis. Stigmata parva, loculorum numero, papillæformia, in disci vertice circulariter disposita. Drupa disco glanduloso coronata, sulcato-angulata, matura subsicca, 4-7-pyrena. Albumen æquabile.—Arbusculæ epiphytæ Asiæ et Australiæ tropicæ, glabræ v. pilosæ, foliis duplicato- v. simpliciter digitatis, rarissime 1-foliolatis, foliolis integerrimis v. dentatis, umbellulis racemoso-paniculatis, petalis viridibus v. sæpe purpureis v. sanguineis.—*Heptapleurum*, Gærtn. Fruct. ii. p. 472, t. 178, fig. 3. *Paratropia*, De Caud. Prodr. iv. p. 265, excl. sp. *Actinomorphe*, Miq. Comm. Phytogr. p. 102.

Hasskarl (Flora Beibl. 1842, p. 30) was the first who pointed out the propriety of restoring the genus *Heptapleurum*, quite overlooked by De Candolle when he established *Paratropia*, a genus in every respect identical with *Heptapleurum*, if we adopt the definition which he himself gives in the 'Prodromus,' and which excludes one of the species (*P. nodosa*) incorporated with it at that place, but belonging to the older genus *Polyscias*, Forst. The genus *Actinomorphe*, according to Miquel's own showing (Ann. Lugd. Bat.), is identical with *Heptapleurum*. But I cannot admit *Parapanax*, Miq. which I have shown to belong, at least in part, to *Brassaia*, Endl. *Paratropia*, being absorbed by *Agalma*, *Heptapleurum*, *Polyscias*, *Brassaia*, and other genera, has no longer any existence, and in finally dissolving it, I shall show how the different species have been disposed of, viz. :—

- Paratropia acutissima*, Miq.=*Heptapleurum acutissimum*, Seem.
- P. apiculata*, Miq.=*Heptapleurum apiculatum*, Seem.
- P. aromatica*, Miq.=*Agalma aromaticum*, Seem.
- P. avenis*, Miq.=*Heptapleurum avene*, Seem.
- P. brachybotrya*, Miq.=*Heptapleurum scandens*, Seem.
- P. calophylla*, Miq.=*Heptapleurum heterophyllum*, Seem.
- P. Cantoniensis*, Hook. et Arn.=*Agalma octophyllum*, Seem.
- P. capitata*, W. et Arn.=*Heptapleurum capitatum*, Seem.
- P. confinis*, Miq.=*Heptapleurum confine*, Seem.
- P. Coronæ-sylvæ*, Miq.=*Heptapleurum Coronæ-sylvæ*, Seem.
- P. Cumingiana*, Presl=*Nothopanax Cumingianum*, Seem.
- P. divaricata*, Miq.=*Heptapleurum divaricatum*, Seem.

- P. elata*, Hook. fil. = *Sciadophyllum elatum*, Seem.
P. elliptica, Miq. = *Heptapleurum ellipticum*, Seem.
P. eurhyncha, Miq. = *Heptapleurum eurhynchum*, Seem.
P. farinifera, Hort. Lind. (sp. indescript.) =
P. fastigiata, Miq. = *Heptapleurum fastigiatum*, Seem.
P. gracilis, Miq. = *Heptapleurum gracile*, Seem.
P. heterophylla, Presl = *Arthrophyllum*.
P. Horsfieldii, Miq. = *Agalma Horsfieldii*, Seem.
P. Jungkuhniana, Miq. = *Heptapleurum Jungkuhnianum*, Seem.
P. longifolia, De Cand. = *Heptapleurum longifolium*, Seem.
P. lucescens, Miq. = *Agalma lucescens*, Seem.
P. lucida, Miq. = *Heptapleurum rigidum*, Seem. var.
P. macrostachya, Miq. = *Brassaia macrostachya*, Seem.
P. Mannii, Hook. fil. = *Sciadophyllum Manni*, Seem.
P. micrantha, Miq. = *Heptapleurum micranthum*, Seem.
P. ? multijuga, A. Gray = *Nothopanax multijugum*, Seem.
P. nodosa, De Cand. = *Polyscias nodosa*, Seem.
P. oxyphylla, Miq. = *Heptapleurum oxyphyllum*, Seem.
P. parasitica, Miq. = *Heptapleurum parasiticum*, Seem.
P. pergamacea, De Cand. = *Heptapleurum pergamaceum*, Hassk.
P. petiolosa, Miq. = *Heptapleurum petiolosum*, Seem.
P. polita, Miq. = *Heptapleurum politum*, Seem.
P. polyphylla, Miq. = *Heptapleurum polyphyllum*, Seem.
P. polybotrya, Miq. = *Heptapleurum polybotryum*, Seem.
P. pulchra, Dcne. et Pl. (sp. indescript.) =
P. pubigera, Brongn. (sp. indescript.) =
P. rigida, De Cand. = *Heptapleurum rigidum*, Seem. non Hassk.
P. rostrata, Wight = *Agalma rostratum*, Seem.
P. Samoensis, A. Gray = *Cheirodendron* ?
P. scandens, Miq. = *Heptapleurum scandens*, Seem.
P. serrata, Miq. = *Heptapleurum serratum*, Seem.
P. Singalense, Miq. = *Heptapleurum Singalense*, Seem.
P. subobtusa, Dcne. et Planch. = *Heptapleurum* ?
P. subulata, Miq. = *Heptapleurum subulatum*, Seem.
P. terebinthacea, Arn. = *Heptapleurum stellatum*, Gærtn.
P. Teijsmanniana, Hort. Lind. (sp. indescript.) = *Heptapleurum*.
P. tomentosa, Miq. = *Heptapleurum tomentosum*, Hassk.
P. venulosa, Wight et Arn. = *Heptapleurum venulosum*, Seem.

P. Wallichiana, C. Koch = *Agulma tomentosum*, Seem.

P. Wallichiana, Wight et Arn. = *Heptapleurum Wallichianum*, Seem.

* *Folia duplicato- (3-v-5-nata) digitata.*

1. *H. heterophyllum*, Seem.—*Hedera heterophylla*, Wall. Cat. n. 4919; G. Don, Gen. Syst. iii. p. 394; Walp. Rep. ii. p. 432. *Paratropia calophylla*, Miq. in Bonplandia, 1856, p. 138; Fl. Nederl. Ind. vol. i. pars 1, p. 758.—Pulo Penang (Wallich! n. 4919); Java (Horsfield! in Mus. Brit.).

2. *H. Junghuhnianum*, Seem.—*Paratropia Junghuhniana*, Miq. in Bonplandia, 1856, p. 138; Fl. Nederl. Ind. l. c. p. 758.—Java (Horsfield! in Mus. Brit.).

** *Folia simpliciter digitata, rarissime 1-foliolata.*

3. *H. tomentosum*, Hassk. in Flora (B. Z.) Beibl. 1842, p. 30.—*Sciadophyllum tomentosum*, Blum. Bijdr., p. 877; De Cand. Prodr. iv. p. 260. *Paratropia tomentosa*, Miq. in Bonplandia, 1856, p. 138, et Fl. Nederl. Ind. vol. i. pars 1, p. 753.—Java (Herb. Hook. communiv. cl. Miq.)

Var. β . *farinosum*, Hassk. l. c.—*Actinophyllum farinosum*, Blum. Cat. Buitenzorg, p. 43. *Sciadophyllum farinosum*, Blum. Bijdr. p. 860.—Java.

4. *H. divaricatum*, Seem.—*Paratropia divaricata*, Miq. in Bonpl. 1856; Fl. Ned. Ind. l. c. *Sciadophyllum divaricatum*, Bl. Bijdr. p. 876.—Java (Junghuhn! in Herb. Hook.).

5. *H. gracile*, Blume, mss.—*Paratropia gracilis*, Miq. Ann. Lugd. Bat. i. p. 22.—Borneo (Henrici; Motley?, in Herb. Hook.).

6. *H. subulatum*, Seem.—*Paratropia subulata*, Miq. Ann. Lugd. Bat. i. p. 22.—Western Sumatra (Korthals).

7. *H. politum*, Seem.—*Paratropia polita*, Miq. Ann. Lugd. Bat. i. p. 22.—Southern Borneo (Korthals).

8. *H. Singalangense*, Seem.—*Paratropia Singalense* (sic!), Miq. Ann. Lugd. Bat. i. p. 23.—Singalang, Western Sumatra (Korthals).

9. *H. petiolosum*, Seem.—*Paratropia petiolosa*, Miq. Ann. Lugd. Bat. i. p. 24.—Southern Borneo (Korthals).

10. *H. fastigiatum*, Seem.—*Paratropia fastigiata*, Miq. Ann. Lugd. Bat. i. p. 24.—Java (Waitz).

11. *H. apiculatum*, Seem.—*Paratropia apiculata*, Miq. Ann. Lugd. Bat. i. p. 219.—Island of Halmahera, Moluccas (Teijsmann).

12. *H. Coronæ-sylvæ*, Seem.—*Paratropia Coronæ-sylvæ*, Miq. in 'Bonplandia,' 1856, p. 138; Fl. Nederl. Ind. l. c. p. 755. *Sciadophyllum subavene*, Blume, ex parte?—Java (Junghuhn!, in Herb. Hook.).

13. *H. polybotryum*, Seem.—*Paratropia polybotrya*, Miq. in 'Bonplandia,' 1856, p. 138; Fl. Nederl. Ind. l. c. p. 755.—Java (Horsfield!, in Mus. Brit.; Junghuhn!, in Herb. Hook.).

14. *H. micranthum*, Seem.—*Paratropia micrantha*, Miq. Fl. Nederl. Ind. Suppl. i. p. 337.—Sumatra.

15. *H. eurhynchum*, Seem.—*Paratropia eurhyncha*, Miq. Ann. Lugd. Bat. i. p. 21.—Java (Van Hasselt).

16. *H. ellipticum*, Seem.—*Paratropia elliptica*, Miq. in 'Bonplandia,' 1856, p. 138. *Sciadophyllum ellipticum*, Blume, Bijdr. p. 878; De Cand. Prodr. iv. p. 260.—Java (Horsfield!, in Mus. Brit.; Junghuhn!; De Vriese!, in Herb. Hook.); Sumatra; Borneo; Timor.

Var. β . *micrantha*, Miq.; γ . *ovata*, Miq.; δ . *riparia*, Miq.; ϵ . *verticillata*, Miq. Ann. Lugd. Bat. i. p. 21.

17. *H. pergamaceum*, Hassk. in Flora (B. Z.), 1842, Beibl. p. 31.—*Paratropia pergamacea*, De Cand. Prodr. iv. p. 266. *Aralia pergamacea*, Blume, Bijdr. p. 838.—Java.

18. *H. avene*, Seem.—*Paratropia avenis*, Miq. Ann. Lugd. Bat. i. p.

19. *Sciadophyllum avene*, Korth. Herh.—Western Sumatra (Korthals).

19. *H. parasiticum*, Seem.—*Paratropia parasitica*, Miq. in Bonpl. 1856, p. 138; Fl. Nederl. Ind. l. c. p. 757. *Sciadophyllum parasiticum*, Blume, Bijdr. p. 877. *S. humile*, Blume, l. c.; De Cand. Prodr. iv. p. 259. *Actinomorpha humilis*, Miq. Com. Phytogr. p. 102; Fl. Nederl. Ind. l. c. p. 749.—Java (Horsfield! in Mus. Brit.); Western Sumatra (Korthals).

20. *H. acutissimum*, Seem.—*Paratropia acutissima*, Miq. Ann. Lugd. Bat. i. p. 20.—Southern Borneo (Korthals).

21. *H. scandens*, Seem.—*Paratropia scandens*, Miq. in 'Bonplandia,' 1856, p. 138; Fl. Nederl. Ind. l. c. p. 757. *P. brachybotrya*, Miq. l. c. *Sciadophyllum scandens*, Blume, Bijdr. p. 878.—Java; Sumatra (Korthals).

22. *H. serratum*, Seem.—*Paratropia serrata*, Miq. in 'Bonplandia,' 1856, p. 138; Fl. Nederl. Ind. l. c. p. 757. *Aralia aromatica*, var. *foliolis serratis*, Blume, Bijdr. p. 872? *Unjalla serrata*, Reinw.—Java.

23. *H. confine*, Seem.—*Paratropia confinis*, Miq. in 'Bonplandia,' 1856, p. 138; Fl. Nederl. Ind. l. c. p. 758.—Celebes.

24. *H. longifolium*, Seem.—*Paratropia longifolia*, De Cand. Prodr. iv. p. 266. *Heptapleurum rigidum*, Hassk. in Flor. (B. Z.) 1842, Beibl. p. 30. *Sciadophyllum longifolium*, Blume, Bijdr. p. 876.—Java (Herb. Hook.).

Var. β . *incurvum*, Seem.—*Paratropia longifolia*, var. *incurva*, Miq. Fl. Nederl. Ind. l. c.—Sumatra; Boutan.

25. *H. rigidum*, Seem. (non Hassk.).—*Paratropia rigida*, De Cand. Prodr. iv. p. 266. *Aralia rigida*, Blume, Bijdr. p. 874.—Java.

Var. β . *venosum*, Seem.—*Paratropia rigida*, var. *venosa*, Miq. l. c.

Var. γ . *brevifolium*, Seem.—*Paratropia rigida*, var. *brevifolia*, Miq. Ann. Lugd. Bat. i. p. 25. *Sciadophyllum lucidum*, Blume, Bijdr. p. 877. *Paratropia lucida*, Miq. in Bonpl. 1856, p. 138.

26. *H. polyphyllum*, Seem.—*Paratropia polyphylla*, Miq. in 'Bonplandia,' 1856, p. 139; Fl. Nederl. Ind. l. c. p. 760.—Java (Teijsmann! in Herb. Hook.).

27. *H. oxyphyllum*, Seem.—*Paratropia oxyphylla*, Miq. Suppl. i. Fl. Nederl. Ind. p. 338.—Western Sumatra.

28. *H. emarginatum*, Seem.—*Hedera emarginata*, Moon, Cat. Ceylon Plants, p. 18; Thwaites, Enum. Ceyl. Plants, p. 132.—Ceylon, up to an elevation of 4000 feet (Thwaites! in Mus. Brit.).

29. *H. exaltatum*, Seem.—*Hedera exaltata*, Thwaites, Enum. Ceyl. Plants, p. 132.—Ceylon, at an elevation of 6000–8000 feet (Thwaites! in Mus. Brit.).

30. *H. Wallichianum*. Seem.—*Paratropia Wallichiana*, Wight et Arn. (non C. Koch) Prodr. p. 377; Walp. Rep. ii. p. 433.—Khassia, 5000–6000 feet (Wight! n. 1217 in Herb. Hook.; Hooker fil. et Thomson! in Mus. Brit.).

31. *H. venulosum*, Seem.—*Paratropia venulosa*, Wight et Arn. Prodr. Fl. Pens. Orient. p. 377; Walp. Rep. ii. p. 433; Wight, Illustr. t. 118. *Hedera terebinthacea*, Wall. Cat. n. 4920, ex parte. *Panax serratum*, Wall. in De Cand. Prodr. iv. p. 253. *Aralia digitata*, Roxb. Fl. Ind. ii. 107; Rheede, Hort. Mal. vii. t. 28. *A. Moorei*, F. Müll. Fragm. ii. p. 108; iv. p. 121. *Cussonia scandens*, Hamilton, Herb. in Mus. Brit.—Khassia, Nilgherries, and Sikkim (Hooker fil. et Thomson! in Mus. Brit.; Wallich!); Nepal (Wallich!; Hamilton!; Strachey and Winterbottom! in Mus. Brit.); Bootan and Assam (Griffith!); E. Indies (Roxburgh! in Mus. Brit.); Bombay (Dalzel!); Krombh Island (Helfer!); Birma and Malay Peninsula (Griffith!); East coast of trop. New Holland (C. Moore!).

32. *H. stellatum*, Gärtn. de Fruct. ii. p. 472, t. 178, fig. 3.—*Hedera obovata*, Wight, Icon. t. 1011, 1012. *H. Vahlü*, Thwaites, Enum. Ceyl. Plants, p. 132. *H. terebinthacea*, Vahl, Symb. iii. p. 42; De Cand. Prodr. iv. p. 265. *Paratropia terebinthacea*, Arn. Nov. Act. xviii. p. 338. Ittawael; Arbor Zeylanica Itta dicta, resinam *Terebinthinæ* similem fundens, Herm. Zeyl. p. 50. Arbor "Itta" dicta etc.; Burm. Zeyl. p. 28. Ittawael, Linn. Zeyl. p. 234. Maha-ittawæla (*Hedera terebinthacea*), Moon, Cat. Zeyl. Plants, p. 18.—Ceylon (Kœnig!; Thwaites! n. 1632, in Mus. Brit.).

33. *H. verticillatum*, Seem.—*Sciadophyllum verticillatum*, Spanoghe, in Linnæa, xv. p. 288; Walp. Rep. ii. p. 431.—Timor.

34. *H. insularum*, Seem. n. sp.; foliolis 5-7, ellipticis acuminatis dentatis; paniculis tomento brevi vestitis; petalis linearibus liberis; stem. 7; ovar. 7-locul.—Philippine Islands (Cuming! n. 814).

35. *H. Cumingii*, Seem. n. sp.; foliolis 5 ellipticis v. ovato-ellipticis longe acuminatis integerrimis 3-plinerviis; paniculis terminalibus pube stellato albido vestitis; drupis obovatis 5-locularibus.—Philippine Islands (Cuming! n. 800 et 1293).

36. *H. capitatum*, Seem.—*Paratropia capitata*, Wight et Arn. Prodr. p. 378; Walp. Rep. ii. p. 433.—Eastern parts of Bengal (Wight); Malacca (Griffith! n. 2708).

At first sight looks like a *Brassaia*, but flowers pedicellate and without a calyculus. Inflorescence covered with stellate hairs. Leaflets in Griffith's specimen 3-4 inches long, having 15-22 veins on each side of the midrib.

To this genus must probably be referred *Paratropia subobtusa*, Dcne. et Planch. Hort. Donat. p. 10 (*Sciadophyllum rotundifolium*, *Paratropia panduræfolia*, et *P. macrophylla*, Hort.), of which both the flowers and the native country are unknown.

VI. ON THE POLYPETALOUS GENERA WITH SEVERAL DISTINCT STYLES.

Under this heading are provisionally grouped together all those genera which, when the fruit is ripe, have several distinct, generally recurved styles. *Gastonia*, *Grotefendia*, and *Nesopanax* would have been inserted here, if I had not already treated of them under a previous heading.

CONSPECTUS GENERUM HEDERACEARUM POLYPETALARUM
STYLIS PLURIMIS (3-∞) DISTINCTIS.

XX. *Gilibertia*. Pedicelli inarticulati. Flores ecalyculati, hermaphroditi. Petala 5-9, libera. Stamina 5-9. Drupa baccata, 5-7-pyrena. Albumen . . .—Arbores inermes Americæ australis tropicæ, foliis exstipulatis simplicibus, umbellis compositis.

XXI. *Fatsia*. Pedicelli inarticulati. Flores ecalyculati, hermaphroditi. Petala 5, libera. Stamina 5. Drupa baccata, 5-pyrena. Albumen . . .—Frutex inermis Japoniæ, foliis stipulatis simplicibus palmatim lobatis, umbellis paniculatis.

XXII. *Schefflera*. Pedicelli inarticulati. Flores ecalyculati, polygami. Petala 5, libera. Stamina 5. Drupa baccata, 5-10-pyrena. Albumen æquabile.—Arbores v. frutices inermes Polynesie tropicæ v. subtropicæ, foliis stipulatis digitatim compositis, umbellis racemoso-paniculatis.

XXIII. *Sciadophyllum*. Pedicelli inarticulati. Flores ecalyculati, hermaphroditi. Petala 5, libera v. calypratum cohærentia. Drupa exsucca, 4-10-pyrena. Albumen æquabile.—Arbores v. frutices inermes Africæ et Americæ tropicæ, foliis stipulatis digitatim compositis, umbellis v. capitulis racemosis.

XXIV. *Pseudopanax*. Pedicelli articulati. Flores ecalyculati hermaphroditi. Petala 5, libera. Stamina 5. Drupa baccata, 3-5-pyrena. Albumen æquabile.—Arbores inermes Novæ Zelandiæ, foliis exstipulatis digitatim compositis, umbellis paniculatis.

XXV. *Oligoscias*. Pedicelli articulati. Flores calyculati, hermaphroditi. Petala 5, libera. Stamina 5. Drupa baccata, 5-pyrena. Albumen ruminatum.—Frutex inermis Madagascariensis, foliis exstipulatis imparipinnatis, umbellis simplicibus v. compositis.

XXVI. *Polyscias*. Pedicelli articulati. Flores calyculati, hermaphroditi. Petala 5-8. Stamina 5-8. Drupa baccata, 5-pyrena. Albumen . . .—Frutices v. arbusculæ inermes Asiæ et Polynesie tropicæ, foliis exstipulatis imparipinnatis, umbellis v. capitulis paniculatis.

XX. GILIBERTIA, Ruiz et Pavon. Pedicelli inarticulati. Flores ecalyculati, hermaphroditi. Calyx tubo obconico, limbo truncato v. obscure 5-9-denticulato. Petala triangularia 5-9, 1-nervia, libera,

æstivatione valvata. Stamina 5-9. Styli 5-7, conniventes, demum recurvi (subpatentes, De Cand.). Ovarium 5-7-loculare, loculis 1-ovulatis. Drupa baccata, 5-7-angulata, 5-7-pyrena. Albumen . . .—Arbores Peruvianæ et Brasilienses, foliis exstipulatis simplicibus, integerrimis v. denticulatis, umbellis terminalibus compositis.—*Gilibertia*, Ruiz et Pav. Fl. Peruv. Prodr. p. 50, t. 8; Fl. Peruv. iii. p. 75, t. 312; De Cand. Prodr. iv. p. 256, exclud. sp. 2, 3, 4, 5, et 6.

1. *G. umbellata*, Ruiz et Pav. Fl. Peruv. iii. p. 75, t. 312; De Cand. Prodr. iv. p. 256.—*Wangenheimia umbellata*, Dietr. . . . *Ginnania umbellata*, Dietr. . . . *Aratia umbellata*, Pav. Herb. *Dendropanax umbellatum*, Dene. et Planch. in Rev. Hort. 1854, p. 107.—Forests of Muña, Peru (Pavon! in Mus. Brit.).

2. *G. Brasiliensis*, Seem. (sp. nov.); glabra; foliis longe petiolatis ovatis v. ovato-oblongis breviter acuminatis v. acutis integerrimis coriaceis, venis pinnatis parallelis, inferioribus haud crassioribus, umbellis terminalibus brevipedunculatis compositis paucifloris, calycis limbo truncato obscure 5-6-denticulato, petalis triangularibus 5-6, 1-nerviis, staminibus 5-6, stylis 5-6 conniventibus, demum recurvis, drupa baccata 5-6-angulata, 5-6-pyrena.—Ilheños, Brazil (Moricand! n. 2095).

This may possibly be the second species of *Gilibertia*, indicated, but not described nor even named by Decaisne and Planchon as having been collected by Blanchet in Brazil, whose specimens I have not seen. *G. Brasiliensis* is in every respect a smaller species than *G. umbellata*. Petioles 2-2½ inches long, blade 3-3½ inches long, 1-1½ inches broad. Pedicels ½ inch long.

Species exclusæ:

G. Naluga, De Cand. = *Leea staphylea*, Roxb.

G. palmata, De Cand. = *Trevesia palmata*, Visian.

G. paniculata, De Cand. = *Grotefendia paniculata*, Seem.

G. repanda, De Cand. = *Grotefendia repanda*, Seem.

G. sauroroides, De Cand. = (?) *Osmoxylon Amboynense*, Miq.

XXI. SCHEFFLERA, Forst. *Pedicelli* inarticulati. *Flores* ecalyculati, polygami. *Calyx* tubo obconico limbo minute 5-dentato. *Petala* 5, ovato-triangularia, 1-nervia, æstivatione valvata. *Stamina* 5; *antheræ* oblongæ. *Ovarium* 5-10-loculare, loculis 1-ovulatis. *Styli* 5-10, basi coadunati distincti. *Drupa* baccata, globosa, 5-10-pyrena. *Albumen* æquabile.—Arbores vel frutices Novæ-Zelandiæ et insularum Vitiensium, inermes, glabræ, foliis alternis stipulatis digitatum 7-9-

foliolatis, foliolis longe petiolulatis oblongis v. ellipticis serrulatis, umbellis racemoso-paniculatis.—*Schefflera*, Forst. Gen. p. et t. 23 (1776).

Araliæ sp. auct.

Schefflera (not *Schæfflera*, as authors incorrectly write) contains two species, viz.

Styli 8–10	<i>S. digitata</i> .
Styli 5	<i>S. Vitiensis</i> .

1. *S. digitata*, Forst. Char. Gen. t. 20, Prodr. n. 146; Icon. (ined.) t. 94; Lam. Ill. Gen. t. 221.—*Aralia Schefflera*, Spr. Pug. Plant. pl. i. p. 28; De Cand. Prodr. iv. p. 258; Hook. fil. Fl. New Zeal., i. p. 95, t. 22; A. Gray, Bot. Wilkes, p. 715; A. Rich. Fl. N. Zel. p. 283. *Aralia polygama*, Banks et Sol. mss.; Parkinson's Icones Plant. Nov. Zel. t. 105 et 106 (ined.).—New Zealand, throughout the islands, abundant (Banks and Solander! Forster! in Herb. Mus. Brit.).

2. *S. Vitiensis*, Seem. — *Aralia (Schefflera) Vitiensis*, A. Gray, Bot. Wilkes, p. 715, t. 89.—Viti Islands (Seemann! n. 203, Harvey! United States Expl. Exped.).

XXII. FATSIA, Dene. et Planch. *Pedicelli* inarticulati. *Flores* ecalyculati, hermaphroditi (vel polygami?). *Calyx* tubo obovato, 10-nervio, limbo subtruncato. *Petala* 5, ovata, acuta, 3-nervia, reflexa, libera, *æstivatione* valvata. *Stamina* 5; *filamenta* elongata; *antheræ* oblongæ-ellipticæ. *Ovarium* 5-loculare, loculis 1-ovulatis. *Styli* 5, omnino liberi, divergentes. *Stigmata* punctiformia. *Drupa* obovato-globosa, 10-nervia, 5-pyrena. *Albumen* . . .—Frutex inermis Japonicus, foliis stipulatis petiolatis palmato-5–7-lobis versus apicem serratis, 7–9-nerviis, coriaceis lanatis demum glabris; umbellis in paniculas terminales dispositis.—*Fatsia*, Dene. et Planch. in 'Revue Horticole,' 1854, p. 105; Miquel in Ann. Lugd. Bat. i. p. 11. *Araliæ* sp. auct.

1. *F. Japonica*, Dene. et Planch. l. c. sine descript.—*Aralia Japonica*, Thunb. Fl. Japon. p. 128; De Cand. Prod. iv. p. 258; Banks, Icon. Select. Kæmpf. t. 10; Regel, Gartenflora, 1863, t. 420.—Japan, in woods (Kæmpfer! Thunberg! in Herb. Mus. Brit., Alcock! Wright! Oldham!)

Species exclusa :

Fatsia Mitsde, de Vris. (*Aralia Mitsde*, Siebold in Hort. Lugdun. Bat. Plant. Rar. 1854; Walp. Ann. p. 83; Linnæa, xxvi. p. 89. *Textaria Japonica*, Miq. in Ann. Lugd. Bat. i. p. 12. *Oreopanax*

Brownei, Witte in Fl. de Jard. de Pays Bat. 1861; Koch, Wochensch. iv. p. 223; Regel, Gartenfl. 1863, p. 146, t. 399.)=*Dendropanax Japonicum*, Seem.

XXIII. SCIADOPHYLLUM, P. Browne, Jam. 190. Pedicelli inarticulati. Flores ecalyculati, hermaphroditi. Calyx limbo 5-dentato v. subtruncato. Petala 5-10, ovato-triangularia, 1-nervia, æstivatione valvata, libera v. calyptratim cohærentia, nunc plane concreta. Stamina 5-10; antheræ oblongæ v. subglobosæ. Pollen globosum. Ovarium 4-10-loculare, loculis 1-ovulatis. Styli 4-10, erecti, liberi, demum recurvi. Drupa subexsucca, 4-10-costata, 4-10-pyrena, pyrenis 1-spermis. Albumen æquabile.—Arbores v. frutices Africæ et Americæ tropicæ, stantes v. scandentes et radicanes; foliis alternis, digitatim compositis, foliolis obsolete denticulatis v. integerrimis; stipulis in unam intraaxillarem concretis; umbellis v. capitulis in racemos dispositis; floribus albidis flavis roseis v. purpurascensibus.—Planch. et Linden, Araliacæ, p. 19 (ined.). *Actinophyllum*, Ruiz et Pav. Fl. Per. Prodr. 51, t. 8; Fl. Peru, iii. p. 74. *Astropanax*, Seem. in Journ. of Bot, 1865, p. 176. *Araliæ et Paratropiæ* sp. auct.

Sciadophyllum differs from *Heptapleurum* and *Agalma* by its several free styles, from *Fatsia* by its strongly-ribbed fruit, and was founded by P. Browne on a Jamaica tree with digitate leaves, umbels arranged in racemes, a 5-toothed calyx, a corolla composed of 5 petals closely united into a calyptra, 5 stamens, 5 styles, and a 5-celled ovary. Ruiz and Pavon afterwards named the genus *Actinophyllum*, and added several Peruvian species, several of which, however, differ from the original type of the genus in having double the number of stamens and petals, and the petals so closely united that it is impossible to trace their individual limits, and the corolla might be appropriately described as monopetalous. At one time I thought it possible to restrict the genus *Sciadophyllum* to those species, the corolla of which consists, apart from all theoretical considerations, of one piece only; and, on that ground, I proposed for the African species the name *Astropanax*; but a close examination of all the materials at hand, enclosing the authentic specimens of Ruiz and Pavon, has convinced me that there is a gradual transition, from the *Sciadophylla* with free petals, petals closely united, but distinguishable with the naked eye, and petals with difficulty distinguished by the help of high microscopic powers, and reflected light, to petals so intimately joined as to

seem to form one solid piece. At a future time, when materials have more accumulated in our herbarium, and both flower and fruit of all the species shall have become known, it may, perhaps, be possible to use the corolla for generic purposes; as its nature is never obscure or doubtful, one is always able to say of how many parts the corolla of a species is composed.

* *Flores umbellati.*

1. *S. Brownei*, Spreng. Syst. i. p. 953.—*Aralia Sciadophyllum*, Swartz, Prodr. 55. *Hedera Sciadophyllum*, Swartz, Fl. Ind. Occ. i. p. 519. *Vitis heptaphylla*, Linn. Mant. p. 212.—Woods of Jamaica (Masson! in Herb. Mus. Brit.; Purdie! Alexander Prior! Marsh!).

2. *S. sphærocoma*, Benth. Bot. Sulph. p. 102.—Isle of Gorgona, west coast of trop. America (Barclay! in Herb. Benth.).

3. *S. pedicellatum*, Poir. Dict. vi. p. 176.—*Actinophyllum pedicellatum*, Ruiz et Pavon, Fl. Per. iii. p. 73, t. 308.—Mountains about Muña, Peru (Pavon! in Herb. Mus. Brit.).

4. *S. micranthum*, Planch. et Linden, Araliac. p. 20.—Ocaña, New Granada (Schlim, n. 1149). This is in Herb. Hook. under Schlim, n. 699, if I have correctly determined the species.

5. *S. villosum*, Planch. et Linden, Araliac. p. 20.—New Granada (Schlim, n. 44). Corolla unknown.

6. *S. Goudotii*, Planch. et Linden, Araliac. p. 21.—Bogotá and province of Pamplona, New Granada (Goudot! Schlim! n. 3 et 5).

7. *S. oxyanthum*, Planch. et Linden, Araliac. p. 21.—New Granada (Triana, n. 372).

8. *S. Quinduense*, De Cand. Prodr. iv. p. 261.—*Aralia Quinduensis*, H. B. et K. Nov. Gen. v. p. 8, t. 417, f. 1; Planch. et Linden, Araliac. p. 22.—Nomen vernac. "Pata de gallina." New Granada, Andes of Quindiu (Humboldt et Bonpland: Triana!), Antioquia (Purdie! Jervis!).

9. *S. decaphyllum*, Seem. (sp. nov.); glabrum; foliis 9–10, obovato-oblongis retusis basi acutis, supra lucidis; floribus umbellatis; drupis 5-angulatis; stylis 5 recurvis persistentibus coronatis.—*Panax decaphyllum*, Sagot, Herb.—French Guiana (Sagot! n. 916).—Leaflets 3–4 inches long, 1½–2 inches broad, and their surface so remarkably shining that this species is at once distinguished by it. The specimens are in fruit only.

10. *S. Abyssinicum*; Steud. Nomencl. Bot. p. 537; Miq. Ann. Lugd. Bat. i. p. 26.—*Astropanax Abyssinicum*, Seem. in Journ. of Bot. 1865, p. 177. *Aralia Abyssinica*, Hochst. mss. in Schimp. Pl. Abyss. ed. i. n. 283; Rich. Tent. Fl. Abyss. i. 336; Walp. Ann. ii. p. 724.—Adoa, Abyssinia (Hochstetter!).

11. *S. elatum*, Seem.—*Astropanax elatum*, Seem. l. c. *Paratropia elata*, Hook. fil. in Journ. Linn. Soc. vii. p. 196.—Cameroon Mountains, 7500 feet above the sea (Mann!).—This species is very close to *S. Abyssinicum*, but appears to be sufficiently distinct.

12. *S. Barteri*, Seem.—*Astropanax Barteri*, Seem. Journ. of Bot. 1865, p. 177.—Glabrum; foliolis 5 longe petiolatis ovato- v. obovato-oblongis acuminatis basi rotundatis integerrimis coriaceis supra nitidis; umbellis racemosis 7-12-floris, bracteis ovatis acuminatis; drupis subglobosis 8-pyrenis.—Sugar Loaf Mountains, Niger (Barter! n. 2027) "A small tree," Barter.

13. *S. Baikiei*, Seem.—*Astropanax Baikiei*, Seem. in Journ. of Bot. 1865, p. 177.—Glabrum; foliolis 5 (?) longe petiolatis elliptico-oblongis acuminatis in petiolum attenuatis integerrimis submembranceis; umbellis racemosis 4-5-floris, bracteis lanceolatis; drupis ovatis 4-6-pyrenis (albis) acute angulatis.—Niger (Barter!).—"Twenty feet high, fruit white when ripe," Barter. I have named this species in commemoration of the late Dr. Baikie, the indefatigable explorer of the Niger, to whose expedition the late Mr. Barter was attached as botanist. The leaflets are larger than these of the preceding species, less coriaceous, and different in shape.

** *Flores capitati.*

14. *S. Manni*, Seem.—*Astropanax Manni*, Seem. in Journ. of Bot. 1865, p. 178. *Paratropia Manni*, Hook. fil. Journ. Linn. Soc. vi. p. 10.—Fernando Po. 5000 feet above the sea (Mann!).

15. *S. conicum*, Poir. Dict. vi. p. 746.—*Actinophyllum conicum*, Ruiz et Pav. Fl. Per. iii. p. 74, t. 309.—Peru (Pavon! in Herb. Mus. Brit., Mathews!).

16. *S. acuminatum*, Poir. Dict. vi. p. 746.—*Actinophyllum acuminatum*, Ruiz et Pav. Fl. Peruv. iii. p. 74, t. 310.—Peru (Pavon! in Herb. Mus. Brit., Lechler! n. 2592).

17. *S. angulatum*, Poir. Dict. vi. p. 745, exclud. syn. Browne.—*Actinophyllum angulatum*, Ruiz et Pavon, Fl. Peruv. iii. p. 73, t. 307, non H. B. et K.—Peru (Pavon! in Herb. Mus. Brit.).

18. *S. Humboldtianum*, Dcne. et Planch. in Planch. et Linden, Araliac. p. 23.—*Actinophyllum angulatum*, H. B. et K. Nov. Gen. v. p. 92, non Ruiz et Pavon?—New Granada, between Pansitara and Almaguer (Humboldt and Bonpland).

19. *S. pentandrum*, Poir. Dict. vi. p. 747.—*Actinophyllum pentandrum*, Ruiz et Pavon, Fl. Peruv. iii. p. 75, t. 311.—Muña, Peru (Pavon! in Herb. Mus. Brit.).

20. *S. Trianae*, Planch. et Linden, Araliac. p. 23.—New Granada (Triana! Jervise!).

I have seen the corolla of this plant, unknown to Planchon and Linden. It is hemispherical.

21. *S. heterotrichum*, Planch. et Linden, Araliac. p. 23.—New Granada, between Bogotá and Fusagasuga (Goudot! n. 1 B.).

22. *S. Mathewsi*, Seem. (sp. nov.); ramis foliisque glabris; foliolis 8–10 oblongis v. obovato-oblongis, obtusis v. abrupte acuminatis, basi obtusis v. acutiusculis integerrimis coriaceis, supra nitidis subaveniis, subtus venis prominulis; capitulis (Pisi maj. magnitudine) racemoso-paniculatis, rachis ramisque villosopuberulis, pedunculis angulatis; corolla hemisphærica puberula, apice depresso; staminibus 5, antheris oblongis; stylis 4–5; drupis obconico-4–5-angulatis, glabris.—Chachapoyas, Peru (Mathews! in Herb. Hook. et Bth.).

Leaflets $3\frac{1}{2}$ –4 inches long, $1\frac{1}{2}$ inches broad.

23. *S. ferrugineum*, Dcne. et Planch. in Rev. Hort. 1854, p. 107.—*Aralia ferruginea*, H. B. et K. Nov. Gen. v. p. 7. *Hedera ferruginea*, De Cand. Prod. iv. p. 264.—Between Saraguro and Oña (Humboldt and Bonpland).

24. *S. Sprucei*, sp. nov. Seem.; foliolis 9 longe petiolulatis ovali-oblongis acuminatis in petiolum attenuatis glabris, supra atroviridibus, subtus pallidioribus venis primariis subpurpurascensibus; rachi pedunculisque tomento stellato deciduo vestitis; floribus sessilibus; capitulis (fœm. fructif.) parvis; corolla ign.; stylis 4 recurvis.—Tarapoto, Peru (Spruce! n. 4550).

I have named this species in honour of its discoverer, that enterprising South American explorer, Dr. Spruce.

Species indescriptæ.

25. *S. caudatum*, Dcne. et Planch. in Rev. Hort. l. c. (Herb. Dombey).

26. *S. Gayanum*, Dcne. et Planch. l. c.
 27. *S. ochroleucum*, Dcne. et Planch. l. c.

Species exclusæ.

- S. avene*, Korth. = *Heptapleurum avene*, Seem.
S. capitatum, Griseb. = *Oreopanax capitatum*, Dcne. et Planch.
S. digitatum, Gr. Don = *Carolinia insignis*, Hort.
S. divaricatum, Blume = *Heptapleurum divaricatum*, Seem.
S. ellipticum, Blume = *Heptapleurum ellipticum*, Seem.
S. farinosum, Bl. = *Heptapleurum tomentosum*, Hassk. var.
S. humile, Blume = *Heptapleurum parasiticum*, Seem.
S. Jacquini, Griseb. = *Dendropanax arboreum*, Dcne. et Planch.
S. longifolium, Bl. = *Heptapleurum longifolium*, Seem.
S. lucidum, Blume = *Heptapleurum longifolium*, Seem. var.
S. macrostachyum, Bth. = *Brassaia macrostachya*, Seem.
S. palmatum, Blume = *Trevesia Sundaica*, Miq.
S. parasiticum, Blume = *Heptapleurum parasiticum*, Seem.
S. pulchellum, Hort. = *Tupidanthus calyptratus*, Hook. f. et Th.
S. racemiferum, Miq. = Gen. nov.
S. rotundifolium, Hort. = (?) *Heptapleurum* sp.
S. rubiginosum, Planch. et Lind. = Gen. nov.
S. scandens, Blume = *Heptapleurum scandens*, Seem.
S. subavene, Blume = *Heptapleurum Coronæ-sylvæ*, Seem.
S. tomentosum, Blume = *Heptapleurum tomentosum*, Hassk.
S. verticillatum, Spanoghe = *Heptapleurum verticillatum*, Seem.

XXIV. PSEUDOPANAX, C. Koch, 'Wochenschrift,' 1859, p. 336.
Pedicelli articulati, apice incrassati. *Flores* ecalyculati, polygami.
Calyx tubo obconico, limbo obsolete denticulato. *Petala* 5, ovato-triangularia, 1-nervia, æstivatione valvata. *Stamina* 5; antheræ ovato-oblongæ. *Ovarium* 5-loculare, loculis 1-ovulatis. *Styli* 5, basi coadunati, apice liberi. *Drupa* baccata, globosa, 5-pyrena. *Albumen* æquabile. *Frutices* v. arbusculæ Novæ-Zelandiæ, foliis alternis exstipulatis, simplicibus vel digitato-3-5-foliolatis, foliolis crassis coriaceis oblongis vel linearibus, sinuato-dentatis, umbellis racemosis v. paniculatis, terminalibus.—*Xylophylla*, Banks et Sol. mss. *Araliæ*, *Cussoniæ* et *Panacis* sp. Auct.

This genus is closely allied to *Cheirodendron*, Nutt., the relationship having been suggested by De Candolle; but in *Pseudopanax* the calyx

is not calyculate, though the pedicel is swollen at the articulation, and the stigmas are not seated on a stylopodium but on five long styles, more or less free above the base.

C. Koch thought that *Panax simplex*, *anomalum*, *Gaudichaudii*, *platyphyllum*, *arborum*, *lineare*, *Edgerleyi*, and *Colensoi* might possibly belong to *Pseudopanax*. But if *P. crassifolium* be regarded as the type of the genus, those species, not being pentacarpous or having distinct styles, are inadmissible.

1. *P. crassifolium*, C. Koch, Wochenschrift, 1859, p. 366.—*Aralia crassifolia*, Banks et Sol. mss.; Parkinson's Drawings of New Zealand Plants, tab. 101, 102 (ined.); Hook. Icon. Plant. t. 583, 584; Hook. fil. Fl. New Zeal. i. p. 96. *Panax coriaceum*, Regel, Gartenflora, 1859, p. 45. *P. longissimum*, Hook. f. Handbook Fl. New Zealand, i. p. 102.—New Zealand (Banks and Solander; Forster! in Herb. Mus. Brit.).

This is a very variable plant. Parkinson, who accompanied Captain Cook in one of his voyages, has left drawings of two varieties which he gathered in New Zealand, the one having crimson, the other purple petioles. In recent years, Continental nurserymen have raised as many as twenty varieties, chiefly differing in the division, shape, and colour of the leaves. One of the oldest inmates of our gardens has been described as a separate species by Regel (1859) under the name of *Panax coriaceum*, and by Hooker f. (1863) under that of *P. longissimum*. It has a simple stem and a dark-green bark striped with brown; all the leaves are quite simple. Regel enumerates two varieties of *P. coriaceum*, viz. α . *latifolium* (leaves $\frac{1}{2}$ — $\frac{3}{4}$ of an inch broad, the older ones with rather larger teeth, *Aralia latifolia*, Hort.) and β . *angustifolium* (*Aralia integrifolia*, Hort., leaves $\frac{1}{3}$ of an inch broad, with very small teeth). *Panax pentadactylon*, Dene. et Planch. Hort. Donat. p. 10 (*Aralia pentaphylla* et *A. quinquevulnera*, Hort.), and *P. tridactylon*, Dene. et Planch. l. c. (*Aralia triphylla* and *A. trifoliata*, Hort.), and *Aralia heteromorpha* are also garden varieties of this variable species.

2. *P. Lessoni*, C. Koch, Wochenschrift, 1859, p. 366.—*Panax* (?) *Lessoni*, De Cand. Prod. iv. p. 253. *Cussonia Lessoni*, A. Rich. Fl. N. Zel. p. 285, t. 32. *Aralia trifolia*, Banks et Sol. mss.; Parkinson's Drawings N. Zeal. Plants, t. 103, 104 (ined.). *Aralia Lessoni*, Hook. fil. Fl. N. Zel. i. p. 96.—New Zealand, in woods. (Banks and Solander! in Mus. Brit.)

XXV. OLIGOSCIAS, Seem. (gen. nov.)—Pedicelli articulati. Flores calyculati, hermaphroditi. Calyx tubo turbinato, limbo 5-dentato. Petala 5, ovato-triangularia, 1-nervia, libera. Stamina 5, filamentis brevibus, antheris oblongis. Ovarium inferum, 4-5-loculare, loculis 1-ovulatis. Styli 4-5, erecti, omnino liberi, stigmatibus 2-fidis. Drupa baccata, subglobosa, 4-5-pyrena. Albumen ruminatum.—Frutex Madagascariensis, inermis, foliis exstipulatis pinnatis 2-3-jugis cum impari, petiolis supra canaliculatis, foliolis lateralibus sessilibus, terminali petiolulato, infimis subrotundatis substipulæformibus, supremis ovatis basi acutis v. acuminatis, 3-5-setaceo-deutatis; umbellis 5-8-floris, simplicibus v. compositis; pedicellis filiformibus (6-8 lin. long.); floribus drupisque albis. Species unica:—

1. *O. Madagascariensis*, Seem. (sp. nov.)—Madagascar, Betroun, Tamatave and Antananarivo, on clay hills, 2000-3000 feet above the sea. (Meller! Lyall! n. 232, and others.)

A transverse section of the albumen presents almost the same cross-shaped figure as that of *Sciadopanax*, though not quite so regular as in that genus.

XXVI. POLYSCIAS, Forst. *Pedicelli* articulati. *Flores* calyculati, hermaphroditi. *Calyx* tubo turbinato v. hemisphærico, limbo minute 5-8-dentato. *Petala* 5-8, vulgo 5, ovato-triangularia, 1-nervia, libera, æstivatione valvata. *Stamina* 5-8, vulgo 5, antheris oblongis. *Ovarium* 5-8, vulgo 5-loculare, loculis 1-ovulatis. *Styli* 5-8, erecti, angulati, demum recurvi. *Drupa* baccata, subglobosa, 5-angulata, 5-8-pyrena. Albumen. —*Frutices* v. arbusculæ Asiæ et Polynesiae tropicæ, inermes, glabræ, caule simplici v. parum ramoso, foliis exstipulatis imparipinnatis, foliolis ovato-oblongis v. subrotundatis subintegerrimis v. crenatis, floribus umbellatis v. subcapitatis, in paniculas amplas dispositis.—*Polyscias*, Forst. Gen. p. 63. t. 33 (1766); De Cand. Prod. vi. p. 257. *Eupteron*, Miq. in Bonplandia, 1856, p. 139. *Hederæ*, *Panacis*, et *Nothopanax* sp. Auct.

In the specimen of *P. pinnata* figured and described by Forster, there was an excess of petals and stamens, and this, together with the imperfect way in which the whole genus has been characterized, probably accounts for Miquel's failing to recognize it, establishing the genus *Eupteron* (absolutely identical with Forster's *Polyscias*), and, mistaking Forster's species for a *Nothopanax*, describing it as *Nothopanax tricochleatum* in his 'Supplement of the Dutch East Indian

Flora.' Miquel, on that occasion, proposed to enlarge the generic character of *Nothopanax*, so that it includes 5-merous species, and those who follow him would have to call all *Nothopanax* species of *Polyscias*, *Polyscias* being the older name. But by combining dimerous and pentamerous ovaries in the same genus, we should once more return to the chaos from which the *Hederaceæ* are just emerging. De Candolle regarded *Polyscias nodosa* as a species of *Paratropia*, but it differs from the other species he associated it with by its pinnate leaves and long recurved styles. The above generic character has been worked out from Forster's original specimens and drawings preserved at the British Museum.

* *Flores pedicellati.*

1. *P. pinnata*, Forst. Gen. p. 64. t. 32; Prod. n. 518; Icon. (ined.) t. 298; De Cand. Prod. iv. p. 257.—*Polyscias umbellata*, Spreng. ex Steud. Nom. Bot. p. 546. *Panax (?) Hayneanum*, Wall. Cat. n. 4927, et. G. Don, Gen. Syst. iii. p. 383; Walp. Rep. ii. p. 429. *Panax Forsteri*, Dene. et Planch. Rev. Hort. 1854, p. 105. *Nothopanax tricochleatum*, Miq. Fl. Ned. Ind. Suppl. i. p. 340. *Aralia Polyscias*, Spreng. in Erschein.—Tana (Forster! Anderson! in Mus. Brit.), Sumatra (Wallich! n. 4927, et in Herb. Soc. Linn. Lond., Teijsmann! Diepenhorst! in Herb. Hook.).

The leaflets being very apt to drop off in drying, have been described by G. Don as simple leaves.

2. *P. Papuana*, Seem.—*Gastonia Papuana*, Miq. Ann. Lugd. Bat. i. 5. New Guinea (Zippelius). Has generally 8 styles, but sometimes 12 by excess.

3. *P. acuminata*, Seem. mss.—*Hedera acuminata*, Wight, Icon. t. 1062. *Eupteron acuminatum*, Miq. in Bonplandia, 1856, p. 139; Fl. Ned. Ind. i. pars i. p. 762.—Nilgherries (Wight), Ceylon (Thwaites! Ceylon Plants, n. 4.).

Wight thinks *Hedera Jackiana*, Don, may possibly be identical with *Polyscias acuminata*, but that species belongs to *Arthrophyllum*; and Thwaites refers *Hedera parasitica*, Don, to *P. acuminata* as a synonym, but from Don's authentic specimen it proves to be a species of *Pentapanax* (*P. parasiticum*, Seem.).

** *Flores sessiles.*

4. *P. nodosa*, Seem. mss.—*Aralia nodosa*, Blum. Bijdr. p. 873.

Paratropia nodosa, De Cand. Prod. iv. p. 265. *Hedera nodosa*, Hassk. Tijdr. Nat. Gesch. x. p. 131. *Aralia umbraculifera*, Roxb. Fl. Ind. ii. 108. *Papaja sylvestris*, Rumph. Amb. i. p. 149. t. 53, fig. 1. *Eupteron nodosum*, Miq. in Bonplandia, 1856, p. 139.—Java and Moluccas (Blume), Philippine Islands (Cuming! n. 504 et 1053 in Mus. Brit.).

According to Roxburgh about twelve feet, according to Blume thirty feet high. Rumphius's figure is referred by De Candolle to *Bergera Koenigii*, a plant which has a very different inflorescence, whilst Roxburgh and Miquel referred it to this species. By some misprint, however, the latter author quoted plate 13, which represents a Palm.

VII. ON THE GENUS OREOPANAX.

I should not have been able to give a complete enumeration of all the species composing this large genus and *Sciadophyllum* if Dr. Planchon and M. J. Linden had not obligingly sent me the proof-sheets of a work on the plants of New Granada and Venezuela, written by them, which contain descriptions of the *Araliaceæ* of that region, and of which they allowed me to make a free use. I have not reprinted the descriptions, but merely referred to them under the title "Planch. et Lind. *Araliaceæ*." MM. Decaisne and Planchon have also kindly furnished me with information relative to several of the undescribed species enumerated by them in the 'Revue Horticole.' Botanists who meet with any species of *Oreopanax* in a wild state or cultivated in tropical gardens should endeavour to observe whether the flowers are really dioecious. Many *Araliaceæ* are polygamous, but some genera seem to be always hermaphrodite. Observations on these points are very much needed.

XXVII. OREOPANAX, Dcne. et Planch. Revue Horticol. 1854, p. 108; Planch. et Lind. *Araliac.* p. 5 (*ined.*).—Flores dielines, dioici (?). Calyx limbo brevi subintegro v. obscure sinuato. Petala 5, rarissime 4, libera, æstivatione valvata. MASC.: Stamina petalorum numero; filamenta subulata, petalis longiora. Styli imperfecti 1–5, liberi v. inferne concreti. FÆM.: Stamina sterilia 4–5, fertilibus masculis breviora. Styli 3–6, liberi v. plus minus concreti. Drupa baccata, sæpius 4–5–6-pyrena, nunc abortu 1–2–3-pyrena. Albumen ruminatum.—Arbores v. frutices Americæ tropicæ, plerique Andicoli; foliis simplicibus integris v. varie divisis, stipulis in unam intra-axillarem petiolo plus minus adnatum parvam connatis; floribus sessilibus, singulis bractea v. bracteolisque duabus stipitatis; capitulis paniculatis; ovario semper glabro.—*Araliæ* et *Hederæ* sp. auct.

1. *O. capitatum*, Dcne. et Planch. in Rev. Hort. 1854. p. 108.—*Aralia capitata*, Jacq. Amer. p. 89. t. 61. *Hedera capitata*, Smith, Icon. Pict. p. et tab. 4. *H. multiflora*, De Cand. Prod. iv. p. 262. *Sciadophyllum capitatum*, Griseb. Fl. West Ind. p. 306.—The most widely diffused species of *Oreopanax*. Veraguas, on the volcano of Chiriqui (Seemann! n. 1648); Organ Mountains, Brazil (Gardner! n. 5726); Peru (Dombey! Mathews!); Carib Islands (Jacquin! De Ponthieu!); Jamaica (Alex. Prior! W. Wright! Wilson! F. Massen! Marsh!); Central America (R. Shakespear!); Belize (Marsh!); Venezuela (Fendler! n. 1320, 526; Funk and Schlim! n. 91; Ernst! n. 571); Mexico (F. Müller!); Martinique (Sieber! n. 94); N. Granada (Goudot! n. 5); Ecuador (Spruce! n. 5525). Called in Belize "Three-foot Jack," because the branches are seldom more than three feet long. (Marsh.) In Venezuela it is termed, according to Ernst, "Candelero."

2. *O. septemnerivium*, Dcne. et Planch. l. c.—*Aralia septemnerivia*, H. B. et K. Nov. Gen. v. p. 3. *Hedera septemnervio*, De Cand. Prod. iv. p. 263.—New Granada (H. B. et K.).

3. *O. (?) catalpæfolium*, Dcne. et Planch. l. c. (*ined.*).—*Aralia catalpæfolia*, Willd. Herb. ex Rœm. et Schult. Syst. vi. p. 697. *Hedera catalpæfolia*, De Cand. Prod. iii. p. 263.—New Granada (Triana, n. 537; Humboldt and Bonpland).

4. *O. Mutisianum*, Dcne. et Planch. l. c.—*Aralia Mutisiana*, H. B. et K. Nov. Gen. v. p. 1. *A. heterophylla*, Mutis, non Willd. *Hedera Mutisiana*, De Cand. Prod. iv. p. 262.—New Granada (Mutis, Humboldt and Bonpland, Linden! n. 1259; Goudot! n. 1; Hartweg! n. 935; Triana! 189; Purdie!).

5. *O. sessiliflorum*, Dcne. et Planch. in Rev. Hort. l. c.—*Hedera sessiliflora*, Benth. Pl. Hartweg. p. 146.—Ecuador, near Loja (Hartweg! 816).

6. *O. avicenniæfolium*, Dcne. et Planch. in Rev. Hort. l. c.—*Aralia avicenniæfolia*, H. B. et K. Nov. Gen. v. p. 2. t. 2. *Hedera avicenniæfolia*, De Cand. Prod. iv. p. 263. *Aralia trachonanthifolia*, Willd. in Rœm. et Schult. Syst. vi. p. 698.—Ecuador (Humboldt and Bonpland; Spruce! n. 5999).

7. *O. Echinops*, Dcne. et Planch. in Rev. Hort. l. c.—*Hedera Echinops*, G. Don, Gen. Syst. iii. p. 394. *Aralia Echinops*, Schlecht., Linnæa, v. p. 174.—Mexico.

8. *O. macrocephalum*, Dcne. et Planch. in Rev. Hort. l. c. sine de-

script. ; ramis petiolis rachibus pedunculisque ferrugineo-tomentosis demum glabratís; foliis ovato- v. subrotundato-oblongis acuminatis dentatis v. grosse repando-dentatis, 3-nerviis coriaceis, supra glabris, subtus dense flavido-tomentosis ; capitulis masculis globosis in racemos elongatos dispositis ; bracteis ovatis acuminatis ; petalis extus villosiusculis ; capitulis fructiferis oblongis in racemos abbreviatis dispositis ; baccis globosis stylis 5 liberis coronatis.—Province of Larecaja, Bolivia, in forests (Mandon! n. 571 ; Kelly! in Herb. Bth.—) Petioles 3–4 inches long ; blade of leaf 5–6 inches long, 3–4 inches broad ; female flower-heads as large as a good-sized walnut. The plant here described must be *O. macrocephalum*, which M. Decaisne informs me is founded upon a specimen gathered by Weddell in the same locality as that collected by Mandon.

9. *O. Lechleri*, Seem. (sp. nov.) ; robustum ; ramis petiolis rachibus pedunculisque ferrugineo-tomentosis demum glabratís; foliis ovato-oblongis acuminatis, basi subcuneatis, integerrimis v. hinc inde dentatis, 5–7-nerviis, supra glabris, subtus dense ferrugineo-tomentosis capitulis fructiferis longe pedunculatis paucis ; stylis 5–7 ; cæt. ign.—Gachapata, Peru (Lechler! n. 2286).—Leaves about a foot long, 4–5 inches broad. Fruiting flower-heads as large as a cherry.

10. *O. cordatum*, Planch. et Linden, Araliaceæ, p. 7. ined.—New Granada (Goudot! n. 6 ; Linden, n. 962 ; Purdie!).—Leaves sometimes 3-lobed in Purdie's specimens.

11. *O. Pavoni*, Seem. (sp. nov.) ; ramis petiolis rachibus pedunculisque dense fusco-tomentosis ; foliis longe petiolatis ovatis v. subcordato-ovatis acuminatis 5-nerviis crasse coriaceis, supra stellato-puberulis demum glabratís, subtus dense fusco-tomentosis ; paniculis masculis amplis ; capitulis globosis (Pisi maj. magnitudine) ; petalis 4 ovatis extus stellato-pubescentibus ; fl. fœm. ign.—Peru (Pavon! in Mus. Brit.).—Petioles 4–5 inches long ; blade of leaf 4–5 inches long, 3–3½ inches broad.

12. *O. Ecuadoriense*, Seem. (sp. nov.) ; foliis longe petiolatis ovatis 3-fidis, lobis divaricatis ovato-oblongis acuminatis irregulariter et grosse dentatis, basi obtusis, 3-nerviis crasse coriaceis, supra glabris, subtus cinereo-tomentosis ; rachibus pedunculisque tomentosus ; capitulis masc. ovatis v. oblongis ; petalis 4 ovatis acuminatis, extus tomentosus ; fœm. ign.—Western side of the Andes, above Guayaquil, Ecuador (Pavon! in Mus. Brit.).—Petiole 7 inches long, blade of leaf 7 inches long.

13. *O. Macleani*, Seem. ; ramis petiolis rachibus pedunculisque dense villosa-tomentosis ; foliis longe petiolatis ovatis apice 5-lobis, lobis ovato-triangularibus acuminatis integerrimis v. hinc inde dentatis, 8-nerviis, supra glabris, subtus dense villosa-tomentosis ; capitulis masc. globosis Pisi maj. magnitudine ; petiolis extus villosis ; fœm. ign.—Peru (Maclean! in Herb. Hook.).

14. *O. Sprucei*, Seem. (sp. nov.) ; ramis petiolis rachibusque albido-villosa-tomentosis ; foliis palmatim 3-5-fidis, lobis oblongis acuminatis dentatis, supra glabris, subtus albido-tomentosis ; capitulis masculis in paniculas amplas dispositis, Pisi magnitudine ; petalis 5 ovatis acuminatis, extus albido-tomentosis, demum glabratis ; fl. fœm. ign.—Nomen vernac. Ecuadoriense : Púma-máqui (*i. e.* pes tigridis) teste cl. Spruce.—In stony places at the foot of Mount Tunguragira, Ecuador (Spruce! n. 5113).—“A tree 20-30 feet high, slightly branched ; flowers white,” Spruce. Allied to *O. argentatum*.

15. *O. Mathewii*, Seem. (sp. nov.) ; ramis petiolis rachibusque ferrugineo-tomentosis ; foliis palmatim 3-5-fidis, supra glabris, subtus sparse stellato-pubescentibus, demum glabratis ; fl. masc. in paniculas amplas dispositis ; petalis extus glabratis ; fl. fœm. ign.—Chachapoyas, Peru (Mathews! in Herb. Bth.).

16. *O. Bolivense*, Seem. (sp. nov.) ; ramis petiolis rachibus pedunculisque ferrugineo-floccoso-villosis mox glabratis ; foliis palmatim 3-5-fidis, lobis spinuloso-dentatis 5-9-nerviis, demum utrinque glabris ; fl. ign. ; baccis glabris (nigris) stylis 5 coronatis.—Andes of Bolivia, prov. of Larecaja, in forests (Mandon! n. 569).

17. *O. discolor*, Dene. et Planch. l. c.—*Aralia discolor*, H. B. et K. Nov. Gen. v. p. 4. *Hedera discolor*, De Cand. Prod. iv. p. 263.—New Granada (Humboldt et Bonpland ; Triana, n. 538). Peru (Lechler! n. 1974).

18. *O. argentatum*, Dene. et Planch. l. c.—*Aralia argentata*, H. B. et K. Nov. Gen. v. p. 4. t. 114. *A. heterophylla*, Willd. ; Roem. et Schult. Syst. vi. p. 698, fide Kunth. *Hedera argentata*, De Cand. Prod. iv. p. 263.—New Granada (Humboldt et Bonpland).

19. *O. crassinervium*, Dene. et Planch. l. c.—*Aralia crassinervia*, H. B. et K. Nov. Gen. v. p. 5. *Hedera crassinervia*, De Cand. Prod. iv. p. 263.—New Granada (Humb. et Bonpl.).

20. *O. lancifolium*, Planch. et Linden, Araliaceæ, p. 8.—Venezuela (Linden! n. 1432, in Herb. Mus. Brit. et Hook.).

21. *O. fraternum*, Dcne. et Planch. Rev. Hort. l. c.; Planch. et Lind. Araliaceæ, p. 9.—Venezuela (Funk et Schlim, n. 1530).

22. *O. Horquetero*, Dcne. et Planch. Rev. Hort. p. 108; Planch. et Lind. Araliac. p. 9.—Nomen vernac. Horquetero.—Venezuela (Funk et Schlim! n. 1529).

23. *O. hypargyreum*, Dcne. et Planch. in Rev. Hort. l. c.; Planch. et Linden, Araliac. p. 10.—New Granada (Funk et Schlim, n. 1333).

What Decaisne and Planchon have named *O. hypoleucum* is, as Dr. Planchon tells me, this species,

24. *O. Trianae*, Dcne. et Planch. in Rev. Hort. l. c.; Planch. et Linden, Araliac. p. 10.—Nomen vernac. Higueron.—New Granada (Triana! n. 375, Jervise! in Herb. Hook.).

25. *O. chrysoleucum*, Planch. et Linden, Araliac. p. 11.—Venezuela (Funk et Schlim).

26. *O. Cecropia*, Dcne. et Planch. in Rev. Hort. l. c.; Planch. et Linden, Araliac. p. 11.—New Granada (Schlim, n. 113).

27. *O. myriocarpum*, Dcne. et Planch. in Rev. Hort. l. c.; Planch. et Lindl. Araliac. p. 12.—Ibague, New Granada (Goudot! n. 2, Holton!).

28. *O. floribundum*, Dcne. et Planch. in Rev. Hort. l. c.—*Aralia floribunda*, H. B. et K. Nov. Gen. v. p. 6, t. 416. *A. Humboldtiana* et *incisa*, Willd. in Rœm. et Schult. vi. p. 699, fide Kunth. *Hedera floribunda*, De Cand. Prodr. iv. p. 264.—New Granada (Humboldt et Bonpland, Triana! n. 2761, 2703).

29. *O. Humboldtianum*, Dcne. et Planch. in Rev. Hort. 1854, l. c.—*O. Bonplandianum*, Planch. et Linden, Araliac. p. 12. *Aralia ferruginea*, Linden, Cat. Hort. non H. B. et K.—Nomen vernac., fide Ernst, Yagrumo macho.—Silla de Caracas and Valle de Cobre, Venezuela (Fendler! n. 531, 532, 533, Birschel! Funk et Schlim! n. 1524 et 92, Ernst! n. 1118.)

According to information kindly supplied by M. Decaisne, the undescribed *O. Humboldtianum* is identical with *O. Bonplandianum* of Planchon and Linden. It is Bonpland's n. 646:

30. *O. coriaceum*, Dcne. et Planch. in Rev. Hort. l. c.; Planch. et Linden, Araliac. p. 13.—New Granada (Triana! n. 190).

Planchon and Linden quote Triana's n. 130, which is probably a misprint.

31. *O. Ocannense*, Dcne. et Planch. in Rev. Hort. l. c.; Planch. et

Linden, Araliac. p. 13.—Ocaña, New Granada (Schlim! n. 491, in Herb. Hook.).

32. *O. flabellatum*, Dcne. et Planch. in Rev. Hort. l. c.; Planch. et Linden, Araliac. p. 14.—New Granada (Schlim! n. 836, in Mus. Brit. et Herb. Hook.).

33. *O. brachystachyum*, Dcne. et Planch. in Rev. Hort. l. c.—*O. brachybotryum*, Planch. et Linden, Araliac. p. 15.—New Granada (Triana, n. 737).

34. *O. brunneum*, Dcne. et Planch. in Rev. Hort. l. c.; Planch. et Linden, Araliac. p. 5.—Antioquia, New Granada (Triana, n. 376, Jervise!).

35. *O. sclerophyllum*, Dcne. et Planch. in Rev. Hort. l. c.; Planch. et Linden, Araliac. p. 15.—New Granada (Schlim! n. 114, in Herb. Hook.).

36. *O. jatrophæfolium*, Dcne. et Planch. in Rev. Hort. l. c.—*Aralia jatrophæfolia*, H. B. et K. Nov. Gen. v. p. 6, non Lind. Cat. Hort. *Hedera jatrophæfolia*, De Cand. Prodr. iv. p. 264.—New Granada (Humboldt et Bonpland).

37. *O. Lindenii*, Dcne. et Planch. in Rev. Hort. l. c. p. 108; Planch. et Linden, Araliac. p. 16.—*Aralia palmata*, Lind. Cat. Hort. non Willd.—New Granada (Schlim, n. 1725).

38. *O. Xalapense*, Dcne. et Planch. in Rev. Hort. l. c.—*Hedera Xalapensis*, De Cand. Prodr. iv. p. 264. *Aralia Xalapensis*, H. B. et K. Nov. Gen. v. p. 8. *A. digitata*, Willd. in Rœm. et Schult. Syst. vi. p. 701, ex Kunth.—Mexico (Humboldt et Bonpland, Botteri! Jürgensen!) Veraguas (Seemann! n. 1170), Chiapas (Linden! 1651).

39. *O. bulbosum*, Dcne. et Planch. in Rev. Hort. l. c.; Planch. et Linden, Araliac. p. 17.—New Granada (Goudot, Triana).

40. *O. pachycephalum*, Planch. et Linden, Araliac. p. 17.—New Granada (Funk et Schlim, n. 1453; Schlim, n. 6, Purdie!).

41. *O. Meridense*, Planch. et Linden, Araliac. p. 18.—Venezuela (Funk et Schlim! n. 1211, in Herb. Hook.).

42. *O. obtusilobum*, Dcne. et Planch. in Rev. Hort. l. c.—*Aralia obtusiloba*, H. B. et K. Nov. Gen. v. p. 5. *Hedera obtusiloba*, De Cand. Prodr. iv. p. 263.—Ecuador, near Loja (Humboldt et Bonpland).

43. *O. platanifolium*, Dcne. et Planch. in Rev. Hort. l. c.—*Aralia platanifolia*, H. B. et K. Nov. Gen. v. p. 6, t. 415. *Hedera platanifolia*, De Cand. Prodr. iv. p. 263.—Western Andes (Humboldt et Bonpland).

Species dubiæ :

44. *O. (?) Turbacense*, Dcne. et Planch. in Rev. Hort. l. c.—*Aralia Turbacensis*, H. B. et K. Nov. Gen. v. p. 3. *Hedera Turbacensis*, De Cand. Prodr. iv. p. 263. Nomen vernac. Arbol de Guaco.*—New Granada (Humboldt and Bonpland).

45. *O. (?) Cumanense*, Dcne. et Planch. in Rev. Hort. l. c.—*Aralia Cumanensis*, H. B. et K. Nov. Gen. v. p. 3. *Hedera (?) Cumanensis*, De Cand. Prodr. iv. p. 263.—Venezuela (Humboldt and Bonpland).

46. *O. (?) reticulatum*, Dcne. et Planch. l. c.—*Aralia reticulata*, Willd. in Schult. Syst. vi. p. 699. *Hedera reticulata*, De Cand. Prodr. iv. p. 264.—South America (Humboldt and Bonpland).

47. *O. (?) acerifolium*, Seem.—*Aralia acerifolia*, Willd. in Schult. Syst. Veg. vi. p. 699. *Hedera acerifolia*, De Cand. Prodr. iv. p. 264.—South America (Humboldt and Bonpland).

48. *O. (?) cheirophyllum*, Seem.—*Aralia cheirophylla*, Spreng. Syst. i. p. 953. *A. palmata*, Willd. Herb. *Hedera cheirophylla*, De Cand. Prodr. iv. p. 264.—South America (Humboldt and Bonpland).

49. *O. (?) angulare*, Seem.—*Aralia angularis*, Willd. in Schult. Syst. Veg. vi. p. 698. *Hedera angularis*, De Cand. Prodr. iv. p. 263.—South America (Humboldt and Bonpland).

50. *O. peltatum*, Linden ex Regel, Gartenflora, 1862, t. 363.—Amer. trop.

Species indescrptæ :

51. *O. Dombeyanum*, Dcne. et Planch. l. c.—Peru (Dombey, n. 579).

52. *O. Guatemalense*, Dcne. et Planch. l. c. ; Planch. Hortus Donat. p. 9. *Sciadophyllum* sp., Lem. in Fl. des Ser. iii. p. 262, Misc. 44. *Aralia Guatemalensis*, Hort. Variat foliis obtusissimis et acutis.—Central America.

53. *O. Aleurites*, Dcne. et Planch. l. c.—Peru (Herb. Savon; communicated by Boissier).

54. *O. oxyodon*, Dcne. et Planch. l. c.—Oaxaca, Mexico (Ghiesbreght).

55. *O. pseudo-Jatropha*, Dcne. et Planch. l. c.—(*Aralia jatrophæfolia*, Linden, Cat. Hort. non H. B. et K.)—New Granada.

56. *O. pseudo-Platanus*, Dcne. et Planch. l. c.

* In the Isthmus of Panama the name "Palo" or "Arbol de Guaco" is given to *Cratæva gynandra*, Linn. Can the two plants be the same? Flowers and fruit of *O. (?) Turbacense* are unknown, and I have not seen the authentic specimens.

57. *O. furinosum*, Dcne. et Planch. l. c.—Pamplona, New Granada (Schlim, n. 58).

58. *O. lanigerum*, Dcne. et Planch. l. c.—Ocaña, New Granada (Schlim, n. 58).

59. *O. macrophyllum*, Dcne. et Planch. l. c.—(*Aralia macrophylla*, Linden, Cat. Hort.).

60. *O. elegans*, Dcne. et Planch. l. c.—(*Aralia elegans*, Linden, Cat. Hort.).

61. *O. lacinosum*, Dcne. et Planch. l. c.—New Granada (Triana, n. 424).

62. *O. incisum*, Dcne. et Planch. l. c.

63. *O. amplum*, Dcne. et Planch. l. c.—La Culata, Prov. of Merida, Venezuela (Funk et Schlim, sine numero.)

64. *O. Ruizii*, Dcne. et Planch. in Rev. Hort. l. c.—Oaxaca, Mexico (Ghiesbreght).

Species exclusa :

O. Brownei, Witte=*Dendropanax Japonicum*, Seem.

IX. ON *HEDERA CANARIENSIS* AS AN IRISH PLANT.

(Plate III.)

The existence of *Hedera Canariensis* in Ireland has been so often asserted and denied that most botanists seem to look upon the plant as one of those phantom species which occasionally flit across the botanical forum. Before publishing my revision of the genus *Hedera**

* The genus *Hedera*, as now circumscribed, is very natural, and easily distinguished from all other *Hederaceæ* by its climbing and rooting branches, simple leaves, five petals and stamens, semi-inferior ovary, single style, and ruminant albumen. Dr. F. Müller recently referred to it an Australian species, which I cannot admit, as it has a completely inferior ovary and compound leaves. I hold it to be the type of a new genus, which may be briefly described as:—*Kissodendron*. Pedicelli articulati. Calycis limbus 5-dentatus. Petala 5, aestivatione valvata, in calyptram coherentia et tali modo v. tarde ex apice secedentia. Stamina 5. Stylus 1, elongatus. Drupa infera, baccata, 3-5-pyrena. Albumen ruminatum. Arbor glabra Novæ Hollandiæ, inermis, foliis pinnatis plurijugis, foliolis integerrimis ovatis v. lanceolato-ovatis brevi-acuminatis, basi obtusa inæquilateris, pedunculis primariis elongatis, secundariis inferioribus oppositis, superioribus aliquot verticillatis, summis umbellatis, umbellulis 8-12-floris. Species unica, *K. Australianum*, Seem.—*Hedera Australiana*, F. Muell. Fragm. iv. p. 120. *Polyscias Australiana*, F. Muell. Coll. *Iringia Australiana*, F. Muell. Fragm. v. p. 18.—Rockingham Bay, E. C. of Aus-

(Journ. of Bot. Vol. II. p. 303) I had made many inquiries about the subject, and looked at every book I could think of; nevertheless I was compelled to state that I had "not been able to examine any specimens of will Irish Ivy," and "that our British Floras did not afford any information respecting it." With the help of Dr. D. Moore, of Glasnevin, whose kind aid no man of science ever invoked in vain, I am able to clear up much of what formerly appeared doubtful.

There is in gardens a very fast-growing, large-leaved plant, commonly called "Irish or Scotch Ivy" (*Hedera Hibernica* v. *Scotica hortulanorum*). This plant, as I understand the species, is one of the many varieties of *H. Helix*. There is, besides, a plant which gardeners call "Sharp-leaved Irish Ivy," and this I hold to be one of the varieties of *H. Canariensis*. It is figured in our Plate, occurs wild in Ireland, and is evidently the plant alluded to by Mackay in his 'Flora Hibernica.' Dr. Moore says of it:—

"The plant known in gardens as the Sharp-leaved Irish Ivy, I do not remember ever seeing myself in a wild state. I, however, saw it lately, growing at West Aston, Co. Wicklow, and Mrs. Acton, mother to the present proprietor, who has resided there during the last sixty years at least, told me, she remembers getting it from the late Mr. Hodgens, of Dunganstown, Co. Wicklow, about forty years ago, as a rarity he found somewhere in the neighbourhood of that place. I consider it to be the plant alluded to by the late Dr. Mackay in 'Flora Hibernica,' p. 135, who compares the leaves to those of *Passiflora cærulea*! and states it was found by Mr. Hodgens, and also on walls near Merrion. The latter place is about four miles from Dublin. I have no doubt plenty of additional information will be obtained concerning the plant, after the figure in the 'Journal of Botany' is published, but the foregoing are the only facts I am able to state at present about it."

A certain confirmation of *H. Canariensis* being an indigenous Irish plant is afforded by its general geographical distribution. Assuming it to belong to the Iberian types of our flora, and acting upon that assumption, I procured, through Dr. Welwitsch's kind offices, specimens of the *Hedera* growing in Portugal; and I was delighted to find it to be *H. Canariensis*, thus furnishing another proof of the correctness of the accepted theory of plant distribution. Specimens from the Rev.

tralia (Dallachy! comm. cl. F. Muell.). This new genus is allied to *Pentapanax*, Seem. (Journ. of Bot. Vol. II. p. 294), both having pinnated leaves and an arboreous habit, but they differ in the following points:—*Pentapanax*. Drupa exsucca. Albumen æquabile. India orient.—*Kissodendron*. Drupa baccata. Albumen ruminatum. Nov. Holl.

Mr. Lowe had already enabled me to pronounce the Madeira Ivy *H. Canariensis*; so that the geographical range is now pretty well ascertained, the species being found in the Canary Islands, Northern Africa, Madeira, Iberian peninsula, and Ireland.

I have not yet concluded my inquiries into the varieties of *H. Helix* and *Canariensis*; and should like to test certain characters more fully before using them for diagnostic purposes. For the present, it is sufficient to say that the characters derived from the stellate hair of the pedicels and calyx (the hair having 8 rays in *H. Helix* and from 13 to 15 in *H. Canariensis*) absolutely distinguish the two species. In *H. Helix* the rays are clearly in a single whorl; but under very high microscopic power it would seem as if in *H. Canariensis* there were two whorls, one placed above the other. But I have not been able to satisfy myself on this point, and if there be two whorls, perhaps some skilful manipulator may succeed in separating them.

Hedera Canariensis; foliis inferioribus cordatis v. 3-5-lobatis, floralibus cordatis v. ovatis acuminatis, integerrimis v. hinc inde grosse dentatis; umbellis in racemos v. paniculas dispositis, pilis pedicelli et calycis stellato-13-15-radiatis; drupis nigris.—*H. Canariensis*, Willd. in Berl. Mag. ii. p. 170. t. 5. fig. 1; Schult. Syst. v. p. 508. *H. Helix*, var. (?) *Canariensis*, De Cand. Prodr. iv. p. 261. *H. Helix*, Lowe, Fl. Mad. p. 376, non Linn. Sharp-leaved Irish Ivy, hortul.

H. corymbosa, Chois., conjectured to be a synonym, is, according to an authentic specimen obligingly communicated by M. Alph. de Candolle, a *Bixinea*, *Hydnocarpus corymbosus*, Seem.

EXPLANATION OF PLATE III., representing *Hedera Canariensis*, from garden specimens kindly communicated by Dr. D. Moore.—Fig. 1, a flower-bud; 2, a flower open; 3, a cross section of ovary; 4, the stellate hair found on pedicels and calyx:—*all magnified*. At the back one of the lower leaves.

X. ON THE GENERA TORICELLIA, DECOSTEA, AND ADOXA.

(TAB. IV.)

The monotypic genus *Toricellia* was established by De Candolle (Prodr. iv. p. 257) upon a plant of the Nepal mountains, which Wallich distributed under the name of *Sambucus* (?) *tiliæfolia*. At first sight the plant has some points which certainly do remind us of *Sambucus*; the pith of the stem and branches is thick and spongy, as in Elder-

trees, and the flowers have somewhat the look of those of *Sambucus*. But the corolla is not monopetalous, nor imbricate in æstivation; it consists, on the contrary, of 5 petals, induplicate in æstivation,—characters removing it entirely from *Caprifoliaceæ*. De Candolle placed *Toricellia* in *Hederaceæ*, but in that Order it cannot be retained, on account of its induplicate petals, which are so closely united to the calyx that, unlike those of genuine *Hederaceæ*, they never fall off, nor can they be separated from the organ they adhere to, without tearing them. Nor does the nature of inflorescence or the leaves in any way accord with that of *Hederaceæ* proper. In finally rejecting *Toricellia* from the Order, the question is where should it be referred to. In *Umbelliferae* proper we have induplicate petals, but the inflorescence and 3-4-merous fruit are against an admission into that Order, and even if the widest interpretation is put upon the adhesion of the calyx and corolla of *Toricellia*, we could not but own that the *Cucurbitaceæ* have a differently-constructed corolla, which renders impossible any incorporation of the genus with that Order, though *Sicyos*, with its pendulous ovules, may invite an examination into possible degrees of relationship. *Haloragææ*, as now circumscribed, rather than *Corneæ*, to which Bentham and J. Hooker refer it, seem to offer the only suitable place, and I would range the genus next to *Loudonia*, with which it agrees in the æstivation of the corolla, and somewhat in inflorescence. The special claims of *Toricellia* for admission into *Haloragææ* rest upon its dichlinous flowers, induplicate petals, and tetramerous fruit.* Most specimens of *Toricellia* contained in herbaria were distributed by Wallich, and had, in almost all instances, male flowers only. The female flowers are still unknown, but Griffith gathered branches with fruit nearly ripe, and from them, by the courtesy of the late Sir W. Hooker, our Plate (n. 4) has been made. In the printing of the plate a line of fig. 1 has not come out satisfactorily, making it appear as if calyx and corolla were merged in the manner of *Cucurbitaceæ*, whilst in the specimens the calyx-limb can be traced distinctly all round; the teeth of the calyx ought also to have been drawn less blunt.

TORICELLIA, De Cand. Prodr. iv. p. 257; Endl. Gen. n. 4557;

* At my suggestion Professor Gulliver was induced to investigate *Toricellia*, and he finds it destitute of raphides, as is *Hippuris* and the other *Haloragineæ* he has examined. "This character is the more remarkable," he says, "because the very next Order under which *Hippuris* used to be placed, abounds in raphides."

Benth. et Hook. Gen. i. p. 952. Flores dioici. Masc. : Calycis margo 5-dentatus. Petala 5, obovato-oblonga, cucullata, cum lacinula inflexa, membranacea, persistentia, æstivatione induplicata. Stamina 5, filamentis brevissimis; antheræ oblongæ, 2-loculares, longitudinaliter dehiscentes; pollinis granula globosa. Discus planiusculus. Ovarium rudimentarium. Fœm. : Calyx tubo cum ovario connato, limbo supero 3-5-lobo. Corolla nulla. Stamina nulla. Discus inconspicuus. Ovarium 4-, v. abortu 3-loculare, loculis 1-ovulatis, ovulis pendulis. Styli 4 v. 3, liberi, apice 2-fidi, stigmatosi. Drupa ovata, 3-4-angulata, calycis limbo coronata, 3-4-locularis. Semina linearia, solitaria, pendula.—Arbor parva, ramosa, ramis tectibus crassiusculis late medullosis, foliis exstipulatis alternis deciduis simplicibus cordato-subrotundis v. subquinque-lobatis, palmatim 5-7-nerviis, grosse et acute dentatis; paniculis terminalibus ∞ -floris, floribus albidis, masculis pedicellatis, fœmineis sessilibus, drupis parvis (purpurcis).—Species unica :—

1. *T. tiliæfolia*, De Cand. Prodr. iv. p. 257. (Tab. Nostr. n. 4.)
Sambucus (?) *tiliæfolia*, Wall. Cat. n. 483. Nepal (Wallich!), Bootan (Griffith!), Sikkim (J. D. Hooker!).

EXPLANATION OF PLATE IV., representing *Toricellia tiliæfolia*, from specimens of Wallich and Griffith. Fig. 1. A male flower in bud. 2. A male flower open. 3. A 3-merous ovary. 4. A tetramerous fruit not quite ripe. 5 and 6. Cross and transverse sections of the same, all magnified.

Décosteæ, a Peruvian genus of Ruiz and Pavon, has been referred by Bartling to *Juglandææ* with a mark of doubt, but it has lately been identified with *Griselinæ*, Forst. (*Pukateria*, Raoul). By Endlicher (Gen. n. 4576) it is regarded as allied to *Corneæ*. The petals of the male flowers are imbricate. It seems to me to be a genus which might also be referred with propriety to *Haloragineæ*. The female flowers are, in some species, without petals and stamens, as those of *Toricellia* are.

Adoxa still lingers in most of our European Floras in *Hederaceæ*, though it was shown more than thirty years ago, by J. Rœper (see Meisner, Gen. Comm. p. 111) to be intimately related to *Sambucus*, Linnæus and Jussieu referred it to *Saxifrageæ*, near *Chrysosplenium*; Adanson to *Portulacææ*, placed by him between *Cactææ* and *Saxifrageæ*; and De Candolle, Bartling, Lindley, Endlicher, Fries, Brongniart, Decaisne, and others, to *Araliaceæ*. Payer made *Adoxa* the type of a distinct Natural Order, which he thought more allied to *Sambucineæ*

than *Hederaceæ*; and Agardh (*Theoria*, p. 77), who also regards it as a separate Order, looks upon the *Adoxææ* as "*Ranunculaceæ* verticillis omnibus floralibus clausis, partibus ideo (!) numero definitis arctiusque conjunctis;" which reminds us of the views of Caspar Bauhin, who named *Adoxa* "*Ranunculus nemorosus, Muscatellina dictus.*" In 1860, Professor Røeper published a critique of parts of Agardh's '*Theoria*,' in his well-known '*Preconceived Botanical Opinions Defended*,'* in which he shows convincingly that on this point Agardh's views are erroneous, and that *Adoxa* does not constitute a separate Natural Order allied to *Ranunculaceæ*, but must retain its place near *Sambucus*, where he put it years ago.

XI. ON THE GENERA WITH ARTICULATED PEDICELS AND DIMEROUS OVARY.

There are only three genera which come under this heading, *Sciadopanax*, *Macropanax*, and *Nothopanax*, the two former of which have already been treated upon; and they differ by the following characters:—

XVII. *SCIADOPANAX*. Stigmata 2, stylopedio conico imposita. Albumen ruminatum.—Arbor Madagascariensis; foliis imparipinnatis.

XI. *MACROPANAX*. Stylus 1, elongatus. Albumen æquabile.—Frutices Indiæ orientalis; foliis digitatis.

XXVIII. *NOTHOPANAX*. Styli 2–3, elongati, distincti. Albumen æquabile.—Arbores v. frutices Asiæ, Africæ, et Australiæ; foliis simplicibus v. pinnatim digitatimve compositis.

XXVIII. *NOTHOPANAX*, Miq. in *Bonplandia*, 1859, p. 139, et *Fl. Ned. Ind.* vol. i. pars i. p. 765. Pedicelli articulati. Flores calyculati, polygami. Calycis tubus obconicus; limbus minute 5-dentatus. Petala 5, æstivatione valvata. Stamina 5. Styli 2 (per excessum 3), dein divergentes, fere ad basin usque facie interiore stigmatosi. Ovarium 2-, rarissime 3-loculare. Drupa didymo-compressa v. rarissime 3-gona. Albumen æquabile.—Frutices sæpius anisati; foliis decompositis, pinnatis digitatis v. simplicibus; petiolis basi stipulatim dila-

* "*Vorgefasste Botanische Meinungen, vertheidigt von Dr. Johannes Røeper, Professor in Rostock.*" Rostock; 1860. 8vo. A book displaying a profound knowledge of the vegetable kingdom.

tatis; umbellis decompositis v. racemoso-paniculatis, floribus parvis albidis v. viridiusculis.—*Panacis*, *Araliæ*, et *Paratropiæ* sp. auct.

Nothopanax was established in 1856 by Miquel in the 'Bonplandia' for a set of shrubby *Hederaceæ* having articulate pedicels, polygamous 5-androus flowers, and a two-celled ovary. The generic character there given was admitted by him, unaltered, in his 'Flora of Dutch India;' but in the Supplement of that work he amplified it so far as to admit a *Hederacea* with 5–7 styles, which he named *N. tricoccleatum*. In another more recent publication (Ann. Mus. Lugd. Bat. vol. i.), he rejects the genus altogether, and refers all the species once more to the old Linnæan genus *Panax*. I think *Nothopanax* ought to be upheld, and be restricted to the dicarpous (by excess tricarpous) species. The 5-carpous plant Miquel referred to it I consider to *Polyscias pinnata*, Forster. With *Panax*, as I understand the genus, *Nothopanax* has but distant relationship. The genus now comprises twenty-one species, but it is quite possible that some of them will have to be rejected when better specimens can be examined. I more than half suspect that *N. (?) obtusum*, of which I have not seen a specimen, may belong to my new genus *Heteropanax*, which is founded upon the East Indian *Panax fragrans*, Roxb. What I have seen in herbaria under the name of *Panax pinnatum*, Lam., is certainly a species of *Arthrophyllum*, a genus easily known by its 1-celled ovary; and Miquel's description of "*Panax pinnatum*," given in the Annales above quoted, must refer to a different plant, perhaps a genuine *Nothopanax*. I have also my suspicion about *N. cochleatum* (known to me only from books). It has simple leaves, whilst all the other species of the genus have compound ones. Most of the species have a very strong smell of aniseed and celery,—hence the name of "Celery-tree" is given to *N. elegans*, Seem., by the Queensland colonists.

* *Folia decomposita tripinnata.*

1. *N. fruticosum*, Miq. in Bonpl. 1856, p. 139; Fl. Ned. Ind. l. c. p. 765.—*Panax fruticosum*, Linn. Spec. p. 1515; Wight, Icon. t. 573. *Scutellaria tertia*, Rumph. Amb. vol. iv. p. 78. t. 33.—Indian Archipelago (Horsfield!), Cochinchina (Loureiro! in Brit. Mus.), Ceylon (Seemann!), Wallis Island (Sir E. Home!), Viti Islands (Seemann! n. 204). Much cultivated about houses by all Malayan and Polynesian races.

2. *N. (?) obtusum*, Miq. in Bonpl. 1856, p. 139; Fl. Ned. Ind. l. c. p. 166.—*Panax obtusum*, Bl. Bijdr. p. 890; Miq. Ann. Lugd. Bat. vol. i. p. 15.—Western Java (Blume!). Perhaps a species of *Heteropanax*.

3. *N. elegans*, Seem. Fl. Vit. p. 114.—*Panax elegans*, Fraser, mss.; Muell. Fragm. vol. ii. p. 107, et in Trans. Phil. Soc. Victoria, 1857. *Panax polybotrys*, F. Muell. Herb. *Panax decompositum*, Muell. Herb.—“Celery-tree” of Moreton Bay. Island and shores of Moreton Bay (A. Cunningham! F. Mueller!).

** *Folia simpliciter pinnata.*

4. *N. Cumingii*, Seem. l. c.—*Paratropia Cumingiana*, Presl, Epim. p. 250; Walp. Ann. vol. ii. p. 725.—Philippine Islands (Cuming! n. 1553), Borneo (Motley! in Herb. Hook.).

5. *N. multijugum*, Seem. Fl. Vitiens. p. 115, t. 18 et 19.—*Paratropia (?) multijuga*, A. Gray, Bot. Wilkes, p. 722.—Viti (Seemann! n. 205; Harvey! U. S. Expl. Exped.).

6. *N. Macgillivrayi*, Seem. Fl. Vitiens. l. c.—*Panax Macgillivrayi*, Benth. Fl. Austr. iii. ined. Cape York, Australia (M'Gillivray!).

7. *N. Murrayi*, Seem. l. c.—*Panax Murrayi*, F. Muell. Fragm. vol. ii. p. 106.—New South Wales (Oldfield! in Herb. Hook.).

8. *N. molle*, Seem.—*Panax mollis*, Benth. Fl. Austr. iii. p. 382 (ined.).—Rockingham Bay (Dallachy!).

9. *N. (?) Anisum*, Miq. in Bonplandia, 1856, p. 139, et Fl. Ned. Ind. l. c. p. 766.—*Panax Anisum*, De Cand. Prodr. vol. iv. p. 254. *Anisum Moluccanum*, Rump. Amb. vol. ii. p. 132, t. 42.—Moluccas (Rumphius!). Known only from Rumphius's figure and description.

10. *N. sambucifolium*, C. Koch, Wochenschrift, 1859, p. 77.—*Panax sambucifolium*, Sieb. in De Cand. Prodr. vol. iv. p. 255. *P. margaritifera*, Visiani (ubi?), teste C. Koch, Wochenschrift, 1859, p. 370. *Panax dendroides*, F. Muell. Fragm. vol. ii. p. 107. *Trachymene pinnata*, Cunn. in Herb. Hook.—East Coast of New Holland (Sieber! n. 256; A. Cunningham! Beckler!), Victoria and Australia Felix (F. Mueller!). Varies with narrow and broad leaves, Mueller's *P. dendroides* and *angustifolium* representing the narrow-leaved forms.

11. *N. Zippelianum*, Seem. Fl. Vit. p. 115.—*P. Zippelianum*, Miq. Ann. Lugd. Bat. vol. i. p. 15.—New Guinea (Zippelius!).

12. *N. Samoense*, Seem. Fl. Vit. l. c.—*Panax Samoense*, A. Gray, Bot. Wilkes, p. 717.—Samoan Islands (U. S. Expl. Exped. ! Powell!).

13. *N. farinosum*, Seem. mss.—*Aralia farinosa*, Delil. mss., in Ferret et Galinier, Voy. en Abyss. iii. p. 135, n. 72; Walp. Ann. ii. p. 724. *Panax pinnatum*, A. Rich. Tent. Fl. Abyss. i. p. 335; Walp. Ann. ii. p. 723. *Aralia pinnata*, Hochst. Plant. Exsic.—Abyssinia (Hochstetter!).

*** *Folia digitata.*

14. *N. simplex*, Seem.—*Panax simplex*, Forst. Prodr. n. 399, et Icon. (ined.) t. 287; De Cand. Prodr. iv. p. 253; A. Rich. Fil. t. 31; Hook. Fl. Ant. i. p. 18, t. 12; Fl. N. Zel. i. 93, et Handb. p. 100.—Auckland Islands (Hooker!), New Zealand (Forster! Bidwill! Colenso!).

15. *N. anomalum*, Seem.—*Panax anomalum*, Hook. Lond. Journ. Bot. ii. p. 422, t. 13; Fl. N. Zel. i. p. 93, et Handb. p. 101.—Northern and Middle Islands of New Zealand (Nelson! Bidwill!).

16. *N. Colensoi*, Seem.—*Panax Colensoi*, Hook. fil. Fl. N. Zel. i. p. 94, t. 21.—“Ivy-tree” of Otago. Middle and Southern Islands of New Zealand (Colenso! Lindsay! Hector!, etc.).

17. *N. cephalobotrys*, Seem.—*Panax cephalobotrys*, F. Müll. Fragm. ii. p. 83.—On the Richmond River, New Holland (Beckler!).

18. *N. arboreum*, Seem.—*Panax arboreum*, Forst. Prodr. n. 398, et Icon. (ined.) t. 286; De Cand. Prodr. iv. p. 253; Endl. in Ann. Wien. Mus. i. p. 187, t. 15; Hook. Lond. Journ. Bot. ii. p. 421, t. 11; Hook. fil. Fl. N. Zel. i. p. 24, et Handb. p. 102.—New Zealand (Forster! Banks and Solander! etc.), Kermadec group (M'Gillivray!). Cultivated in Europe.

19. *N. Sinclairi*, Seem.—*Panax Sinclairi*, Hook. fil. Handb. Fl. N. Zeal. p. 103.—Northern Island of New Zealand (Colenso! Sinclair!).

20. *N. Gunnii*, Seem.—*Panax Gunnii*, Hook. fil. in Lond. Journ. Bot. vi. p. 466, et Fl. Tasm. i. p. 163, t. 37.—Van Diemen's Land (Gunn! Milligan!).

**** *Folia simplicia.*

21. *N. cochleatum*, Miq. in Bonplandia, 1856, p. 139, et Fl. Ned. Ind. l. c. p. 766.—*Aralia cochleata*, Lam. Dict. vol. i. p. 224. *Panax cochleatum*, De Cand. Prod. iv. p. 255. *Panax scutellarioides*, Rein. in Blume, Bijdr. p. 888. *Panax conchifolium*, Roxb. Fl. Ind. vol. ii. p. 77. *Scutellaria prima*, Rumph. Amb. vol. iv. p. 75, t. 31.—Indian Archipelago.

Species exclusæ.

N. (?) *pinnatum*, Miq. = *Arthrophyllum*, sp.

N. *tricochleatum*, Miq. = *Polyscias pinnata*, Forst.

XII. ON THE GENERA WITH INARTICULATE PEDICELS, DIMEROUS OVARY, AND RUMINATE ALBUMEN.

Under this heading belong *Heteropanax* and *Cussonia*, differing in the following absolute characters:—

XXIX. *Heteropanax*. Styli 2, liberi, demum divaricati. Drupa exsucca, compressa.—Arbor Indica, foliis impari- v. supradecomposite pinnatis, umbellis paniculatum dispositis.

XXX. *Cussonia*. Styli 2-3, basi connati. Drupa baccata, subglobosa.—Arbores Africæ tropicæ, foliis palmatis v. digitatis; floribus umbellatis, racemosis v. spicatis.

XXIX. HETEROPANAX, Seem. Fl. Vit. p. 114, in adnot. Pedicelli inarticulati. Flores ecalyculati, hermaphroditi. Calyx tubo obconico, limbo minute 5-dentato. Petala 5, ovata, 1-nervia, æstivatione valvata. Stamina 5. Ovarium 2-loculare, loculis 1-ovulatis. Styli 2, liberi, demum divaricati. Drupa exsucca, didyma, compressa, 2-pyrena. Albumen ruminatum.—Arbuscula inermis Indiæ orientalis, foliis alternis simpliciter impari- v. supradecomposite pinnatis, foliolis petiolulatis ovatis acuminatis integerrimis, umbellis paucifloris paniculatis, pedunculis pedicellis calycibusque stellato-tomentosis, floribus odoratis.—*Panaxis* sp. auct. Species unica:

1. *H. fragrans*, Seem. l. c.—*Panax fragrans*, Roxb. Cat. Calc. 21; De Cand. Prodr. vol. iv. p. 254, excl. syn. Don.—Bootan (Griffith, n. 2073), Kumaon (Strachey et Winterbottom!), Sikkim, 2-4000 feet (Hooker fil. et Thomson!), Khassia (Hooker fil. et Thomson!), Calcutta Bot. Garden (Wallich! n. 4929 b), Assam plants (Jenkins!)—Very variable in foliage, some leaves being scarcely a foot long, others exceeding 4-5 feet in length, with petioles 2 feet and more. Don's *Hedera fragrans*, referred with a mark of doubt to this species by De Candolle, is *Pentapanax Leschenaultii*, Seem., a common Nepal plant.

XXX. CUSSONIA, Thunb. Nov. Act. Ups. iii. p. 212; Nov. Gen. i. p. 11.—Pedicelli inarticulati. Flores ecalyculati, hermaphroditi. Calyx tubo obovato, limbo 5-7-dentato v. truncato. Petala 5-7, libera, æstivatione valvata. Stamina 5-7. Ovarium 2- v. per excessum 3-

loculare, loculis 1-ovulatis. Styli 2 v. per excessum 3, basi connati. Drupa baccata, globosa, leviter compressa, 2- v. per excessum 3-locularis. Albumen ruminatum.—Arbores v. frutices Africæ tropicæ v. subtropicæ, inermes; foliis alternis palmatis v. digitatis 5-9-foliolatis, foliolis simplicibus v. compositis (lomentaceis); floribus umbellatis, racemosis v. spicatis.

This genus is allied to *Sphærodendron*, from which it differs chiefly by its ruminant albumen; and it is possible that some *Cussonias* will have to be transferred to it when their fruit shall have become known. To restrict *Cussonia* to the species with spicate flowers, as Miquel wishes to do, appears to me impracticable.

* *Folia palmata.*

1. *C. Natalensis*, Sond. in Sond. et Harv. Fl. Cap. ii. 561.—Natal (Gueinzus; Gerrard! in Mus. Brit.).

2. *C. Gerrardii* (sp. nov.), Seem. mss. in Mus. Brit.; glabra; foliis palmato-5-lobis, lobis ovatis longe acuminatis glanduloso-incisosserratis, 5-nerviis, subtus reticulatis v. supremis ovato-acuminatis; umbellis paniculatim dispositis, paniculis axillaribus.—Natal (Gerrard! in Mus. Brit.).

3. *C. arborea*, Hochst. mss. ex A. Rich. Tent. Fl. Abyss. i. 356, p. 58; Walp. Ann. ii. p. 723.—Abyssinia (Schimper! in Herb. Hook.).

** *Folia digitata.*

4. *C. umbellifera*, Sond. Linnæa, xxiii. p. 49; Walp. Ann. ii. p. 123; Harvey et Sond. Fl. Cap. ii. p. 570; Dietr. Fl. Univ. fasc. 9 (1856), t. 90.—*C. paniculata*, E. Mey. non Eckl. et Zeyh.—Natal (Drége! Sanderson! Sutherland! Gerrard!).

5. *C. (?) Bojeri* (sp. nov.), Seem. mss. in Mus. Brit.; glabra; foliis 3-foliolatis, foliolis lineari-lanceolatis acutis, basi connatis; umbellis paucifloris in paniculas axillares dispositis, ovario 2-loculari; fruct. ignot.—Madagascar (Bojer! Blackbourn!). Ripe fruit being unknown, the genus is somewhat doubtful.

6. *C. thyrsiflora*, Thunb. Nov. Act. iii. t. 12; De Cand. Prodr. iv. p. 255.—*C. thyrsoides*, Pers. Euch. i. p. 98.—Cape of Good Hope (Fr. Masson! Roxburgh! in Mus. Brit.; Sir F. Gray! Zeyher! Burchell! in Herb. Hook.).

7. *C. calophylla*, Miq. in Ann. Sci. Nat. ser. 3, vol. i. p. 36 (1844); Walp. Rep. v. p. 925.—*C. Kraussi*, Hochst. in Flora (Ratisb.), 1834, p. 431; Walp. Rep. v. p. 925. *Sciadophyllum Comorense*, Boj. mss.—Natal.

(Gueinzus!), Orange Free State (Cooper!), Comoro Islands (Bojer!), Mohely (Boivin!).—Miquel's name seems to have the priority by a few months over Hochstetter's. In leaf often resembling *C. thyrsiflora* and *C. paniculata*.

8. *C. Kirkii* (sp. nov.), Seem.; arborea; foliis digitatim 9-foliolatis, foliolis ovalibus longe acuminatis basi attenuatis, supra venulis depressis, subtus venulis reticulatis elevatis; floribus spicatis.—Moramballa, South Africa (Kirk!). "Tree, about 20 feet high; leaves at the extremities of the branches. Stem, when cut, yields a gum. Flower-spikes numerous from amongst the leaves" (*Kirk, ms.*). Named in honour of its discoverer, Dr. Kirk, and allied to *C. arborea*, from which it differs by its truly digitate leaves, *C. arborea* having deeply divided palmate ones.

9. *C. Barteri* (sp. nov.), Seem. mss. in Herb. Kew.; foliis digitatim 5-foliolatis, foliolis subcuneato-obovatis acuminatis integerrimis glabris; floribus spicatis, spicis tomentosis; drupis baccatis (albis).—Dry rocky hills, Niger River (Barter! in Herb. Hook.).

10. *C. spicata*, Thunb. Nov. Act. Upsal. iii. p. 212, t. 13; De Cand. Prodr. iv. p. 255.—*C. triptera*, Colla, Hort. Rip. 43, t. 26.—Caffraria and Cape of Good Hope (Niven! F. P. Oldenburg! in Mus. Brit.; Drège! in Herb. Hook.), Tschirandzura (Kirk!).

11. *C. paniculata*, Eckl. et Zeyh. n. 226; Sond. et Harvey, Fl. Cap. ii. p. 569.—Cape of Good Hope (Drège; Zeyher! n. 746; Burke!), Natal (Gerrard! 1265), Basuta Land (T. Cooper!).

Species exclusa.

C. Lessoni, A. Rich. = *Pseudopanax Lessoni*, C. Koch.

XIII. ON THE GENUS RAUKANA.

XXXI. RAUKANA, gen. nov.—Pedicelli inarticulati. Flores ecalyculati, hermaphroditi. Calyx tubo obconico, limbo 5-dentato. Petala 5, ovata, æstivatione valvata. Stamina 5. Ovarium 2- per excessum 3-loculare, loculis 1-ovulatis. Styli 2-3, basi connati, apice recurvi, intus stigmatosi. Drupa ovata, subcompressa v. 5-angulata, 2-3-locularis, loculis 1-spermis. Albumen—Arbor Novæ-Zelandiæ, 20-40-pedalis; foliis exstipulatis, oppositis v. alternis, 1- v. 3-foliolatis, foliolis oblongis v. lineari-lanceolatis integerrimis v. pinnatifidis,

membranaceis lucidis; umbellis terminalibus v. axillaribus, involu-
cratis.

1. *R. Edgerleyi*, Seem.—*Panax Edgerleyi*, Hook. fil. Fl. N. Zeal. i. 94, et Handbook, p. 101. Nomen vernaculum N. Zelandicum, teste Hooker, "Raukana."—Mountainous regions of the Northern and Middle Islands of New Zealand (Edgerley! Colenso! Bidwill! Hector! in Herb. Hook.).

According to Edgerley, the natives rub their bodies with the fragrant leaves of this tree, whence the name.

XIV. ON THE GENUS TREVESIA.

XXXII. *TREVESIA*, Visiani, Mem. della Reale Acad. della Sc. di Torino, ser. ii. tom. iv. p. 262; C. Koch, Wochenschrift, 1859, p. 67; Walp. Rep. v. p. 226; Miq. Ann. Lugd.-Bat. i. p. 10. (*Actinanthæ*, sect. *Sciadophylli*, Miq. Comm. Phyt. p. 102.)—Pedicelli inarticulati. Flores ecalyculati, polygamo-monoici. Calyx tubo brevi-turbinato v. ellipsoideo-urceolato, limbo brevissimo integerrimo v. obsoletissime 8-10-denticulato, in fructu irregulariter crenulato. Petala 10, abortu pauciora, ovato-lineararia v. ovato-triangularia, basi plus minus connata, æstivatione valvata. Stamina petalorum numero; filamentis breviusculis; antheræ ovatis, æstivatione biserialiter imbricata. Stylus 1; stigma 10-radiata. Ovarium 10- v. abortu 8-4-loculare, loculis 1-ovulatis. Drupa exsucca, stylo coronata, 10-4-pyrena, pyrenis chartaceis ligneis. Semina valde compressa; albumen æquabile; cotyledones lanceolatae.—Frutices v. arbores Asiæ tropicæ, aculeatæ, pube stellata; foliis amplis palmatilobis, lobis serratis v. pinnatifidis; umbellis in paniculos terminales dispositis, floribus viridiusculis.

Allied to *Reynoldsia*, from which it differs in habit, shape of the petals, ovate anthers, stigmas seated on an elongated style, and ovary not having more than 10 cells.

1. *T. Sundaica*, Miq. in Bonplandia, 1856, p. 137; Fl. N. Ind. vol. i. pars i. p. 747; Ann. Lugd.-Bat. i. p. 11; Regel, Gartenflora, 1864, t. 438.—*Sciadophyllum palmatum*, Bl. Bijdr. p. 875; De Cand. Prodr. iv. p. 259. *Brassaia palmata*, Dene. et Planch. in Rev. Hort. 1854, p. 106. *Aralia Reinwardtiana*, Steudl. Nom. Bot. i. p. 119 (errore typog. "Reinwoldiana"). *A. palmata*, Reinw. (non Linn. nec Willd.).—Java.

2. *T. palmata*, Visiani, l. c. ; C. Koch, l. c. pp. 67 et 371.—*Gastonia palmata*, Roxb. Cat. Calc. 33 ; Lindl. Bot. Reg. t. 894. *Gilibertia palmata*, De Cand. Prodr. iv. p. 256. *Aralia palmata*, Hort. *A. dubia*, Spreng. fide Steudel. *Hedera ferruginea*, Wall. Cat. n. 4909.—India (Wallich !, n. 4910), Sikkim (Hooker et Thomson !), Calcutta Bot. Garden (Roxburgh !, n. 273, in Mus. Brit.).

3. *T. Molluccana*, Miq. in Bonplandia, 1856, p. 137 ; Fl. N. Ind. l. c. p. 478, et Ann. Lugd.-Bat. p. 220.—*Aralia (?) palmata*, Lam. Dict. i. p. 224 ; De Cand. Prodr. iv. p. 258 ; Rumph. Amb. iv. t. 43.—Moluccas.

May be identical with *T. palmata*, Vis.

4. *T. Zippeliana*, Miq. in Ann. Lugd.-Bat. p. 11.—*Eschweilera palmata*, Zippel, Herb. et mss.—Amboina (Zippelius).

“*T. Molluccanæ*, Miq., simillima, sed ovario drupisque 4-ocularibus cæt. sui juris, ab Zippelio tanquam proprii generis typus in mss. adumbrata” (Miquel).

5. *T. insignis*, Miq. Ann. Lugd.-Bat. i. p. 220 ; petiolo aculeato, aculeis mollibus sparsis subfasciculatisque ; foliis amplis digitato-7-partitis, lobis infimis minoribus, 3 mediis subæqualibus, omnibus præter basin attenuatam apicemque pinnatifidis spinuloso-serratis, pergamaceo-chartaceis glabris, nervis lobos primarios intrantibus validis utrinque exsertis ; umbellis 5-floris ; drupis 5-angulatis.—Bantjan, Moluccas (Teijsmann), New Guinea (Hinds ! in Herb. Benth.).

There is only one indifferent specimen in Bentham's Herbarium, to which he alluded in Lond. Journ. of Bot. ii. p. 222.

XV. ON THE GENUS CHEIRODENDRON.

XXXIII. CHEIRODENDRON, Nutt. mss. in Herb. Mus. Brit. (gen. nov.). Pedicelli articulati, calyculati, calyculo dentato v. subfimbriato. Flores polygami. Calycis tubus obpyramidatus, 3- v. 4-5-angulatus ; limbus truncatus, minute 5-dentatus. Petala 5, ovato-triangularia, libera, æstivatione valvata. Stamina 5 ; antheræ 2-loculares. Ovarium 5- v. 4-3-loculare, loculis 1-ovulatis. Stigmata 5 v. abortu 4 v. 3, stylopodio imposita. Drupa carnosæ, 3-5-angulatis, 3-5-pyrenis. Albumen corneum, æquabile.—Arbores Hawaienses et Chilensis, inermes, foliis exstipulatis oppositis v. alternis, digitato-3-5-foliatis, foliolis ovatis v. ovalibus serratis v. subintegerrimis ; umbellis laxè paniculatis.—*Hedera Panacis* et *Araliæ* sp. auct.

Closely allied to the genus *Pseudopanax*, C. Koch, from which it differs by its denticulate calyculus and stigmas seated on a stylopodium. *Sciadophyllum Gayanum*, Dcne. et Planch. Rev. Hort. 1854 (nomen solum), is probably a synonym of one of the Chilian species of *Cheirodendron*.

1. *C. Gaudichaudii*, Seem.—*Aralia trigyna*, Gand. Bot. Freyc. Bot. p. 474. t. 98. *Panax* (?) *Gaudichaudii*, De Cand. Prodr. iv. p. 253; Hook. et Arn. Bot. Beech. p. 84. *Hedera Gaudichaudii*, A. Gray, Bot. Wilkes, p. 719. t. 90.—Hawaiian Islands (D. Nelson! Menzies! Nuttall! Macrae!).

Var. β ; foliolis sæpius 3 subovatis vix denticulatis seu integerrimis.—*Panax* (?) *ovatum*, Hook. et Arn. Bot. Beech. p. 84.—Hawaiian Islands (Nuttall!).

2. *C. platyphyllum*, Seem.—*Panax* (?) *platyphylla*, Hook. et Arn. Bot. Beech. p. 84. *Hedera platyphylla*, A. Gray, Bot. Wilkes, p. 720. t. 91.—Hawaiian Islands (Lay and Collie!).

3. *C. lætevirens*, Seem.; foliolis elongatis cuspidatis inciso-serratis.—*Aralia lætevirens*, Gay, Fl. Chil. iii. p. 151.—Woods of Valdivia, Chili, as far north as the river Maule (Gay!, Dombey!). Termed "Sauce" (*i. e.* Willow) by the Chilians, and used by them as a sudorific.

4. *C. Valdiviense*, Seem.; foliolis ovatis acuminatis subintegerrimis v. obscure serratis.—*Aralia Valdiviensis*, Gay, Fl. Chil. iii. p. 152. *Sciadophyllum racemiferum*, Miq. in Herb. Hook. *Aralia paniculata*, Philippi. Nomen vernaculum Chilense, "Saluco falso," teste Philippi. "Arbor 20 ped." Philippi Plant. Chil. n. 236.—Island of Chiloe (Capt. King!); Straits of Magellan (Whinnie, Capt. King!); Valdivia, outskirts of woods. (Bridges! n. 78, ex parte; Lechler! n. 1417 et 1302; Harvey! Gay!)

5. *C. Samoense*, Seem.—*Paratropia Samoensis*, A. Gray, Bot. Wilkes, p. 722.—Samoan Islands (U. St. Expl. Exped.!).

XVI. ON THE GENUS TRIPLASANDRA.

XXXIV. TRIPLASANDRA, Seem. (gen. nov.).—Pedicelli inarticulati. Flores ecalyculati, polygami. Calycis tubus obovatus; limbus truncato-repandus. Petala 5–6, triangulari-lanceolata, æstivatione valvata. Stamina duplo triplove petalorum numero, uniserialia; filamenta subulata; antheræ oblongæ. Ovarium 5–6-loculare, loculis 1-ovulatis.

Stigmata 5-6, punctiformia, stylopodio brevi conico imposita. Drupa baccata, ovato-oblonga, 5-6-angulata. Albumen æquabile.—Arbor Hawaiiensis; foliis exstipulatis, pinnato-5-9-foliolatis, foliolis carnosis oblongis v. ovalibus obtusis integerrimis; umbellis compositis cymosis. Species unica:

1. *T. Oahuensis*, Seem.—*Gastonia* (?) *Oahuensis*, A. Gray, Bot. Wilkes, i. p. 726; Horace Mann, Enum. Hawaiian Plants, p. 169. Nomen vernac. Hawaiense, fide Mann, "Ohe mauka."—Hawaiian or Sandwich Islands (U. S. Expl. Exped. !; H. Mann !; Hillebrand !).

Asa Gray, not having fertile flowers when he first described this plant, provisionally referred it with a mark of doubt to *Gastonia*. When revising *Gastonia* I excluded it from that genus, being convinced that it was the type of a new one; and the specimens just received from Mr. H. Mann, of Cambridge, Mass., collected in December, 1867, by Dr. Hillebrand, enable me to publish the above character. It is closely related to *Tetraplasandra*.

XVII. ON THE GENUS MARALIA.

(PLATE V.)

Bentham and Hooker fil. ('Genera Plantarum') referred my genus *Oligoscias* to *Panax*, from which, as limited by me, it differs by its pentacarpous fruit and valvate petals. It proves, however, to be identical with the little-known genus *Maralia*, Petit Thouars.

XXXV. MARALIA, Petit Thouars, Nov. Gen. Madag. p. 13, n. 43; De Cand. Prodr. iv. p. 255.—Pedicelli articulati. Flores ecalyculati, hermaphroditi. Calycis tubus turbinatus, limbo 5-dentato. Petala 5, ovato-triangularia, libera, æstivatione valvata. Stamina 5, filamentis brevibus, antheris oblongis. Ovarium inferum, 3-5-loculare, loculis 1-ovulatis. Styli 3-5, filiformes, omnino liberi, stigmatibus punctiformibus. Drupa baccata, ovato-oblonga, 3-5-pyrena. Albumen ruminatum.—Frutex Madagascariensis, inermis, foliis exstipulatis pinnatis 2-3-jugis cum impari, petiolis supra canaliculatis, foliolis lateralibus sessilibus, terminali petiolulato, infimis subrotundatis substipulæformibus, supremis ovatis v. ellipticis, basi acutis, acuminatis, 3-5-setaceo-dentatis; umbellis 5-8-floris, longe pedunculatis; pedicellis filiformibus (6-8 lin. long.); floribus drupisque albis.—*Oligoscias*, Seem. Journ. of Bot. iii. p. 179. Species unica:—

1. *M. Madagascariensis*, De Cand. l. c.—*Oligoscias Madagascariensis*, Seem. Journ. of Bot. iii. p. 179. *Aralia Maralia*, Schult. Syst. vi. p. 704. *Panax Maralia*, Dcne. et Planch. in Rev. Hort. 1854, p. 105. —Madagascar, Betroun, Tamatave and Antananarivo, on clay hills, 2000–3000 feet above the sea. (Meller! Lyall! n. 232, and others.)

EXPLANATION OF PLATE V., representing *Maralia Madagascariensis*, from specimens obligingly lent by Dr. Hooker.—Fig. 1. Flower-bud. 2. Open flower. 3. Stamens. 4. Ovary, far advanced. 5. The same, cut across. 6. Seeds:—all, with figure on right-hand side of 6, magnified.

XVIII. ON THE GENUS ELEUTHEROCOCCUS.

XXXVI. ELEUTHEROCOCCUS, Maxim. Prim. Fl. Amur. p. 132; Bth. et Hook. f. Gen. i. p. 941.—Pedicelli articulati. Flores ecalyculati, polygami. Calycis margo vix prominulus, integer v. minute dentatus. Petala 5, rarius 6–7, submembranacea, æstivatione valvata. Stamina tot quot petala; antheræ ovato-oblongæ. Discus convexus, in conum v. columnam stylorum abiens. Ovarium 5-rarius 6–7-loculare. Stylus 1, stigmatibus terminali. Drupa baccata, globosa, siccitate sæpe angulata; pyrenæ crustaceæ, a latere compressæ. Semen planum. Albumen æquabile.—Frutex Amurensis, aculeatus, foliis digitatim 5-foliolatis, foliolis membranaceis serrulatis, stipulis vix prominulis v. nullis; umbellis solitariis v. paucis, sæpius geminis, bracteis minutis caducis v. nullis.

In habit closely resembling some digitate-leaved Indian *Aralias*, but differing from them in its valvate corolla and single style.

1. *E. senticosus*, Maxim. l. c.; Regel, Gartenflora, 1863, tab. 393. —*Hedera* (?) *senticosus*, Rupr. et Maxim. olim.—Forests of Manchuria, where it forms part of the underwood (Maximowicz!).

XIX. ON THE GENUS KISSODENDRON.

(PLATE VI.)

The genus *Hedera*, as circumscribed by me, is very natural, and easily distinguished from all other *Hederaceæ* by its climbing and rooting branches, simple leaves, inarticulate pedicels, five petals and stamens, semi-inferior ovary, single style, and ruminant albumen. Dr. F. Mueller referred to it an Australian species, which has, however, articulate pedicels, a completely inferior ovary and compound leaves, and is held by me to be the type of the genus *Kissodendron*. This genus

resembles *Pentapanax*, Seem. (Journ. of Bot. vol. ii. p. 294), both having pinnated leaves and an arboreous habit, but they differ in the following points:—

Pentapanax. Petala æstivatione imbricata. Drupa exsucca. Albumen æquabile. India orient.

Kissodendron. Petala æstivatione valvata. Drupa baccata. Albumen ruminatum. Nov. Holl.

XXXVII. *KISSODENDRON*, Seem. Journ. of Bot. vol. iii. p. 201 in adnot. (*Irvingia*, F. Muell. Fragm. vol. v. p. 17.)—Char. emend.: Pedicelli articulati, ecalyculati v. calyculo obscuro. Calycis limbus 5-dentatus. Petala 5, æstivatione valvata, in calyptram cohærentia et tali modo v. tarde apice resilientia. Stamina 5. Ovarium inferum, 3-5-loculare, loculis 1-ovulatis. Stylus 1, elongatus. Drupa baccata, 3-5-pyrena. Albumen ruminatum.—Arbor glabra Novæ Hollandiæ, inermis, foliis pinnatis plurijugis, foliolis integerrimis ovatis v. lanceolato-ovatis brevi-acuminatis, basi obtusa inæquilateris, pedunculis primariis elongatis, secundariis inferioribus oppositis, superioribus aliquot verticillatis, summis umbellatis, umbellulis 8-12-floris. Species unica:

1. *K. Australianum*, Seem. l. c.—*Hedera Australiana*, F. Muell. Fragm. vol. iv. p. 120. *Polyscias Australiana*, F. Muell. Coll. *Irvingia Australiana*, F. Muell. Fragm. vol. v. p. 17.—Rockingham Bay, E. Coast of Australia (Dallachy! comm. cl. F. Muell.).

EXPLANATION OF PLATE VI., representing *Kissodendron Australianum*, from specimens kindly furnished by the Kew and Melbourne Herbaria.—Fig. 1. Flower bud. 2. Expanded flower and stamen. 3. Ovary. 4. Ovary cut across. 5 and 6. Ripe fruit and seed. 7. Fruit cut across. 8 and 9. Different views of seed:—all, with exception of 5, magnified.

XX. ON THE GENUS DIPANAX.

XXXVIII. *DIPANAX* (gen. n.), Seem. Pedicelli inarticulati. Flores ecalyculati. Calyx . . . Petala 5. Stamina 5; antheræ ovatæ. Ovarium semisuperum, 2-loculare, loculis 1-ovulatis. Stigmata 2, sessilia. Drupa exsucca, 2-locularis, 2-sperma. Albumen . . .—Arbuscula Hawaiensis, foliis imparipinnatis, junioribus inflorescentiisque furfuraceo-puberulis demum glabratis; foliolis brevissime petiolatis 13-15 coriaceis oblongis v. ovatis integerrimis basi cordatis, umbellis racemoso-paniculatis. Species unica:

1. *D. Manni*, Seem.—*Heptapleurum dipyrenum*, Mann in Proceedings of the American Academy, vol. vii. p. 168.—Lanai, Hawaiian Islands (Mann!).

The sessile stigmas and inarticulate pedicels distinguish this genus from all other known dicarpous *Hederaceæ*. The flowers are unknown, but on the young ovaries, kindly communicated to me by Mr. Mann, the impression made on them by the stamens before anthesis is clearly discernible; and from this it appears that there were 5 stamens and ovate acute anthers.

XXI. ON THE GENUS DIDYMOPANAX.

XXXIX. DIDYMOPANAX, Dcne. et Planch. in Revue Horticole, 1854, p. 109. Linden et Planch. Araliac. p. 1.—Pedicelli inarticulati. Flores polygami (masc. et hermaph.), mono- et dioici. Calycis limbus repando-5-dentatus. Petala 5, crassiuscula, libera, æstivatione valvata. Stamina 5, petalis breviora; antheræ ovatæ, mucronulatæ. Discus explanatus, margine libero undulato. Ovarium 2-loculare, in fl. masc. effectum. Styli 2, sæpius basi ima, nunc longiuscule concreti (divisuris intus 1-sulcis stigmatosis) apud fl. masc. imperfecti, in fructu maturo persistentes, indurati, recurvi. Bacca drupacea, 2-pyrena, transverse elliptica, didyma, v. orbiculato-ovata; pyrenis a latere valde compressis, margine externo (v. dorso) leviter bicarinatis, latere utroque costis tenuibus nerviformibus arcuatis notatis, putamine crustaceo, læviusculo v. rugoso. Semina in oculis 1, lævia v. rugosa, integumento tenni. Albumen æquabile.—Arbores v. frutices Americæ tropicæ, sericeo- v. velutino-tomentosæ, nunc glabræ; foliis simplicibus v. sæpissime digitatim compositis, foliolis petiolulatis coriaceis integerimis circa tuberculum v. apiculum centralem quasi verticillatis; stipulis parvis, petiolo adnatis; umbellis in paniculas amplas terminales dispositis; floribus viridiusculis.—Benth. et Hooker, Gen. Plant. p. 939.

* *Folia simplicia.*

1. *D. lucumoides*, Dcne. et Planch. Rev. Hort. 1854, p. 109 (sine descript.). *Dendropanax tomentosum*, Seem. Journ. of Bot. 1864, p. 302; Revision Heder. p. 28!—Minas Geraes, Brazil (Claussen! 1843, n. 83; 1841, n. 4; et Coll. 1840. Dupré! Gardner! n. 4703).

** *Folia digitatim composita.*

2. *D. speciosum*, Dcne. et Planch. l. c.—*Panax speciosum*, Willd. Sp. iv. p. 1126. *P. undulatum*, H. B. K. Nov. Gen. et Sp. iv. p. 11. t. 417. f. 2, icon. fr. *P. spinosum*, Poir. Suppl. ii. p. 778.—Venezuela (Bonpland! in Herb. Paris).

3. *D. Morototoni*, Dcne. et Planch. l. c.—*Panax Morototoni*, Aubl. Guian. ii. p. 949. t. 360. *P. undulatum*, Pers. Ench. p. 298, non Kunth?—Guiana (Aublet! in Mus. Brit., Perrottet!), Brazil (Guillemin! Burchell! n. 1842 et n. 4896; Moricand, n. 2345), Rio Negro and Casiquiare (Spruce! n. 1683 et n. 3456), Cuba (Wright! n. 211), Panama (Seemann! n. 1615, Sutton Hayes!), Dutch Guiana (Anderson! in Mus. Brit.), Trinidad (Crüger!), Tovar, Venezuela (Fendler! n. 2337), Popayan, N. Granada (Triana! Schlim et Funk!).

This is probably not distinct from *D. speciosum*. The leaflets are either attenuate at the base or rounded, and the tomentous covering underneath the blade varies in colour, being either of a brown or more or less silvery hue. The leaves of young plants are quite membranaceous, ciliate-dentate, and pilose.

4. *D. chrysophyllum*, Dcne. et Planch. l. c.—*Panax chrysophyllum*, Vahl, Eclog. i. p. 33. *P. undulatum*, Pers. Ench. p. 298, non Kunth?—Porto Rico (Herb. Paris!).

5. *D. marginatum*, Dcne. et Planch. l. c.—Minas Geraes, Brazil (Claussen! 1838, n. 39).

6. *D. parviflorum*, Dcne. et Planch. l. c.—*Panax parviflorum*, Mart. et Zucc. in Abh. d. Math. Phys. Cl. d. Baier. Akad. i. 319; Walp. Rep. ii. p. 429.—Minas Geraes, Brazil (Gardner! n. 4705, in Herb. Mus. Br. et Paris).

7. *D. calvum*, Dcne. et Planch. l. c.—*Panax calvum*, Cham. in Linnæa, viii. p. 232; Walp. Rep. ii. p. 422.—Brazil (Burchell! n. 2690; Spruce! n. 2811).

8. *D. sericeum*, Dcne. et Planch. l. c.—*Panax sericeum*, Pohl in De Cand. Prodr. iv. 254. *P. vinosum*, Cham. et Schlecht. in Linnæa, i. p. 403.—Brazil (Pohl! Langsdorff! Gardner! n. 4709, n. 8880; Burchell!).

9. *D. Pœppigii*, Dcne. et Planch. l. c.—*Panax chrysophyllum*, Pœpp., non Vahl.—Mayna Alto, Peru (Pœppig! n. 1959).

10. *D. argyrophyllum*, Dcne. et Planch. l. c.

11. *D. splendens*, Dcne. et Planch. ex Planch. et Linden, Araliac. p. 3.—*Panax splendens*, H. B. K. Nov. Gen. v. p. 11; De Cand. Prodr. iv. p. 253. n. 15. *Aralia (?) micans*, Willd. mss. ex Schult. Syst. vi. p. 101; De Cand. Prodr. iv. p. 258. n. 11.—Popayan (Bonpland! in Herb. Paris).

12. *D. Spruceanum*, Seem.—*Hedera Spruceana*, Benth. mss.—Near Panure (Spruce!, n. 2307, in Herb. Paris et Mus. Brit.).

13. *D. Claussonianum*, Dcne. et Planch. in Herb. Paris.—Minas Geraes, Brazil (Claussen! Coll. ann. 1841, n. 1495, and Coll. ann. 1838, n. 40).

14. *D. calcophyllum*, Dcne. et Planch. in Herb. Paris.—Bahia, Brazil (Blanchet! n. 2345).—Looks like *D. Morototoni*. Is it different?

15. *D. glabratum*, Dcne. et Planch. ex Linden et Planch. Araliac. p. 3.—*Panax glabratum*, H. B. K. Nov. Gen. v. p. 10; De Cand. Prodr. iv. p. 253. *P. attenuatum*, Swartz, Prodr. 54; Fl. Ind. Occ. ii. p. 562; Griseb. W. Ind. Fl. p. 306. *P. Caribbæum*, Sieb. Fl. Martin. n. 290.—Martinique (Pléc! n. 771), Caracas, Tovar, and Galipan (Funk et Schlim! n. 91, n. 528, et n. 530), Guadaloupe (De Ponthieu!), St. Christopher (Fr. Mason!), St. Vincent (Guilding!) Trinidad (Herb. Kew.).

Ought to be called *D. attenuatum*, if these two are identical, as I hold them to be. Styles connate nearly to top. Petals calyptiform, coherent.

16. *D. Gardneri*, Seem. (sp. nov.); foliis digitato-5-natis; foliolis subrotundatis v. ovato-rotundatis acuminatis, basi obtusis, margine integerrimis revolutis, supra glabris, lucidis, subtus sericeo-tomentosis; umbellis in paniculas terminales sericeo-tomentosas dispositis.—Diamond District, Brazil (Gardner! n. 4708).—"A shrub, about four feet high," Gardner, mss.

17. *D. macrocarpum*, Seem.—*Panax macrocarpum*, Cham. et Schlecht. in Linnæa, i. p. 404.—Minas Geraes, Brazil (Sellow! Claussen! Coll. ann. 1840; Gardner! n. 4759, n. 4706, n. 4707; Burchell! n. 5144).

18. *D. Burchelli*, Seem. mss. in Herb. Hook.; foliis digitatim 7-natis, foliolis obovato-oblongis apice subbilobis, basi attenuatis, utriusque glaberrimis.—Porto Real, Brazil (Burchell! n. 8425).

Sciadophyllum rubiginosum, Pl. et Lind. Aral. p. 24, Venezuela (Funk et Schlim, n. 1528), is probably a species of *Didymopanax*.

XXII. ON THE GENUS HORSFIELDIA.

XL. HORSFIELDIA. Pedicelli inarticulati, ecalyculati. Flores polygami. Calycis tubus ovatus; limbus obsolete denticulatus. Petala 5, ovata, acuta, libera, æstivatione valvata. Stamina 5; filamenta elongata, filiformia; antheræ subrotundæ. Ovarium 2-loculare, loculis 1-

ovulatis. Ovula pendula. Styli 2, omnino liberi, divaricati. Drupa didymo-compressa, 2-pyrena, pyrenis 3-costatis. Semina oblonga. Albumen æquabile. Embryo minutissimus.—Frutices magni, aculeati, Americæ boreal.-occid., Japoniæ et insulæ Javæ; foliis exstipulatis alternis peltatis vel palmatis, petiolis inermibus v. spinosis; umbellis subsessilibus vel pedunculatis, basi bracteolatis; in racemos v. spicas simplices vel compositas dispositis.—*Horsfieldia*, Bl. Bijdr. p. 885; Brown et Bennett, Pl. Jav. Rar. p. 123. t. 26. *Schubertia*, Bl. l. c. *Echinopanax*, Dcne. et Planch. in Rev. Horticol. 1854, p. 105. *Oplonanax*, Miq. in Ann. Mus. Lugd. Bat. i. p. 16. *Panax* sp. auct.

I cannot find any structural difference of generic importance between *Horsfieldia aculeata*, Bl., and *Echinopanax horridum* (*Panax horridum*, Smith), and therefore do not hesitate to unite them. The two form a very natural genus, with a distinct habit. In 1863 I transferred this genus from *Umbellifera* to *Hederaceæ*, a view now generally adopted.

1. *H. aculeata*; foliis peltatis utrinque inermibus subtus dense stellato-tomentosis; umbellis subsessilibus basi pluri-bracteatis; calyce hispido; fructu paleaceo-setoso.—*H. aculeata*, Bl. Bijdr. p. 885; Brown et Bennett, l. c. p. 123. t. 25. *H. peltata*, Benth. et Hook. Gen. i. p. 937—Java (Horsfield! in Mus. Brit.).

2. *H. horrida*; foliis palmatis utrinque aculeatis, subtus ad costas nervisque pilis crispis sparsis instructis; umbellis pedunculatis, ebracteatis; calyce fructuque inermi glabro.—*Horsfieldia horrida*, Seem. mss. *Panax horridum*, Smith in Rees' Cycl. n. 10; De Cand. Prodr. iv. p. 252; Hook. Fl. Bor. Am. i. p. 273. t. 98; Torr. et Gray, Fl. N. Amer. i. p. 648. *Aralia erinacea*, Hook. in Brewst. Edinb. Journ. 1827, p. 64; De Cand. Prodr. iv. p. 259. *Echinopanax horridum*, Dcne. et Planch. Rev. Hort. 1854, p. 105.—North-west America (Menziés! Capt. Portlock! in Mus. Brit.), Wahlanat (Nuttall! in Mus. Brit.); Japan (C. Wright! in Herb. Kew.).

There is a good illustration of the mode of growth and habit of this plant (so great an impediment to travellers in the woods of north-west America) in my translation of Kitlitz's 'Twenty-four Views of the Islands and Vegetation of the Pacific,' plate ii. fig. $7\frac{f}{g}$ and $2/3\frac{f}{g}$.

XXIII. ON THE GENUS ACANTHOPANAX.

XLI. ACANTHOPANAX, Seem. Pedicelli inarticulati. Flores ecalyculati, polygami. Calyx minute 5-dentatus. Petala 5, 1-nervia,

libera, valvata. Stamina petalorum numero iisque alterna; antheræ ovatæ v. oblongæ. Styli 2, basi connati, apice divaricati. Discus convexus v. medio conicus. Ovarium 2-loculare, loculis 1-ovulatis. Fructus didymo-compressus, 2-locularis. Albumen æquabile.—Arbusculæ v. frutices aculeati, Indiæ or., Chinæ, et Japoniæ, foliis simplicibus v. digitatim 3-5-foliolatis, foliolis serratis, umbellis globosis solitariis v. paniculatis.—*Panax* subg. *Acanthopanax*, Dene. et Planch. Rev. Hort. 1854, p. 105. *Kalopanax*, Miq. in Ann. Mus. Lugd. Bat. i. p. 16. *Plectronia*, Lour. Fl. Coch. i.

1. *A. ricinifolium*, Seem.—*Panax ricinifolium*, Sieb. et Zucc. in Abhandl. Baier. Akad. iv. 2. p. 199. *Kalopanax ricinifolium*, Miq. in Ann. Mus. Bot. Lugd. Bat. i. p. 16. *Brassaiopsis ricinifolia*, Seem. Journ. of Bot. vol. ii. p. 291.—Japan (Siebold! in Herb. Benth.; Oldham! Maximowicz!), N. China (Fortune! in Herb. Mus. Brit.).

2. *A. aculeatum*, Seem. *Panax aculeatum*, Ait. Kew. iii. p. 448; De Cand. Prod. iv. p. 252; Jacq. Coll. iv. p. 175; Icon. Rar. t. 634.—*Zanthoxylon trifoliatum*, Linn. Spec. 1455; Lam. Dict. ii. p. 40. *Plectronia Chinensis*, Lour. Fl. Cochinch. i. p. 201. *Panax Loureirianum*, De Cand. l. c. p. 252. *Aralia trifoliata*, Meyen, Reise, ii. p. 332, nomen, teste C. Koch, Wochenschrift, 1859, p. 366.—Southern China, about Canton and Macao (Seemann! n. 2457; Millett! in Herb. Hook.; Sir G. Staunton! Robertson! Bradley; Lord Macartney! in Mus. Brit.), Assam plains (Jenkins! in Herb. Hook.), Khassia (Griffith! in Herb. Hook.); East Indies (Wallich!, n. 4926), Assam (Griffith!, n. 787 in Mus. Brit.), Amoy (Herb. Bth.).

3. *A. spinosum*, Miq. Ann. Lugd.-Bat. i. p. 10.—*Panax spinosum*, Linn. fil. Suppl. 441; Lam. Dict. ii. p. 715. *Aralia pentaphylla*, Thunb. Fl. Jap. 128; De Cand. Prodr. iv. p. 259.—Japan (Thunberg! in Mus. Brit.; Wright! in Herb. Hook.). Thunberg's specimen at the British Museum has only 2, not 5, styles.

4. *A. sepium*, Seem.; arbuscula; ramis patentibus aculeatis, aculeis recurvis; foliis 3-5-foliolatis, foliolis ellipticis acuminatis in petiolum attenuatis dentatis glabris, petiolis aculeatis; umbellis globosis terminalibus, solitariis v. paniculatis; pedicellis elongatis; calyce ecalyculato 5-dentato; petalis 5, 1-nerviis, liberis; stylis 2, apice divaricatis, basi connatis; fructu didymo-compresso, 2-loculari.—“Small, dull green tree or bush, with dense patent branches, growing in hedges.” Hook. fil. in Sched. Herb. Kew.—Khasia Hills, E. Indies (J. D. Hooker!).

5. *A. divaricatum*, Seem.—*Panax divaricatum*, Sieb. et Zucc. Abhand. Baier. Akad. iv. 2. p. 198; Walp. Ann. i. p. 981. *Kalopanax divaricatum*, Miq. Ann. Lugd.-Bat. i. p. 17.—Japan (Siebold! in Herb. Benth.; Maximowicz!).

6. *A. sessiliflorum*, Seem.—*Panax sessiliflorum*, Rupr. et Maxim. Fl. Amur. p. 131; Regel, Gartenflora, 1862, t. 369.—Amur (Maximowicz), Manchuria (Wilford!), Northern China (Fortune? Fischer). Stem and petioles armed.

7. *A. Sumatranum*, Seem.—*Kalopanax Sumatranum*, Miq. l. c.—Sumatra.

8. *A. resectum*, Seem.—*Kalopanax resectum*, Miq. l. c.—Patria?

9. *A. innovans*, Seem.—*Panax innovans*, Sieb. et Zucc. l. c.—Japan (Maximowicz!).

XXIV. ON THE GENUS TETRAPANAX.

XLII. TETRAPANAX, C. Koch, Wochenschr. f. Gärtn. und Pflanzenk. 1859, p. 371; Ed. Otto et Sonder in Hamburg. Gartenz. 1862, p. 61. Pedicelli inarticulati. Flores ecalyculati, hermaphroditi. Calycis margo obsoletus. Petala 4 v. 5, ovata, acuta, æstivatione valvata. Stamina 4 v. 5; filamenta elongata; antheræ elliptico-ovatae. Styli 2, erecti, demum recurvi. Ovarium 2-loculare, loculis 1-ovulatis. Drupa baccata.—Frutex Chinensis, inermis, stoloniferus, caule erecto 5–9-ped. striato annulato intus copiose albissimo-medullosa; foliis terminalibus longe petiolatis amplis palmatim lobatis, lobis omnibus acutis serratis, subtus (præcipue junioribus) totis stellato-subferrugineo-tomentosis, stipulis 2 magnis subulatis; umbellis in paniculas terminales amplas dispositis; floribus albido-flavis.—*Didymopanax*, subg. *Tetrapanax*, C. Koch, Wochenschrift, n. 10. p. 71. *Araliæ* sp., Hook.

Prof. C. Koch was the first to perceive that the plant described by Hooker as *Aralia papyrifera* had nothing to do with *Aralia*, and therefore referred it as a subgenus to *Didymopanax*,—subsequently separating it as a distinct genus (*Tetrapanax*), to which he thought *P. innovans* and *P. ricinifolium* might possibly belong. But the two latter both out turn to be species of *Acanthopanax*, a genus differing in its spinose habit and dry fruit from *Tetrapanax*, but which is by far more intimately related to it than *Fatsia*, to which Hook. fil. and Bentham (Gen. Plant. p. 939) have referred both *Aralia papyrifera* and *A. erinacea* (= *Horsfieldia*). Ed. Otto has already pointed out (Hamburg. Gartenz. l. c.) that in *Aralia papyrifera* pentamerous flowers pre-

dominate over the tetramerous ones, and that the name *Tetrapanax* is on that account open to objection; but if we were to change every inappropriate name, our botanical nomenclature would have to undergo considerable alterations, and I therefore shall retain that of C. Koch. The only species of *Tetrapanax* at present known is the following:—

1. *T. papyrifera*, C. Koch, l. c.—*Aralia* (?) *papyrifera*, Hook. in Kew Journ. iv. p. 53. t. 1 et 2. *A. papyrifera*, Hook. Bot. Mag. t. 4897; Fl. des Ser. viii. t. 806, 807: xii. t. 1201; G. Bennett, Gatherings of a Naturalist, t. 6; ejusd. Wanderings, vol. ii. p. 77, cum icone (1834); ejusd. in Seem. Journ. of Bot. 1864, p. 309. “Rice-paper Plant” of English Gardens.—Island of Formosa (Oldham! in Herb. Hook.), China (Bowring!).

Interesting particulars about the habit of this plant are given by Dr. Bennett, who, it appears, was the first to publish a figure of the Rice-paper Plant. It throws up numerous suckers, the suckers flowering the second year after they have been removed from the mother plant, and every time after flowering form two new branches.

XXV. ON THE GENUS ASTROTRICHA.

XLIII. *ASTROTRICHA*, De Cand. Prodr. iv. 74, et Mem. Omb. 29. t. 5, 6; Benth. et J. Hook. Gen. Plant. i. p. 937; Benth. Fl. Austr. iii. p. 379.—Pedicelli articulati. Flores ecalyculati, hermaphroditi. Calycis tubus ovatus; limbus minimus, vix 5-dentatus. Petala 5, ovalia, subacuta, æstivatione valvata. Stamina 5; antheræ oblongæ. Discus subplanus, margine libero undulato. Ovarium 2-loculare. Styli 2, distincti, a basi filiformes; stigmata terminalia. Fructus ovatus, a latere compressus exalatusque v. transverse subteres ad commissuram longitudinaliter alatus, exocarpio membranaceo v. subcarnoso; pyrenæ a latere compressæ, præsertim ad commissuram induratæ ibidemque utrinque sulcatæ v. in loculos spurios vacuos productæ. Semen oblongum. Albumen æquabile.—Frutices Australienses, plus minus stellato-tomentosi v. lanati, foliis alternis petiolatis indivisis subtus tomentosis; stipulis nullis; umbellis paniculatis; bracteis parvis setaceis v. nullis.

A genus so closely allied to *Nothopanax*, that it can only be separated by artificial characters; so that the latter, bearing the more recent name, may have to be merged into it. In 1863 I transferred it (Journ. of Bot. i. p. 280) from *Umbelliferae*, where up to that time it had been placed, to *Hederaceæ*,—a view since adopted by various authors.

1. *A. pterocarpa*, Benth. Fl. Austr. iii. p. 379.—Queensland, at Fitzroy Island (Walter Hill!).

2. *A. floccosa*, De Cand. Mem. Ombell. 30. t. 5; Prodr. iv. p. 75; Benth. Fl. Austr. iii. p. 379.—*Bolax floccipes*, Sieb. Pl. Exs. n. 258.—Queensland and New South Wales, Australia (R. Brown! Sieber! n. 258, A. Cunningham!).

Var. α . *subpeltata*, Benth. l. c.

Var. β . *angustifolia*, Benth. l. c.

Var. γ . *incana*, Benth. l. c.—*A. latifolia*, Benth. in Hügel, Enum. 55.

3. *A. longifolia*, Benth. in Hügel, Enum. 55; Fl. Austr. iii. p. 380.—Queensland and New South Wales (A. Cunningham! F. Mueller! R. Brown! M'Arthur!).

4. *A. ledifolia*, De Cand. Memb. Omb. 30. t. 6; Prodr. iv. p. 74; Benth. Fl. Austr. iii. p. 380.—*A. hoveoides*, A. Cunn.; Benth. in Hügel, Enum. 55. *A. linearis*, A. Cunn.; Benth. l. c. γ . *asperifolia*, F. Muell.; Klatt in Linnæa, xxix. p. 709. *Bolax ledifolius*, Sieb. Plant. Exs. n. 25.—New South Wales and Victoria (Sieber! n. 257, A. Cunningham! F. Mueller!).

ARALIACEÆ.

The following genera belong to the *Araliaceæ* proper, distinguished by an imbricate (often quincuncial) æstivation of the corolla. To them should be added my genus *Pentapanax*, which does not have a valvate corolla, as stated in Journ. of Bot. ii. p. 294; whilst, on the other hand, *Mackinlaya*, F. Muell., should be referred to *Umbelliferae* proper. The genera belonging to this suborder form two natural groups:—

I. ARALIEÆ.—Ovarium 5- , abortu 3-, nunquam 2-loculare.

1. *Aralia*, Linn.

2. *Stilbocarpa*, Dene. et Planch.

3. *Pentapanax*, Seem.

4. *Sciadodendron*, Griseb.

II. PANACEÆ.—Ovarium 2-, per excessum 3-, nunquam 4-∞-loculare.

5. *Panax*, Linn.

6. *Myodocarpus*, A. Brongn. et Gris.

7. *Delarëbrea*, Vieill.

XXVI. ON THE GENUS ARALIA.

XLIV. ARALIA, Linn. Gen. n. 386, excl. sp.; Benth. et Hook. Gen. i. p. 936.—Pedicelli articulati. Flores sæpe polygamo-monoici. Calycis margo prominulus, truncatus, repandus v. brevissime 5-dentatus. Petala 5, ovata, obtusa v. brevissime inflexo-acuminata, marginibus plus minus imbricatis. Stamina 5; antheræ oblongæ v. rarius ovatæ, rectæ. Discus subplanus v. rarius conicus, margine libero. Ovarium 3-5-loculare; styli nunc basi erecti v. breviter connati, superne demum recurvi, nunc a basi recurvi v. summo apice inflexi; stigmata terminalia. Fructus 3-5-angulatus, exocarpio carnosio; pyrænæ 3-5 orbiculatæ, ovatæ v. oblongæ, compressæ, crustacæ v. duræ. Semen compressum, albumine æquabili.—Herbæ perennes v. frutices, glabri pubescentes setosi v. aculeati. Folia alterna, digitata pinnata v. ternato-pinnatim pinnatimve decomposita, foliolis serrulatis. Stipulæ a basi petioli parum prominentes. Umbellulæ solitariæ racemosæ paniculatæ v. terminales, rarius in umbellam compositam dispositæ. Bracteæ parvæ.—*Dimorphanthus*, Miq. Com. Phytogr. 95. t. 12.

This genus is here restricted to the pentecarpous, by abortion tricarpous, species; the truly dicarpous ones, having a distinct habit, are referred by me to *Panax*.

Species Chinenses :—

1. *A. Chinensis*, Linn. Sp. 393; De Cand. Prod. vol. iv. p. 259, excl. syn. Blume; Hance in Seem. Journ. of Bot. 1866, p. 172.—*Leea spinosa*, Spreng.—China (Lord Macartney! in Herb. Mus.).

2. *A. Planchoniana*, Hance in Seem. Journ. of Bot. 1866, p. 172.—Ilha Verde, near Macao, S. China (Hance).

3. *A. Decaisneana*, Hance in Seem. Journ. of Bot. 1866, p. 172.—Island of Formosa.

4. *A. Mandschurica*, Seem.—*Dimorphanthus Manchuricus*, Rupr. et Maximow. Fl. Amer. p. 133.—On the Lower Amur (Maximowicz! in Herb. Hook.).

Species Japonicæ :—

5. *A. elata*, Seem.—*Dimorphanthus elatus*, Miq. Com. Phytogr. 95. t. 12; Walp. Rep. vol. ii. p. 430.—*Aralia grandis*, Miq. Herb. Japan.

6. *A. canescens*, Sieb. et Zucc. Abhand. Math. Phys. Kl. Baier. Akad. vol. ii. p. 222; Walp. Ann. vol. i. p. 982.—Japan (Bürger! Oldham!).

7. *A. edulis*, Sieb. et Zucc. Fl. Jap. i. 57. t. 25.—*Dimorphanthus edulis*, Miq. Com. Phytogr. p. 96; Walp. Rep. ii. p. 431. *Aralia cordata*, Thunb. Fl. Jap. p. 127? *A. racemosa*, var. *Sachalinensis*, Regel, Gartenflora, 1864, t. 432?—Japan.

Species Indicae :

8. *A. Cachemirica*, Dene. in Jacquem. Voy. iv. p. 72. t. 82; Walp. Rep. ii. p. 430.—*A. macrophylla*, Lindl. Bot. Reg. (New Series) xvii., Plant. Misc. p. 73. n. 72. *Panax tripinnatum*, Wall. Cat. n. 4934. *P. decompositum*, Wall. Cat. n. 4935; De Cand. Prod. iv. p. 255.—Nepal (Wallich! Cat. n. 4934 et 4935).

9. *A. foliolosa*, Seem.—*Panax (?) foliolosum*, Wall. Cat. n. 4928.—Sikhim (Hooker f. et Thomson!); Bootan (Griffith! n. 2074 in Mus. Brit.); Silhet (Wallich! n. 2928).

10. *A. Thomsonii*, Seem. (n. sp.).—Khasia mountains (Hook. f. et Thomson! *Araliaceæ*, n. 42); Assam Plains (Jenkins!).

11. *A. armata*, Seem.—*Panax armatum*, Wall. Cat. n. 49, 33; G. Don, Gen. Syst. iii. p. 386; Walp. Rep. ii. p. 429.—Tavoy (Wallich! n. 49, 37); Khasia and Sikhim (Hook. f. et Thomson!).

12. *A. Finlaysonianana*, Seem.—*Panax Finlaysonianum*, Wall. Cat. n. 49, 36; G. Don, Gen. Syst. iii. p. 429; Walp. Rep. ii. p. 492.—India (Wallich! n. 4937.).

13. *A. cissifolia*, Griffith, mss. in Herb. Hook.—*Panax scandens*, Edgw. mss. in Herb. Hook.—Bootan (Griffith!), Kumaon (Strachey and Winterbottom!).

Has the habit of *Eleutherococcus*. Leaves 5-nately digitate.

Species Boreali-Americæ :

14. *A. nudicaulis*, Linn. Sp. p. 393, non Blume; Raf. Med. Bot. i. t. 8; Torr. et Gray, Fl. North Amer. i. p. 646. Nomen vernac. "Wild Sarsaparilla."—Canada to the mountainous portions of the Southern United States (Nuttall! Douglas! Anderson! Kertland! in Herb. Mus. Brit.).

15. *A. racemosa*, Linn. Sp. p. 393; Schk. Hand. t. 86; Torr. et Gray, Fl. North Amer. i. p. 646. Nomen vernac. "Spikenard."—Canada to mountains of Georgia and Rocky Mountains (Nuttall! Kertland!).

16. *A. hispida*, Michx. Fl. Am. Sept. i. p. 185; Vent. Hort. Cels. t. 41; Sims, Bot. Mag. t. 1041; Lodd. Bot. Cat. t. 1306; Torr. et Gray, Fl. North Amer. i. p. 647.—*A. Muhlenbergiana*, Schult. Syst.

vi. p. 704. Nomina vernac. "Wild Elder" et "Bristly Sarsaparilla."—Lakes Winipeg and Superior (Richardson!); Sachakawan (Richardson!); Nova Scotia (Alex. Anderson!); Massachusetts (Nuttall!).

17. *A. humilis*, Cav. Icon. iv. p. 7. t. 313.—Mexico.

18. *A. pubescens*, De Cand. Hort. Monsp. 1813, p. 80; Prod. iv. p. 258.—Mexico.

19. *A. spinosa*, Linn. Sp. p. 392.—*A. spinosa*, var. γ , Torr. et Gray, Fl. North Amer. i. p. 647. Nomina vernac. "Prickly Ash," "Angelica Tree," "Hercules Club."—United States (Nuttall! Pursh! Gouan! Drummond! Short!)

20. *A. Leroana*, C. Koch, Wochenschrift, 1864, p. 369.—*A. spinosa*, var. β , Torr. et Gray, Fl. North Amer. i. p. 647. *A. Japonica*, Hort. Germ. non Auct.—North America.

Professor K. Koch, l. c., thus distinguishes *A. spinosa* and *A. Leroana*.

A. spinosa; spinosissima; petioli glabri; foliola oblongo-lanceolata, cuspidata, glabra, subtus glaucescentia; panicula pedunculata, elongata; rami alterni, denuo ramosi, ramulis plerumque ad apicem solum umbelliferis; flores majores.

A. Leroana; spinosa; petioli puberuli; foliola supra aspera aut denique glabriuscula, acuta aut acuminata, subtus pubescentia glaucescentia; panicula sessilis, contracta, ramis elongatis denuo ramosis, ramulis ubique umbelliferis; flores minores.

Species Javanicæ et Philippinenses:

21. *A. Javanica*, Miq. in Bonplandia, 1859, p. 137.—*Aralia Chinesis*, Blume, Bijdr. p. 870, non Linn.—Java (Horsfield! in Mus. Brit.; Junghuhn! in Herb. Hook.)

22. *A. hypoleuca*, Presl, Epim. p. 250; Walp. Ann. ii. p. 724.—Philippine Islands (Cuming! n. 920 et 792 in Mus. Brit.).

23. *A. montana*, Blume, Bijdr. 870; Miq. Fl. Ned. Ind. l. c. p. 750.—*Aralia bipinnata*, Reinw. Herb.—Java (Horsfield! in Mus. Brit.).

24. *A. dasyphylla*, Miq. in Bonplandia, 1856, p. 138; Fl. Ned. Ind. l. c. p. 751.—Java (Junghuhn!).

25. *A. ferox*, Miq. in Bonplandia, 1856, p. 137; Fl. Ned. Ind. l. c. p. 750.—Java.

Species exclusæ.

A. Abyssinica, Hochst.=*Sciadophyllum Abyssinicum*, Steud.

A. acerifolia, Willd.=*Oreopanax acerifolium*, Seem.

- A. aculeata*, Ham.=*Brassaiopsis aculeata*, Seem.
A. acutifolia, Willd.=(?) *Dendropanax*.
A. angularis, Willd.=*Oreopanax angulare*, Seem.
A. arborea, Linn.=*Dendropanax arboreum*, Dcne. et Planch.
A. arborea, Arrab.=*Gilibertia Brasiliensis*, Seem.
A. argentata, H. B.=*Oreopanax argentatum*, Dcne. et Planch.
A. aromatica, Blume=*Agalma aromaticum*, Seem.
A. avicenniæfolia, H. B.=*Oreopanax avicenniæfolium*, Dcne. et Pl.
A. calyculata, Zoll. et Mor.=*Macropanax oreophilum*, Miq.
A. capitata, Jacq.=*Oreopanax capitatum*, Dcne. et Planch.
A. capitulata, Jungh. et Vries.=(?) *Osmoxylon*.
A. catalpæfolia, Willd.=*Oreopanax catalpæfolium*, Dcne. et Planch.
A. cheiophylla, Spr.=*Oreopanax cheiophyllum*, Dcne. et Planch.
A. Chinensis, Lour.= (Rumph. Amb. iv. 44.)
A. cochleata, Lam.=*Nothopanax cochleatum*, Miq.
A. crassifolia, Sol.=*Pseudopanax crassifolium*, C. Koch.
A. crassinervia, H. B.=*Oreopanax crassinervium*, Dcne. et Planch.
A. Cumanensis, H. B.=*Oreopanax Cumanense*, Dcne. et Planch.
A. digitata, Willd.=*Oreopanax Xalapense*, Dcne. et Planch.
A. digitata, Roxb.=*Heptapleurum venulosum*, Seem.
A. discolor, H. B.=*Oreopanax discolor*, Dcne. et Planch.
A. disperma, Blume=*Macropanax oreophilum*, Miq.
A. dubia, Spr.=*Trevesia palmata*, Vis.
A. Echinops, Cham.=*Oreopanax Echinops*, Dcne. et Planch.
A. erinacea, Hook.=*Horsfieldia horrida*, Seem.
A. farinosa, Delile=*Nothopanax farinosum*, Seem.
A. ferruginea, H. B.=*Sciadophyllum ferrugineum*, Dcne. et Planch.
A. ferruginea, Linden=*Oreopanax Humboldtianum*, Dcne. et Planch.
A. floribunda, H. B.=*Oreopanax floribundum*, Dcne. et Planch.
A. fragrans, Don (Steud.!)=*Heteropanax fragrans*, Seem. et
Pentapanax Leschenaultii, Seem.
A. heptaphylla, Willd.=*Sciadophyllum ferrugineum*, Dcne. et Planch.
A. heterophylla, Mutis=*Oreopanax Mutisianum*, Dcne. et Planch.
A. heterophylla, Willd.=*Oreopanax acerifolium*, Seem.
A. Humboldtiana, Rœm. et Schult.=*Oreopanax floribundum*, Dcne.
 et Planch.
A. Japonica, Thunb.=*Fatsia Japonica*, Dcne. et Planch.
A. jatrophæfolia, H. B.=*Oreopanax jatrophæfolium*, Dcne. et Planch.

- A. incisa*, Willd.=*Oreopanax floribundum*, Dcne. et Planch.
A. Kleinii, Steud.=*Miqelia Kleinii*, Meisn.
A. latevirens, Gay=*Cheirodendron latevirens*, Seem.
A. lappæfolia, Ræusch=?—*Planta Indica* Or.
A. Lessoni, Hook.=*Pseudopanax Lessoni*, C. Koch.
A. longifolia, Reinw.=*Brassaia littorea*, Seem.
A. lucescens, Blume=*Agalma lucescens*, Seem.
A. macrophylla, A. Cunn.=*Meryta latifolia*, Seem.
A. Maralia, R. et Sch.=*Maralia Madagascariensis*, De Cand.
A. micans, Willd.=*Didymopanax splendens*, Dcne. et Planch.
A. Mitsde, Sieb. et Zucc.=*Dendropanax Japonicum*, Seem.
A. monogyna, Arrab.=*Dendropanax monogynum*, Seem.
A. Moorei, F. Muell.=*Heptapleurum venulosum*, Seem.
A. multiflora, Pohl=*Oreopanax capitatum*, Dcne. et Planch.
A. Mutisiana, H. B.=*Oreopanax Mutisianum*, Dcne. et Planch.
A. nodosa, Blume.=*Polyscias nodosa*, Seem.
A. obtusiloba, H. B.=*Oreopanax obtusilobum*, Dcne. et Planch.
A. octophylla, Lour.=*Agalma octophyllum*, Seem.
A. palmata, Lam.=*Trevesia Moluccana*, Miq.
A. palmata, Reinw.=*Trevesia Sundaica*, Miq.
A. palmata, Willd.=*Oreopanax cheirophyllum*, Seem.
A. palmata, Lour.=*Brassaiopsis Hainla*, Seem.
A. paniculata, Philip.=*Cheirodendron Valdiviense*, Seem.
A. papyrifera, Hook.=*Tetrapanax papyriferum*, C. Koch.
A. pentaphylla, Thunb.=*Acanthopanax spinosum*, Miq.
A. pinnatifida, Jungh. et Vries.=*Aralidium pinnatifidum*, Miq.
A. pergamacea, Blume=*Heptapleurum pergamaceum*, Hassk.
A. pinnata, Hochst.=*Nothopanax farinosum*, Seem.
A. platanifolia, H. B.=*Oreopanax platanifolium*, Dcne. et Planch.
A. polaris, Hombr.=*Stilbocarpa polaris*, Dcne. et Planch.
A. Polyscias, Spr.=*Polyscias umbellata*, Forst.
A. polygama, Bks. et Sol.=*Schefflera digitata*, Forst.
A. Quinduensis, H. B.=*Sciadophyllum Quinduense*, DC.
A. quinquefolia, A. Gray=*Panax quinquefolium*, Linn.
A. ramiflora, Pohl=*Dendropanax ramiflorum*, Seem.
A. Reinwardtiana, Steud.=*Trevesia Sundaica*, Miq.
A. reticulata, H. B.=*Oreopanax Humboldtianum*, Dcne. et Planch.
A. rigida, Blume=*Heptapleurum rigidum*, Seem.

- A. rugosa*, Blume = *Agalma rugosum*, Miq.
A. salicifolia, Vent. = ?
A. scandens, Poir. = *Brassaiopsis Hainla*, Seem.
A. Schefflera, Spr. = *Schefflera digitata*, Forst.
A. Sciadophyllum, Sw. = *Sciadophyllum Brownei*, DC.
A. Sieboldii, Hort. = (?) *Fatsia Japonica*, Dcne. et Planch.
A. septemnervia, H. B. = *Oreopanax septemnervium*, Dcne. et Planch.
A. simillima, Blume = *Agalma simillimum*, Miq.
A. tarchonanthifolia, Willd. = *Oreopanax avicenniæfolium*, Dcne. et Planch.
A. trifolia, Bks. = *Pseudopanax crassifolium*, C. Koch.
A. trifolia, A Gray = *Panax trifolium*, Linn.
A. trifoliata, Meyen = *Acanthopanax aculeatum*, Seem.
A. trigyna, Gaud. = *Cheirodendron Gaudichaudii*, Seem.
A. triphylla, Poir. = *Panax trifolium*, Linn.
A. Turbacensis, H. B. = *Oreopanax Turbacense*, Dcne. et Planch.
A. umbellata, Pohl = *Dendropanax cuneatum*, Dcne. et Planch.
A. umbellata, Pav. = *Giliberta umbellata*, Ruiz et Pav.
A. umbellifera, Lam. = *Osmoxylon Amboinense*, Miq.
A. umbraculifera, Roxb. = *Polyscias nodosa*, Seem.
A. Valdiviense, Gay = *Cheirodendron Valdiviense*, Seem.
A. Vitiensis, A. Gray = *Schefflera Vitiensis*, Seem.
A. Xalapensis, H. B. = *Oreopanax Xalapense*, Dcne. et Planch.

XXVII. ON THE GENUS STILBOCARPA.

XLV. STILBOCARPA, Dcne. et Planch. Rev. Hort. 1854, p. 105.—
 Pedicelli articulati. Flores ecalyculati, polygami. Calycis tubus ob-
 ovatus; limbus truncatus. Petala 5, obovato-oblonga, obtusa, æstiva-
 tione imbricata. Stamina 5; antheræ oblongæ. Styli 3-4, divergentes,
 recurvi, omnino liberi. Stigmata punctiformia. Ovarium 3-4-loculare.
 Drupa depresso-sphærica, suberosa, 3-4-pyrena. Albumen æquabile.
 —Herba perennis, regionibus subantarcticis et Nova Zelandia inhabi-
 tans, inermis, tota setis mollibus laxis obsita, fœtida; foliis (maximis)
 stipulatis longe petiolatis orbiculari-reniformibus basi profunde cor-
 datis marginibus multilobatis; umbellulis compositis; involucri folia-
 ceis; floribus densis; drupis atris nitidis, grana piperis magnitudine.
 —Hook. f. Fl. N. Zeal. i. p. 95. *Araliæ* sp., Homb. et Jacq. Species
 unica:

1. *S. polaris*, Dene. et Planch. l. c. ; Hook. f. Fl. N. Zeal. i. p. 95 ; A. Gray, Bot. Wilkes, p. 716.—*Aralia polaris*, Homb. et Jacq. Voyage au Pôle Sud, t. 2, sine descript. ; Hook. f. Fl. Ant. p. 19 ; Handbook Fl. N. Zeal. i. p. 100. Hook. Icon. Plant. t. 744.—GEOGR. DISTR. Southern Island of New Zealand (Lyll !) ; Lord Auckland's Islands (J. D. Hooker ! Dr. Holmes !) ; Campbell's Islands (J. D. Hooker !), covering large tracts.

This genus, on account of the quincuncial æstivation of its corolla, belongs to *Araliaceæ*.

XXVIII. ON THE GENUS SCIADODENDRON.

(PLATE VII.)

I first met with this tree in 1846, at Panama, where it is known by the name of Jobo de lagarto, and commonly used for making fences,—poles stuck in the ground taking root readily, and growing very fast. On the 22nd of March, 1847, I sent a collection of Panama woods to the Kew Museum, and n. 33 of that collection were specimens of this tree. But though I looked carefully and frequently for flowers, I could never find any. Mr. Sutton Hayes also records amongst his notes that he had known the tree for years, without being so fortunate as to find any flowers on it. My friend Dr. Duchassaing was the first who gathered some imperfect flowering specimens, which passed into the hands of Professor Grisebach, who referred them, in my 'Bonplandia,' to a new genus of *Araliaceæ* (*Sciadodendron*). The late Mr. Sutton Hayes obtained better specimens of the flowers, which he sent to England, and which I found without a name both at the British Museum and at Kew. There being no leaves of the plant in these herbaria, I did not fail, when, in May, 1866, at Panama, to collect specimens of them, so that I am now able to publish a plate of this common, but so little known tree, that Bentham and Hooker, in their 'Genera Plantarum,' were obliged to refer it amongst the doubtful genera.

Sciadodendron belongs to the little group of *Araliaceæ* proper (distinguished from the *Hederaceæ* by the imbricate æstivation of the petals), and it differs from *Aralia*, *Stilbocarpa*, and allied genera by its 10-12-merous flowers.

XLVI. SCIADODENDRON, Griseb. in Seem. Bonplandia, 1857, p. 7. Char. gen. emend. : Calyx limbo undulato v. subintegro. Petala 10-12, ovato-linearia, æstivatione imbricata. Stamina 10-12, antheris incum-

bentibus. Ovarium inferum, subglobosum, 10- v. per excessum 12-loculare, stylis totidem inferne cohærentibus, superne divergentibus et radiatim expansis abbreviatis. Ovula in loculo solitaria, pendula. Drupa . . .—Arbor excelsa, inermis, glabra, foliis longe petiolatis supradecompositis, foliolis breviter petiolulatis ovatis acuminatis mucronato-serrulatis; umbellis 15-40-floris compositis, pedicellis pedunculisque bractea scariosa subrotunda basi suffultis. Species unica:—

1. *S. excelsum*, Griseb. l. c. p. 7. (Tab. Nostr. n. 7.) Nomen vernaculum Panamense "Jobo de lagarto," Nicaraguense "Palo de lagarto."—Geogr. distribution, Isthmus of Panama (Sutton Hayes! Duchassaing! Seemann!), Nicaragua, between Leon and Ocotol (Seemann!), and Peru (Gay! n. 486).

Sciadodendron excelsum, the type of the genus, does not seem to be truly indigenous to the Isthmus of Panama; at all events in that country I have never seen it anywhere but near human habitations. The same remark applies to Carthagenæ. But I have found it truly wild in the forests of New Segovia, Nicaragua, where it is one of the most common trees, and attains a height of sixty feet. In the Paris herbarium I have seen specimens of it from Peru, where they had been collected by Gay (n. 486).

This tree is 60 feet high, with a corky, greyish bark. The branches are few, straight, and terminated by the foliage. The leaves are without stipules, from 3-5 feet long, compoundly pinnate, and impart to the tree a Palm-like habit, not unlike that of *Caryota*. The petiole is jointed at the base of the ramifications of the leaf, and the joints swollen. On the whole, the leaves resemble those of *Heteropanax fragrans*, Seem. The tree flowers without leaves and very seldom, I having seen it but once in flower. The flowers grow from the old wood, and are greenish.

In the Isthmus of Panama the tree is known by the name of Jobo de lagarto (Alligator Jobo), from a certain resemblance of the bark of the tree to the skin of an alligator. In Nicaragua it is vernacularly termed "Palo de lagarto" (Alligator's tree), the name of "Jobo" being unknown there. In the isthmus the natives apply the leaves (macerated) with beneficial effect to ulcers. The ashes of the wood are used in Nicaragua in the manufacture of soap.

EXPLANATION OF PLATE VII., representing *Sciadodendron excelsum*, Griseb. The flowers from specimens collected by Sutton Hayes, at Panama, and

kindly lent by Dr. Hooker; the leaves from specimens collected by me in the same place.—Fig. 1. Flower. 2. Petals. 3. Flower with petals removed. 4. The same, with stamens removed. 5 and 6. Stamens. 7. Pistil. 8. Cross-section of ovary :—*all magnified*.

XXIX. ON THE GENUS PANAX.

Panax has been made one of the great lumber-rooms of our science, and none of the modern botanists have assigned to it intelligible limits. Linnæus referred *three* species to it, including two generic types, and his generic name ought to go with the majority of species represented by *P. quinquefolium* and *P. trifolium*. Both these species have a dimerous ovary and five petals, quincuncial in æstivation, the latter character assigning them a place amongst the *Araliaceæ* proper; whilst Linnæus's third species (*P. fruticosum*) has petals valvate in æstivation, and therefore stands as the type of the genus *Nothopanax* in my Revision of *Hederaceæ*. If the species referred to *Panax* by authors are examined, it will be found that but few agree generically with *P. quinquefolium* and *P. trifolium*; but that all those that do agree have the same habit and partake of similar medicinal properties, being perennial herbs, with tuberous roots, and with verticillate, digitate leaves, terminal solitary simple umbels, and coloured berries; moreover, they are distributed geographically over North America and Eastern and Central Asia. I therefore restrict the genus *Panax* to these species only. It will be seen that these views are at variance with those advanced by Decaisne and Planchon (*Revue Hortic.* 1854, p. 105), who shift *P. quinquefolium* and *P. trifolium* to *Aralia*, retain the name *Panax* for *P. fruticosum*, and unite with it *Polyscias*, Forst.; *Cheirodendron*, Nutt.; *Pseudopanax*, C. Koch; and *Maralia*, Pet. Thouars. Bentham and Hooker f. (*Genera Plant.* p. 938) entertain similar views with regard to shifting *P. quinquefolium* and *P. trifolium* to *Aralia*, the retention of the name *Panax* for *P. fruticosum* and its congeners, and the union of *Cheirodendron* and *Maralia* with their *Panax*; but they exclude, as I had previously done, *Polyscias* and *Pseudopanax*. Yet, even with these two latter genera removed, Bentham and Hooker's *Panax* remains ill-defined. Having excluded *Pseudopanax*, the learned authors ought to have removed *Cheirodendron* along with it, as that genus is so closely allied to it as almost to justify those desirous of forming large genera to unite the two. *Oligoscias* (*Maralia*), which the two authors also incorporated with

Panax, has nothing to do with that genus as defined by them, having ruminant albumen, which would entitle it a place among their tribe *Hedereæ*.

XLVII. PANAX, Linn. Gen. n. 1166, ex parte.—Char. gen. emend. : Pedicelli articulati. Flores calyculati, polygamo-monoici. Calycis margo obscure 5-dentatus. Petala 5, ovata, acuta, æstivatione quincunciali. Stamina 5, filamenta brevissima; antheræ ovatæ v. oblongæ. Ovarium 2- v. per excessum 3-loculare, loculis 1-ovulatis. Drupa baccata, didymo-compressa (colorata), 2- v. per excessum 3-loculare, loculis 1-spermis. Semina pendula. Albumen æquabile.—Herbæ perennes, Amer. bor., Japon., Chin. et Ind. or. indigenæ, radice crassa, tuberosa; caule solitario, foliolorum verticillum unicum proferente; foliis palmatim 3-5-foliolatis; umbellis terminalibus simplicibus.—*Aureliana*, Lafit. Mém. du Ginseng. *Araliæ* sp. auct. *Eupanax* (subgenus), Torrey et Gray, Fl. N. Am. i. p. 647.

1. *P. trifolium*, Linn. Spec. ii. p. 1058; Torr. et Gray, Fl. N. Amer. i. p. 648.—*P. pusilla*, Sims, Bot. Mag. t. 1334. *Aralia trifolia*, A. Gray, Bot. N. U. States, ed. v. p. 199. Nom. vernac. Bor.-Amer. "Dwarf Ginseng," v. "Ground Nut."—North America, from Canada to the mountains of the Southern United States (Kalm! Bartram! ann. 1764, Nuttall! Kertland!).—Leaves sometimes 5-foliolate.

2. *P. quinquefolium*, Linn. Spec. ii. p. 1058; Torr. et Gray, Fl. N. Amer. i. p. 648; C. A. Meyer in Bull. de la Class. phys. math. Ac. St. Petersb. i. 340; Walp. Rep. v. p. 925.—*Aureliana Canadensis*, Lafit. Mém. du Ginseng, cum icone; Catesb. Hist. Carol. iii. p. 16. t. 16. *Araliastrum foliis ternis quinquepartitis*, Ginseng et Nizier officin., Trew, Plant. Select. i. t. 6; Lam. Encycl. Méth. ii. 723. t. 860, fig. 1; Bot. Mag. t. 1333. *Aralia quinquefolia*, A. Gray, Bot. N. U. States, edit. v. p. 199. Nom. vern. Bor.-Amer. "Ginseng."—Woods of North America, from Canada to the Southern United States (Kalm! Bartram! Kertland!).

3. *P. Ginseng*, C. A. Mey. l. c.; Walp. Rep. v. p. 924.—*P. quinquefolium* var. *Ginseng*, Regel, 'Gartenflora,' 1862, sp. 314. t. 375? *P. quinquefolium*, β . *P. Coreense*, Siebold, Verh. Bat. Genoot. xii. *P. Schinseng*, var. *Coreense*, Nees, Suppl. Plant. Med. i. t. 16. fig. A.—Mantchuria and Corea.

4. *P. Pseudo-Ginseng*, Wall. Plant. Asiat. Rar. ii. p. 30. t. 137; C. A. Meyer, l. c.; Walp. Rep. v. p. 924; Pharm. Centralblatt, 1832,

p. 353. t. 3. *P. Schinseng*, var. *Nepalensis*, Nees, l. c. fig. C.—Mountains of India (Wallich! n. 3730, Hook. f. et Thomson! Griffith!)

5. *P. Japonicum*, C. A. Mey. l. c.; Walp. Rep. v. p. 924.—*P. quinquefolium*, var. *Japonicum*, Sieb. *P. Schin-seng*, var. *Japonicum*, N. ab Esenb. l. c. fig. β.—Japan.

6. *P. bipinnatifidum*, Seem. (sp. nov.); perenne, herbaceum; foliis verticillatim 3–5-nis, digitatim 5-foliolatis, foliolis bipinnatifidis, supra ad nervos pilis hispidis sparsis, demum glabratis; pedicellis apice articulatis, calyculo obscuro; stylis 2–3.—Sanding, East Indies (Herb. Hook.).—“Berries like crabs’-eyes, exactly, with a broad black pallet at top.” Allied to *P. Pseudo-Ginseng*.

Species exclusæ:—

P. aculeatum, Ait. = *Acanthopanax aculeatum*, Seem.

P. Anisum, De Cand. = *Nothopanax Anisum*, Miq.

P. anomalum, Hook. = *Nothopanax anomalum*, Seem.

P. arboreum, Forst. = *Nothopanax arboreum*, Seem.

P. armatum, Wall. = *Aralia armata*, Seem.

P. Australasia, Pers. = *Nothopanax arboreum*, Seem.

P. australis, Schult. = *Hermas australis*, Spr.

P. attenuatum, Swartz = *Didymopanax glabratum*, Dcne. et Planch.

P. bijugum, Wall. = *Pentapanax Leschenaultii*, Seem.

P. Boivini, Dcne. = *Sciadopanax Boivini*, Seem.

P. calvum, Cham. = *Didymopanax calvum*, Dcne. et Planch.

P. Caribbæum, Sieb. = *Didymopanax glabratum*, Dcne. et Planch.

P. cephalobotrys, F. Muell. = *Nothopanax cephalobotrys*, Seem.

P. chrysophyllum, Vahl = *Didymopanax chrysophyllum*, Dcne. et Pl.

P. chrysophyllum, Pœpp. = *Didymopanax Pœppigii*, Dcne. et Planch.

P. cochleatum, De Cand. = *Nothopanax cochleatum*, Miq.

P. Colensoi, Hook. f. = *Nothopanax Colensoi*, Seem.

P. conchifolium, Roxb. = *Nothopanax cochleatum*, Miq.

P. coriaceum, Regel = *Pseudopanax crassifolium*, C. Koch.

P. crassifolium, Dcne. et Planch. = *Pseudopanax crassifolium*, C. Koch.

P. crenatum, Dietr. =

P. curcifolium, Griffith = *Brassaiopsis Hainla*, Seem.

P. decaphyllum, Sagot = *Sciadophyllum decaphyllum*, Seem.

P. decompositum, Wall. = *Aralia Cachemirica*, Dcne.

P. dendroides, F. Muell. = *Nothopanax sambucifolium*, C. Koch.

- P. digitatum*, Sweet=
P. divaricatum, Sieb. et Zucc.=*Acanthopanax divaricatum*, Seem.
P. Edgerleyi, Hook. f.=*Raukaua Edgerleyi*, Seem.
P. elegans, Fras.=*Nothopanax elegans*, Seem.
P. Finlaysonianum, Wall.=*Aralia Finlaysoniana*, Seem.
P. foliolosum, Wall.=*Aralia foliolosa*, Seem.
P. Forsteri, Dcne. et Planch.=*Polyscias pinnata*, Forst.
P. fragrans, Roxb.=*Heteropanax fragrans*, Seem.
P. fruticosum, Linn.=*Nothopanax fruticosum*, Miq.
P. Gaudichaudii, De Cand.=*Cheirodendron Gaudichaudii*, Seem.
P. glabratum, H. B. K.=*Didymopanax glabratum*, Dcne. et Planch.
P. Gunnii, Hook. f.=*Nothopanax Gunnii*, Seem.
P. (?) Hainla, De Cand.=*Brassaiopsis Hainla*, Seem.
P. Heyneanum, Wall.=*Polyscias pinnata*, Forst.
P. Heyneanum, Wall. Cat.=*Arthrophyllum*.
P. horridum, Smith=*Horsfieldia horrida*, Seem.
P. innovans, Sieb. et Zucc.=*Acanthopanax innovans*, Seem.
P. Jackianum, Wall.=*Arthrophyllum*.
P. Leschenaultii, De Cand.=*Pentapanax Leschenaultii*, Seem.
P. Lessonii, De Cand.=*Pseudopanax Lessonii*, C. Koch.
P. lineare, Hook. f.=*Pseudopanax lineare*, Seem.
P. longipetiolatum, Pohl=*Didymopanax*.
P. longissimum, Hook. f.=*Pseudopanax crassifolium*, C. Koch.
P. Loureirianum, De Cand.=*Acanthopanax aculeatum*, Seem.
P. Macgillivrayi, Benth.=*Nothopanax Macgillivrayi*, Seem.
P. macrocarpum, Cham. et Schlecht.=*Didymopanax macrocarpum*,
 Seem.
P. Maralia, Dcne. et Planch.=*Maralia Madagascariensis*, De Cand.
P. margaritifera, Vis.=*Nothopanax sambucifolium*, C. Koch.
P. micranthum, Wall.=*Vitis* v. *Verbenacea*.
P. molle, Benth.=*Nothopanax molle*, Seem.
P. Morototoni, Aubl.=*Didymopanax Morototoni*, Dcne. et Planch.
P. multijugum, Benth. et Hook. f.=*Nothopanax multijugum*, Seem.
P. Murrayi, F. Muell.=*Nothopanax Murrayi*, Seem.
P. nodosum, Wall.=*Aralia*.
P. obtusum, Blume=*Nothopanax obtusum*, Miq.
P. ovatum, Hook. et Arn.=*Cheirodendron Gaudichaudii*, Seem., var.
ovatum.

- P. palmatum*, Roxb.=*Brassaiopsis Hainla*, Seem.
P. parviflorum, Mart. et Zucc.=*Didymopanax parviflorum*, Dcne. et Planch.
P. pentadactylon, Dcne. et Pl.=*Pseudopanax crassifolium*, C. Koch.
P. pinnatum, Lam.=*Arthrophyllum*.
P. pinnatum, Miq.=
P. pinnatum, A. Rich.=*Nothopanax farinosum*, Seem.
P. platyphyllum, Hook. et Arn.=*Cheirodendron platyphyllum*, Seem.
P. polybotrys, F. Muell.=*Nothopanax elegans*, Seem.
P. polycarpum, Wall.=*Arthrophyllum*.
P. ricinifolium, Sieb. et Zucc.=*Acanthopanax ricinifolium*, Seem.
P. sambucifolium, Sieb.=*Nothopanax sambucifolium*, C. Koch.
P. Samoense, A. Gray=*Nothopanax Samoense*, Seem.
P. scutellarioides, Reinw.=*Nothopanax cochleatum*, Miq.
P. secundum, Schult.=
P. sericeum, Pohl=*Didymopanax sericeum*, Dcne. et Pl.
P. serratum, Wall.=*Macropanax oreophilum*, Miq.
P. sessiliflorum, Rupr.=*Acanthopanax sessiliflorum*, Seem.
P. simplex, Forst.=*Nothopanax simplex*, Seem.
P. simplicifolium, Dietr.=? *Nothopanax simplex*, Seem.
P. Sinclairi, Hook. f.=*Nothopanax Sinclairi*, Seem.
P. speciosum, Willd.=*Didymopanax speciosum*, Dcne. et Pl.
P. spinosum, Linn. f.=*Acanthopanax spinosum*, Miq.
P. spinosum, Poir.=*Didymopanax speciosum*, Dcne. et Planch.
P. splendens, H. B. K.=*Didymopanax splendens*, Dcne. et Pl.
P. tomentosum, Wall.=*Agalma tomentosum*, Seem.
P. tripinnatum, Wall.=*Aralia Cachemirica*, Dcne.
P. tridactylon, Dcne. et Pl.=*Pseudopanax crassifolium*, C. Koch.
P. undulatum, H. B. K.=*Didymopanax speciosum*, Dcne. et Planch.
P. undulatum, Pers.=*Didymopanax Morototoni*, Dcne. et Pl.
P. vinosum, Ch. et Schlecht.=*Didymopanax sericeum*, Dcne. et Pl.
P. Zippelianum, Miq.=*Nothopanax Zippelianum*, Seem.
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ADDITIONS AND CORRECTIONS TO THE REVISION
OF HEDERACEÆ.

GASTONIA, Comm., add:—

Species exclusæ:—

G. (?) Oahuensis, A. Gray = *Triplasandra Oahuensis*, Seem. (gen. n.).

GROTEFENDIA, Seem. = *Botryopanax*, Miq. in Ann. Mus. Lugd. Bat. i. p. 5.

G. paniculata, Seem., add: *Gastonia sausuroides*, (?) Rœper in Bot. Zeit. 1848, p. 257. t. 1. *Botryopanax Borbonicum*, Miq. l. c.

BAKERIA, Seem. Stamens 15–23, in several rows, according to Bentham and Hooker.

BRASSAIOPSIS, Dcne. et Planch., add: Albumen ruminatè, not even.

B. Hainla, Seem., add: *Panax (?) Hainla*, De Cand. Prod. iv. p. 253.

Species exclusæ:—

B. ricinifolia, Seem. = *Acanthopanax ricinifolium*, Seem.

PENTAPANAX, Seem. Petals imbricate, hence the genus must be removed to *Araliaceæ*.

AGALMA, Miq., add:—

15. *A. Kavaïense*, Seem. (*Heptapleurum Kavaïense*, Mann in Proceed. Am. Acad. vii. p. 168.)—Kauai, Hawaiian Islands (Mann!).

DENDROPANAX, Dcne. et Planch., add:—

15. *D. monogynum*, Seem. (*Aralia monogyna*, Arrab. Fl. Flum. ii. p. 17. t. 75). Umbels solitary, on long, erect peduncles. Allied to *D. nutans* and *Darienense*.—Brazil.

16. *D. cuneifolium*, Seem. (*Hedera cuneifolia*, Wright, Plant. Cub.).—Cuba (Wright! n. 2631).

17. *D. samydifolium*, Seem. (*Sciadophyllum samydifolium*, Wright, Plant. Cub.).—Cuba (Wright! n. 2632).

Species exclusæ:—

D. tomentosum, Seem. = *Didymopanax lucumæfolium*, Dcne. et Planch.

HEDERA, Linn., add :—

Species exclusæ :—

H. cuneifolia, Wright = *Dendropanax cuneifolium*, Seem.

H. quinquefolia, Arrab. = *Vitis Arrabideæ*, Seem. (*Cissus quinquefolia*, Soland.).

H. unifolia, Arrab. = *Vitis unifolia*, Seem.

OSMOXYLON, Miq., add :—

2. *O. Cumingii*, Seem. (sp. n.).—Philippine Islands (Cuming! n. 754).

3. *O. Borneense*, Seem. (sp. n.).—Foliis digitato-11-foliolatis, foliolis lanceolato-linearibus serratis, stipulis fimbriato-laceris.—N. E. of Borneo (Thom. Lobb! in Herb. Kew.).

ARALIA CAPITULATA, Jungh. et de Vris, may be a fourth species of this genus.

HEPTAPLEURUM, Gærtn., add :—

H. venulosum, Seem.—Omit *Panax serratum*, Wall., as synonym.

Species exclusæ :—

H. dipyrenum, H. Mann = *Dipanax Manni*, Seem. (gen. n.).

H. Kavaïense, H. Mann = *Agalma Kavaïense*, Seem.

GILIBERTIA, Ruiz et Pav., add :—

G. Brasiliensis, Seem. = (?) *Aralia arborea*, Arrab. Fl. Flum. iii. t. 100.

SCIADOPHYLLUM, P. Browne, add :—

Species exclusæ :—

S. racemiferum, Miq. = *Cheirodendron*.

S. samydifolium, Wright = *Dendropanax samydifolium*, Seem.

PSEUDOPANAX, C. Koch, add :—

To generic character: Foliis exstipulatis v. stipulatis.

P. crassifolium, C. Koch, add: *Panax crassifolium*, Dcne. et Planch. in Rev. Hort. 1854, p. 105.

3. *P. lineare*, Seem. (*Panax lineare*, Hook. f. Fl. N. Zeal. i. p. 93; ejusd. Handbook N. Z. Fl. p. 101).—Middle Island of New Zealand (Lyll!).

OLIGOSCIAS, Seem. = *Maralia*, Petit Thouars.

O. Madagascariensis, Seem. = *Maralia Madagascariensis*, De Cand.

POLYSCIAS, Forst., add to generic character: Styli 5-12.

OREOPANAX, Dcne. et Planch., add:—

O. Humboldtianum, Dcne. et Planch., add: *O. (?) reticulatum*, Dcne. et Planch.—Nomen vernac. "Papayon."—Silla de Caracas (Bonpland! in Herb. Mus. Par.).

O. Turbacense, Dcne. et Planch.—There are only three leaves of this in the Paris Herbarium, two of which are 3-lobed, the lobes ovate acuminate. *O. discolor* has similar foliage, but that of *O. Turbacense* is quite glabrous, and looks almost a form of *O. capitatum*.

NOTHOPANAX, Miq., add:—

N. sambucifolium, C. Koch, add: *Panax dendroides*, F. Muell. in Hook. Journ. 1856, p. 72.

N. simplex, Seem. = (?) *Panax simplicifolium*, Dietr. Gart. Lexicon.

N. arborum, Seem., add: *Panax Australasia*, Pers. Ench. i. p. 298.

CUSSONIA, Thunb., add:—

C. (?) Bojeri, Seem.—Ovarium 1-loculare; hence probably the type of a new genus.

Raukana, Seem., read always *Raukava*.

Total number of genera and species at present known:—

Hederaceæ, 43 genera, 300 species.

Araliaceæ, 7 genera, 44 species.

SYSTEMATIC ARRANGEMENT OF THE HEDERACEÆ.

Tribus I. CUSSONIÆ.—Stamina petalorum numero æqualia. Ovarium 2-(per excessum 3-)merum. Albumen ruminatum.

* *Pedicelli articulati.*

Sciadopanax, Seem.

Macropanax, Miq.

** *Pedicelli inarticulati.*

Brassaiopsis, Dcne. et Planch.

Cussonia, Thunb.

Sphærodendron, Seem.

Heteropanax, Seem.

Tribus II. HORSFIELDIÆ.—Stamina petalorum numero æqualia. Ovarium 2-(per excessum 3-)merum. Albumen æquabile.

* *Pedicelli articulati.*

Nothopanax, Miq., Seem.

Astrotricha, De Cand.

** *Pedicelli inarticulati.*

Acanthopanax, Seem.

Didymopanax, Dcne. et Planch.

Tetrapanax, C. Koch.

Hydrocotyle, Linn. (ex parte).

Horsfieldia, Blume (*Echinopanax*, Dcne. et Planch.).

Crithmum, Linn.

? *Dipanax*, Seem.

Tribus III. HEDEREÆ.—Stamina petalorum numero æqualia. Ovarium 5-(abortu 3-)∞-merum. Albumen ruminatum.

* *Pedicelli articulati.*

Kissodendron, Seem. (*Irvingia*, F. Muell.).

Maralia, P. Thouars (*Oligoscias*, Seem.).

** *Pedicelli inarticulati.*

Oreopanax, Dcne. et Planch.

Hedera, Linn.

Tribus IV. PSEUDOPANACEÆ.—Stamina petalorum numero æqualia. Ovarium 5-∞-(abortu 3-)merum. Albumen æquabile.

* *Pedicelli articulati.*

- Polyscias*, Forst. (*Eupteron*, Miq.).
Grotenfendia, Seem. (*Botryopanax*, Miq.).
Pseudopanax, C. Koch.
Cheirodendron, Nutt., Seem.
Eleutherococcus, Maxim.

** *Pedicelli inarticulati.*

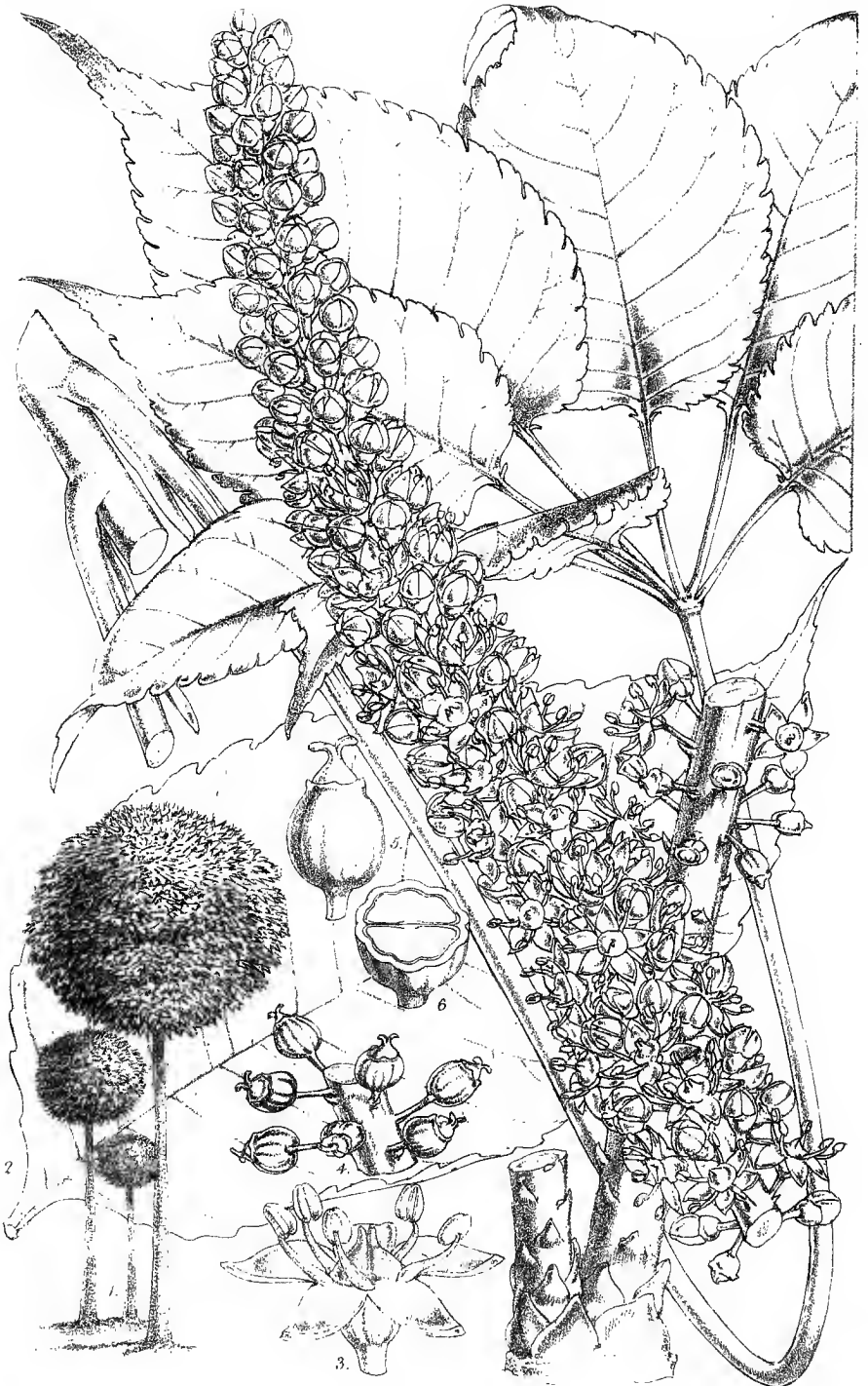
- Osmoxylon*, Miq.
Heptapleurum, Gærtn. (*Paratropia*, De Cand.).
Brassaia, Endl.
Raukava, Seem.
Trevesia, Vis.
Reynoldsia, A. Gray.
Gastonia, Comm.
Agalma, Miq.
Schefflera, Forst.
Sciadophyllum, P. Browne (*Actinophyllum*, R. et Pav.).
Gilibertia, R. et Pav.
Dendropanax, Dcne. et Planch.
Fatsia, Dcne. et Planch.

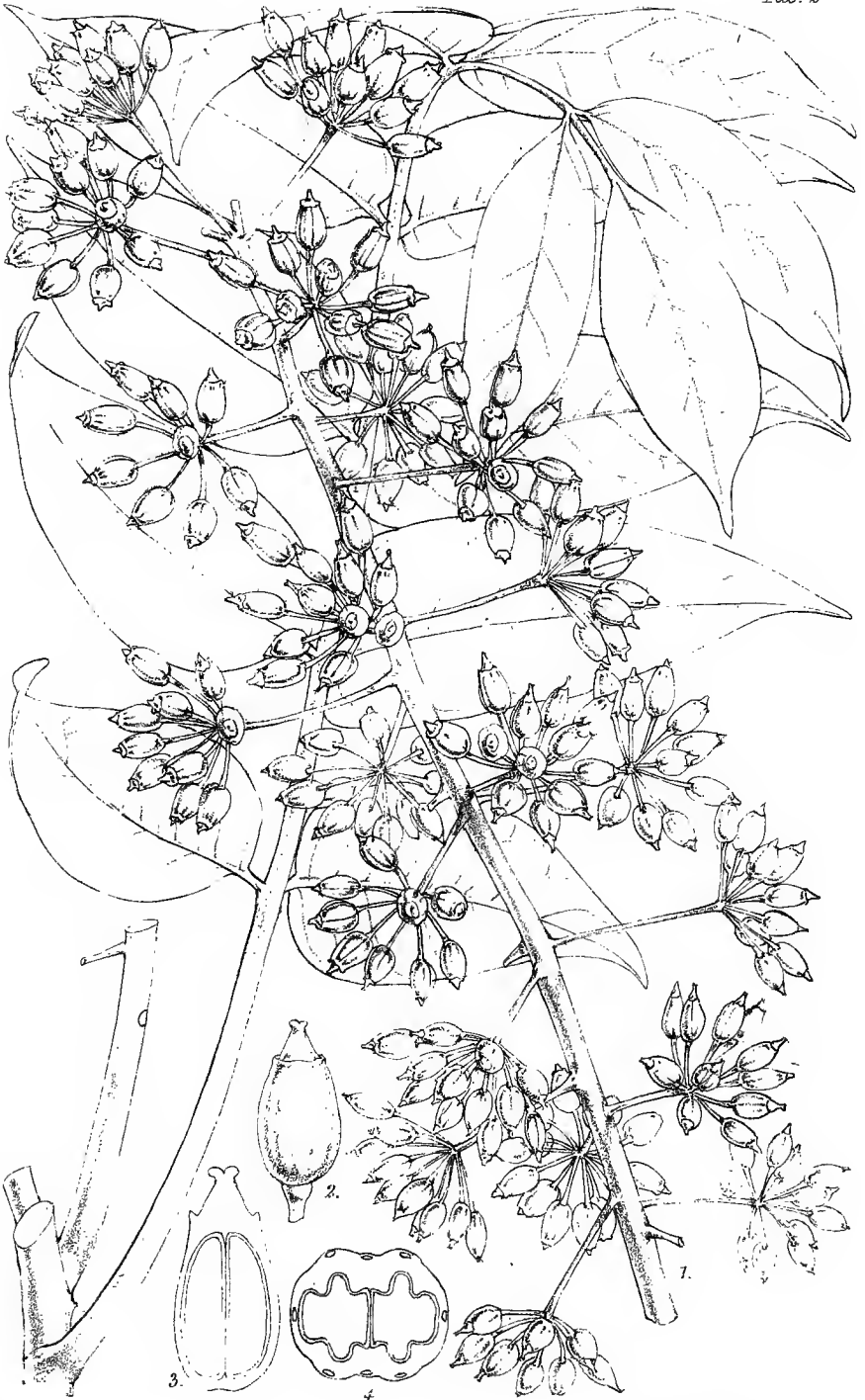
Tribus V. PLERANDREÆ.—Stamina 2-∞-plo petalorum numero. Ovarium 5-∞-merum.

- Tupidanthus*, Hook. f. et Thoms.
Tetraplasandra, A. Gray.
Plerandra, A. Gray.
Bakeria, Seem.
Nesopanax, Seem.
Triplasandra, Seem.
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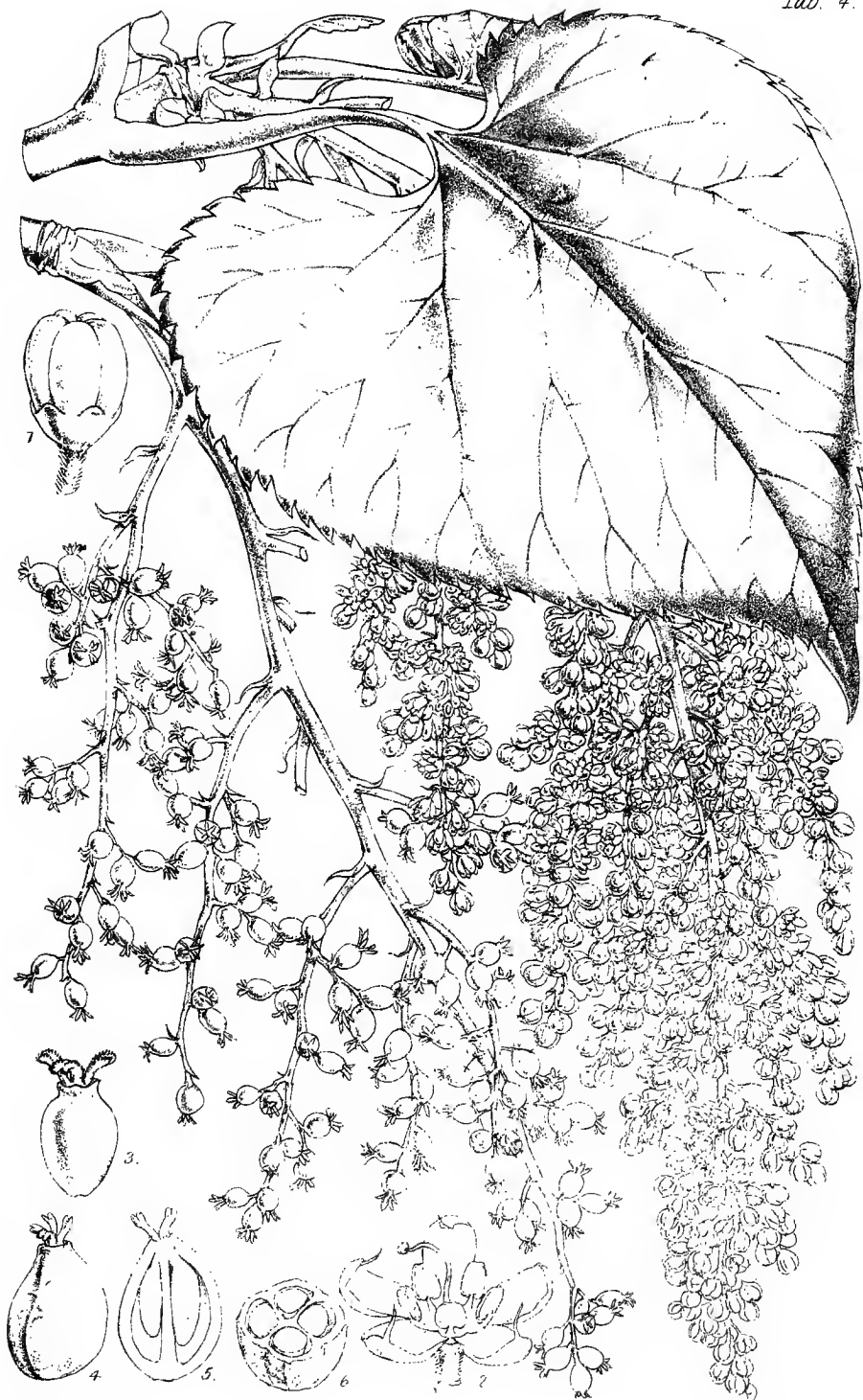
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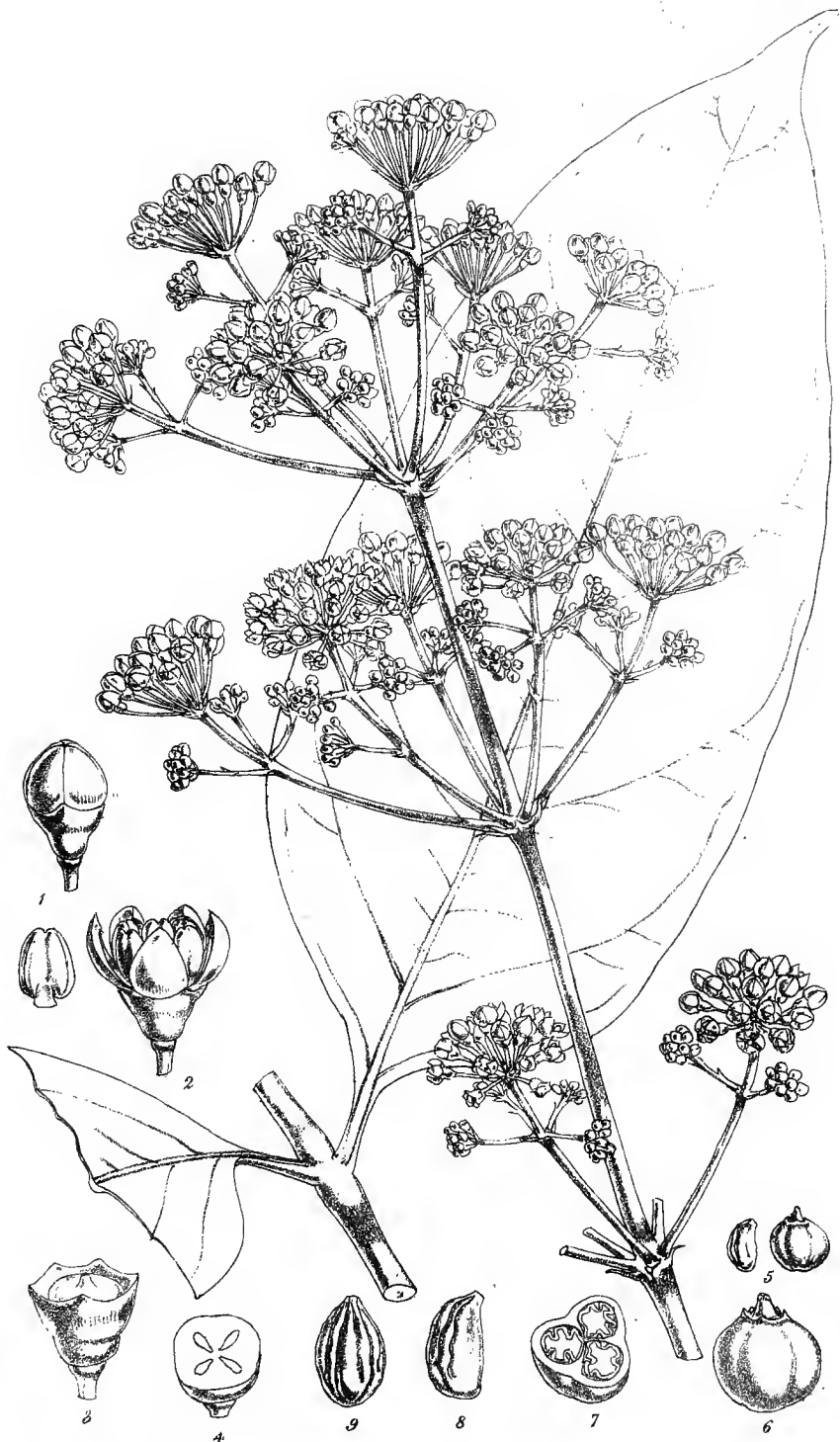


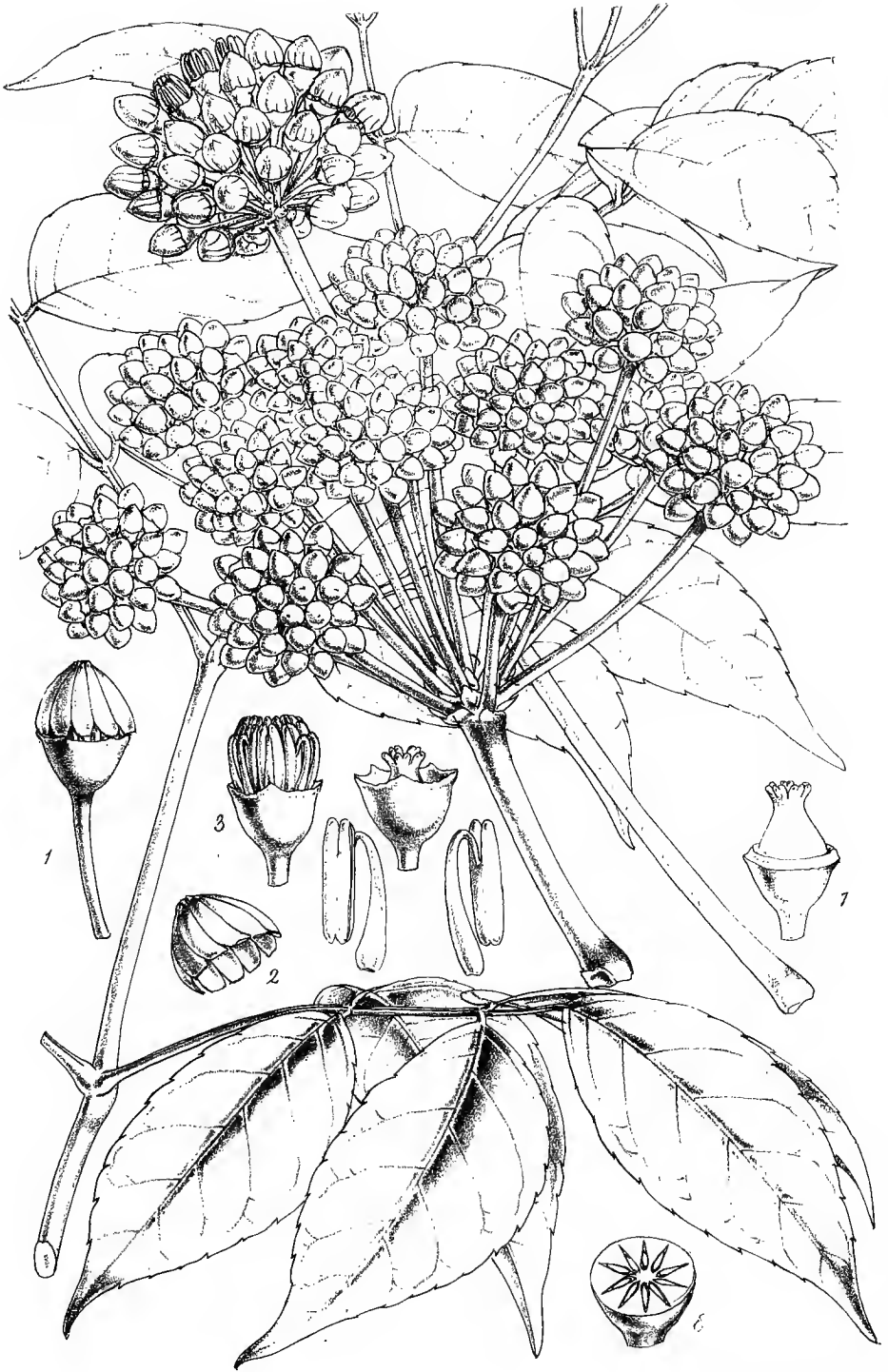












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