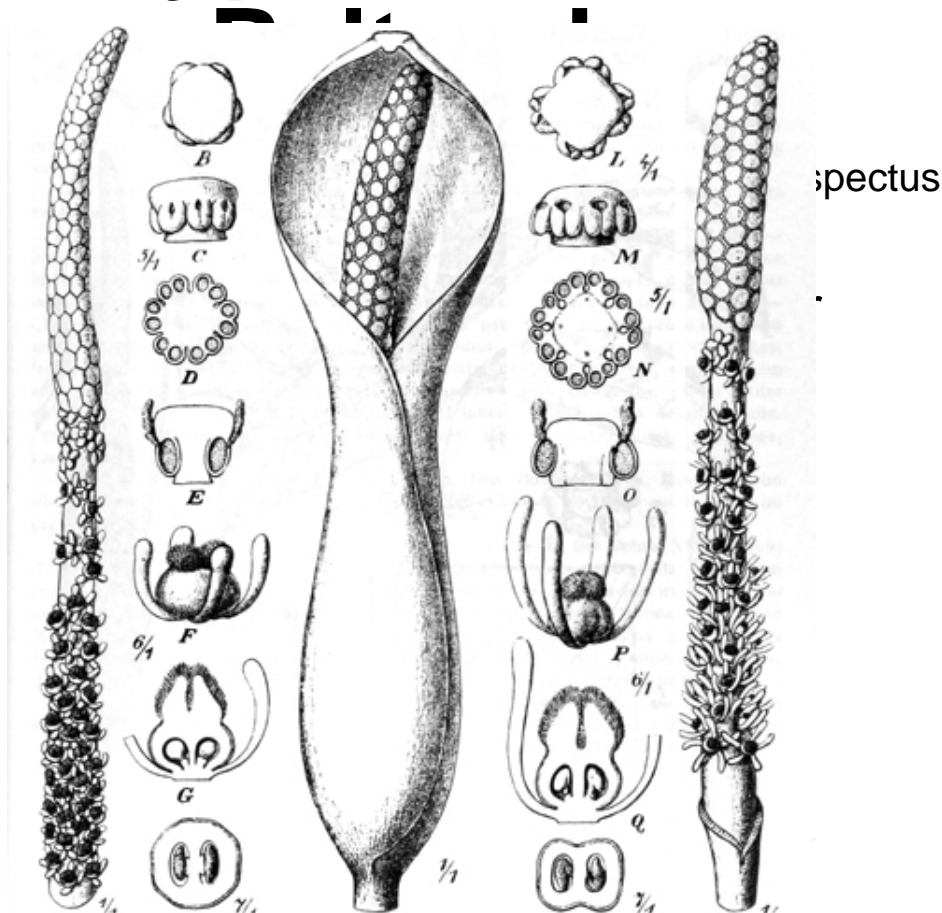


Araceae - Philodendroideae - Anubiadeae, Aglaonemateae, Dieffenbachieae, Zantedeschieae; Typhonodoreae,



Copyright (c) 2008 Kurt Stüber.

Permission is granted to copy, distribute and/or modify this document under the terms of the GNU Free Documentation License, Version 1.2 or any later version published by the Free Software Foundation; with no Invariant Sections, no Front-Cover Texts, and no Back-Cover Texts.

A copy of the license is included in the section entitled "GNU Free Documentation License".

Das Original des Werkes wurde freundlicherweise von der Universitätsbibliothek Köln zur Verfügung gestellt. Einscannen und Bearbeiten durch Frank Al-Dabbagh, Juni, 2004.

This book has been created using the program `make_book.pl`, version: 4.0, Date: 2008-Feb-29

Index: lateinischen Namen

- Aglaodorum Griffithii --> Seite 36
- Aglaonema Pierreanum --> Seite 24
- Aglaonema Ridleyanum --> Seite 29
- Aglaonema Robelinii --> Seite 20
- Aglaonema Schottianum var. Winkleri --> Seite 22
- Aglaonema Treubii --> Seite 19
- Aglaonema brevispathum --> Seite 33
- Aglaonema commutatum --> Seite 27
- Aglaonema cordifolium --> Seite 32
- Aglaonema elegans --> Seite 28
- Aglaonema marantifolium --> Seite 27
- Aglaonema modestum --> Seite 31
- Aglaonema nanum --> Seite 25
- Aglaonema novoguineense --> Seite 15
- Aglaonema oblongifolium --> Seite 16
- Aglaonema ovatum --> Seite 32
- Anubias auriculata --> Seite 9
- Anubias congensis --> Seite 7
- Anubias hastifolia --> Seite 9
- Dieffenbachia Bowmannii --> Seite 38
- Dieffenbachia Enderi --> Seite 54
- Dieffenbachia Leopoldii --> Seite 56
- Dieffenbachia Parlatoresi --> Seite 38
- Dieffenbachia Weirii --> Seite 56
- Dieffenbachia cannifolia --> Seite 42
- Dieffenbachia costata --> Seite 38
- Dieffenbachia daguensis --> Seite 44
- Dieffenbachia humilis --> Seite 59
- Dieffenbachia imperialis --> Seite 38
- Dieffenbachia latimaculata --> Seite 57
- Dieffenbachia parvifolia --> Seite 61
- Dieffenbachia picta --> Seite 38 47 50 51
- Dieffenbachia picta var. Barraquiniana --> Seite 51
- Dieffenbachia picta var. angustior subvar. Jenmanii --> Seite 38
- Dieffenbachia picta var. latior subvar. magnifica --> Seite 50
- Dieffenbachia picta var. typica --> Seite 50
- Dieffenbachia seguina var. lineata --> Seite 38
- Dieffenbachia seguina var. liturata --> Seite 47
- Dieffenbachia seguina var. viridis --> Seite 38
- Peltandra sagittifolia --> Seite 74
- Peltandra virginica --> Seite 75
- Typhanodorum Lindleyanum --> Seite 71 72
- Zantedeschia Rehmannii --> Seite 67
- Zantedeschia aethiopica --> Seite 64 65

|

Das Pflanzenreich

Regni vegetabilis conspectus

Im Auftrage der Königl. preuss. Akademie der Wissenschaften

herausgegeben von

A. Engler

IV. 23 Dc

Araceae-Philodendroideae-Anubiadeae, Aglaonemateae,
Dieffenbachieae, Zantedeschieae, Typhonodoreae, Peltandreae

mit 340 Einzelbildern in 34 Figuren

von
A. Engler

Ausgegeben am 15. Juni 1915

Heft 64

UNIVERSITÄTS-
UND
STADT-
BIBLIOTHEK
KÖLN
A

ARACEAE-PHILODENDROIDEAE-ANUBIADEAE, AGLAONEMATEAE, DIEFFENBACHIEAE, ZANTEDESCHIEAE, TYPHONODOREAE, PELTANDREAE

von

A. Engler.

(Gedruckt von Dezember 1914 bis Februar 1915.)

Allgemeiner Teil und System der Unterfamilie siehe Engler, Pflanzenreich, Heft 55 (IV. 23 Da).

Tribus II. Anubiadeae Engl.

Anubiadeae Engl. in DC. Mon. Phan. II. (1879) 70, in Engl. u. Prantl, Pflzfam. II. 3. (1887) 135 et in Pflanzenreich IV. 23 Da (1912) 24. — *Anubiadinae* (Subtribus) Schott, Prodr. Ar. (1860) 158. — vide Characterem in Pflanzenreich IV. 23 Da p. 24.

Clavis generum.

- A. Flores masculi 2—3-andri. Stamina libera 54a. *Amauriella* Rendle.
B. Flores masculi 3—5-andri. Stamina in synandrium
connata 54b. *Anubias* Schott.

54a. *Amauriella* Rendle.

Amauriella *) Rendle in Catalogue of the plants collected by Mr. and Mrs. P. A. Talbot in the Oban District South Nigeria (1913) 115 pl. 17.

Flores unisexuales nudi. Flores masculi 2—3-andri: Stamina libera subcuneata basi connata vertice rotundata et thecis oblongis parallelis longitudinaliter dehiscentibus instructa. Flores feminei digyni: Ovarium complete 2-loculare, ovulis plurimis hemianatropis funiculo longo placentae centrali affixis, micropyle fundum spectante; stilus subnullus, stigma discoideum. — Herba haud elata. Foliorum petiolus tenuis, lamina trisecta, segmentis unicastatis, nervis lateralibus I. numerosis cum secundariis parallelis procul a margine conjunctis. Pedunculus folio brevior. Spatha convoluta demum superne aperta. Spadicis superne exserti densiflori inflorescentia feminea masculae contigua.

A. obanensis Rendle l. c. — Herba glabra. Folia lamina trisecta, segmento intermedio late lanceolato 2,5 dm longo, 9,5 cm lato, lateralibus brevioribus falcate oblanceolatis obtusis 1,6—2,7 dm longis, 4—4,5 cm latis. Pedunculus petiolo brevior 10,5 cm longus. Spatha superne aperta oblonga 2,5 cm longa. Spadix breviter stipitatus 2,5 cm longus; inflorescentia feminea quam mascula 4-plo brevior, 0,5 cm longa. Pistilla subglobosa 1 mm longa.

*) Nomen in honorem collectoris P. Amaury et ejus uxoris.

Westafrikanische Waldprovinz: Süd-Nigeria, Oban (P. A. Talbot n. 1532 — Herb. Brit. Mus.).

Nota. Hoc genus sequenti valde affine est et fortasse cum eo conjungendum, nam flores utriusque generis paullum inter se differunt; masculi *Amauriellae* stamina 2—3 libera, *Anubiadis* stamina 3—5 ± connata monstrant. Itaque genera duo in unum conjungerem, si nervatura eadem esset. Ex icone supra citata *Amauriellae* nervatura ab ea omnium specierum generis *Anubias* differt nervis secundariis cum primariis procul a margine conjunctis. Specimina non vidi.

54b. **Anubias** Schott.

*Anubias**) Schott in Oest. Bot. Wochenbl. VII. (1857) 398, Gen. Aroid. (1858) t. 42, Prodr. (1860) 159; Engl. in DC. Mon. Phan. II. (1879) 433, in Engl. u. Prantl, Pflzfam. II. 3. (1894) 135 et in Engler's Bot. Jahrb. XV. (1892) 462; N. E. Brown in T. Dyer, Fl. trop. Afr. VIII. (1901) 182.

Flores masculi 3—5-andri: Stamina 3—5 in synandrium breviter cylindricum medio tubulosum vel solidum truncatum connata; antherae connectivo crasso oppositae, dimidium synandrii subaequant, thecis oblongis juxtapositis, rimula longula aperientibus. Flores masculi steriles: Staminodia 3—5 in synandrodium obpyramidatum, vertice truncatum connata. Flores feminei 2—3-gyni: Ovarium depresso-globosum vel ovoideum, incomplete vel superne complete 2—3-loculare; ovula cylindrica, anatropa, funiculis longioribus placentis multifariam appensa, micropyle tholum spectantia, stilus brevissimus vel nullus; stigma discoideum. Baccae obovoideae, vertice umbilicatae, 2—3-loculares; loculis polyspermis. Semina funiculo longulo affixa, ovoidea, raphe hilum versus dilatata, testa crassiuscula, tegmine tenui instructa. Embryo axilis in albumine copioso. — Herbae prorepentes caudice interdum ramoso crasso densiuscule foliato. Foliorum petioli longitudine variantes in juvenulis breviores, lamina elongato-lanceolata, utrinque acuta vel ovato-lanceolata vel subcordato-sagittata vel hastata, nervis lateralibus I. numerosis erecto-patentibus vel arcuatim patentibus, infimis interdum in costulas posticas conjunctis, nervis II. crebris primariis subparallelis, omnibus nervis collectivis marginalibus conjunctis, venulis numerosissimis inter nervos transversis. Pedunculi longi. Spatha crassa, viridis, sensim longius vel abrupte breviter acuminata, inferne convoluta, superne hians. Spadicis liberi inflorescentia feminea masculae subaequilonga vel paulum brevior, mascula omnino fertilis vel inferne sterilis. Fructuum spica rhachide inflorescentiae masculae superata.

Nota. Sectiones *Cylindranubias* et *Synanubias* quas in Bot. Jahrb. XV. proposui, quarumque prima in floribus masculis stamina lateribus cohaerentia, faciebus suis interioribus autem libera, altera stamina omnino connata praebet, conservare non possum, quum in eadem specie (*A. hastifolia*) flores utriusque typi occurrunt, etiam in speciebus illi affinibus flores masculi typi secundi observantur. Etiam proportio inflorescentiae masculae et femineae in eadem specie variabilis est, nam in specimine culto *Anubiadis congensis* var. *crassispadix*, inflorescentia feminea valde reducta pauciflora occurrit.

Clavis specierum.

- A. Foliorum lamina lanceolata, latitudine sua triplo vel magis longior. Costa et venae glaberrimae. Spatha convoluta.
 - a. Foliorum lamina basi in petioli geniculum late sulcatum transiens 1. *A. affinis*.
 - b. Foliorum lamina basi acuta vel subobtusa. Petioli geniculum haud vel anguste sulcatum.
 - α. Foliorum lamina 2,3—3 dm longa.
 - I. Spatha circ. 6—6,5 cm longa 2. *A. Afzelii*.
 - II. Spatha circ. 1,5 cm longa 3. *A. Engleri*.

*) Nomen ceterum herbae Anubidi dicatae.

- B. Foliorum lamina lanceolata aut ovato-lanceolata aut basi cordata. Costa cum geniculo glabra vel puberula. Spatha adulta in anthesi expansa, tenuis.
- a. Foliorum lamina lanceolata glabra 4. *A. lanceolata*.
 - b. Foliorum lamina parva breviter ovata usque ovato-lanceolata glabra 5. *A. nana*.
 - c. Foliorum lamina lanceolata aut ovato-lanceolata basi cordata. Costa cum geniculo puberula vel geniculum tantum puberulum 6. *A. Barteri*.
- C. Foliorum lamina lanceolata aut ovato-lanceolata aut basi cordata aut sagittata aut hastata. Costa cum geniculo glabra aut puberula. Spatha adulta in anthesi convoluta, supra tantum aperta, carnosa, crassiuscula.
- a. Foliorum costa cum geniculo glabra 7. *A. heterophylla*.
 - b. Foliorum geniculum vel etiam costa et nervi laterales I. puberuli.
 - α . Foliorum lamina lanceolata usque cordato-ovata 8. *A. congensis*.
 - β . Foliorum primariorum lamina oblonga, basi rotundata, secundariorum et ultimorum auriculata, lobis posticis brevissimis $\frac{1}{4}$ latitudinis laminae haud aequantibus. 9. *A. auriculata*.
 - γ . Foliorum lamina hastata.
 - I. Laminae lobi postici quam anticus 3—4-plo breviores angulo circ. 90° sejuncti 10. *A. Haullevilleana*.
 - II. Laminae lobi postici quam anticus 4—5-plo breviores angulo circ. 120° sejuncti. Spatha parva 2 cm longa 11. *A. Gilletii*.
 - III. Laminae partitiones posticae quam antica $1\frac{1}{2}$ — $2\frac{1}{2}$ -plo breviores. Spadix ultra spatham longiuscule exsertus 12. *A. hastifolia*.

1. **A. affinis** De Wild. in Études sur la Fl. du Bas et du Moyen Congo II. (1907) 17 t. XXI. — Caudiculus prorepens circ. 1,5—2 cm crassus. Foliorum petiolus laminae aequilongus vel ea longior basi late ad tertiam partem usque angustius vaginatus, 0,8—2,3 dm longus, geniculo 1,5—2 cm longo profunde canaliculato instructus, lamina lanceolata utrinque aequaliter angustata, 1,5—2,8 dm longa, 5,5—11,7 cm lata, basi cuneata, apice acuminata. Pedunculi 9—12 cm longi. Spatha ovata vel elliptica anthesi basi, in statu fructifero tota convoluta, 4—5 cm longa, 2 cm lata. Spadix stipite 5 mm longo suffultus, ipse 3,5 cm longus; inflorescentia feminea circ. 7—8 mm longa, mascula fere 3 cm aequans, inferne 4 cm crassa.

Westafrikanische Waldprovinz: Congobecken (kultiviert im Kolonialgarten von Lacken).

2. **A. Afzelii** Schott in Oest. Bot. Wochenbl. (1857) 399, Gen. Ar. (1858) t. 42, Prodr. (1860) 159; Engl. in DC. Mon. Phan. II. (1879) 434; N. E. Brown in Fl trop. Afr. VIII. (1904) 183. — Rhizoma interdum subaquaticum. Foliorum petioli 1,5 dm et ultra longi, geniculo longulo haud sulcato instructi, lamina elongato-lanceolata, inferne cuneata, apice longe acuminata, 2—3,5 dm longa, 3,5—8 cm lata, utrinque subaequaliter angustata, nervis lateralibus patentibus, nervis collectivis 2—3 antemarginalibus. Pedunculi tenues 3 dm longi. Spatha oblonga apice repentino in cuspidem 2—3 mm longum triangularem contracta, convoluta, tubo 1,3 cm amplo, apiculata anguste tubulosa. Spadicis anguste cylindrici inflorescentia feminea fere 3 cm, mascula sterilis 1,5 cm, fertilis 1,5 cm longa. Ovaria depresso-globosa, stilo brevi atque stigmate discoideo 3—4-lobo coronata.

Westafrikanische Waldprovinz: Sierra Leone (Afzelius. — Herb. Upsala), an Bächen bei Vatemala Road (Barter. — Herb. Kew), in Sümpfen bei Intro (Johnson n. 732. — Herb. Kew); Bafodeya (Scott Elliot n. 5560. — Herb. Kew).

3. **A. Engleri** De Wild. in *Études sur la Fl. du Bas et du Moyen Congo* II. (1907) 17 t. 19; Th. Durand et H. Durand, *Sylloge Fl. congolanae* (1909) 591. — *A. Afzelii* Th. Dur. et De Wild. *Contrib. Fl. Congo* II. (1900) 65. — Caudiculus prorepens. Foliorum petiolus quam lamina longior vel ei subaequilongus, 2,4 dm longus, geniculo haud sulcato instructus, lamina lanceolata, basi subacuta vel obtusa, apice acuta, 1,8—2,3 dm longa, 4,5—6,5 cm lata. Pedunculi tenues. Spatha (etiam juvenilis) 4,5 cm longa. Spadix ignotus.

Westafrikanische Waldprovinz: Congobecken, Pioko (Em. Laurent Okt. 1895. — Herb. Brüssel).

4. **A. lanceolata** N. E. Brown in *Fl. trop. Afr.* VIII. (1901) 183. — *A. Barteri* var. *glabra* N. E. Brown in *Fl. trop. Afr.* VIII. (1901) 185. — Caudiculus prorepens, dense foliatus, 1,2—1,5 cm crassus. Folia omnino glabra, magnitudine diversa; petiolus circ. 6,5—11,5 cm longus, vagina 5—6,5 cm longa basi valde dilatata et geniculo tenui haud puberulo instructus, lamina herbacea, lanceolata utrinque aequaliter angustata, basi subrotunda, apice subobtusa, 1—1,5 dm longa, 2,5—5 cm lata, nervis lateralibus I. pluribus arcuatim adscendentibus. Cataphylla 5—6 cm longa. Pedunculus circ. 1,2 dm longus, tenuis, glaber. Spatha oblonga, basi convoluta, supra expansa apiculata, ex albo-virescens circ. 2,5—5 cm longa. Spadix sessilibus cylindricus spatham aequans vel paullum longior 3 mm crassus inflorescentia feminea circ. 8 mm longa, mascula 3—3,5 cm longa. Pistilla subglobosa, stigmatibus sessilibus instructa.

Westafrikanische Waldprovinz: Süd-Nigerien—Kamerun, im Nordwesten von Ikuro zwischen Old-Calabar und Cross River (Holland n. 167. — Herb. Kew). Kamerun: Rio del Rey (Johnston. — Herb. Kew); Barombi (Preuss n. 422. — Herb. Berlin); Batanga, am Fuße großer Bäume in Bachrinnen (J. Braun n. 7. — Blühend im Okt. 1887. — Herb. Berlin); Bibundi (Jungner n. 143. — Herb. Upsala). — Gabun (Klaine n. 2008. — Herb. L. Pierre—Paris).

forma *angustifolia* Engl. — Foliorum lamina anguste lanceolata, 1,5—2 cm lata.

Kamerun: Kap Dibundscha (Dusen n. 87. — Herb. Berlin), Bibundi (R. Schlechter n. 12412. — Herb. Berlin).

Nota. Vix species distincta et melius cum sequente conjungenda.

5. **A. nana** Engl. in *Engler's Bot. Jahrb.* XXVI. (1899) 423; N. E. Brown in *Th. Dyer, Fl. trop. Afr.* VIII. (1901) 186. — Herba nana caudiculo prorepente ramoso fere 1 cm crasso, dense foliato, internodiis circ. 5 mm longis. Foliorum petiolus quam lamina brevior 3—4 cm longus, vagina 2 cm longa et geniculo 5 mm longo, late canaliculato glaberrimo instructus, lamina utrinque, supra magis nitidula ovata vel ovato-lanceolata acuta, basi obtusa vel emarginata, 5—6 cm longa, 2—2,5 cm lata, nervis lateralibus I. numerosis arcuatim adscendentibus subtus paullum prominulis, venis inter illos transversis vix prominulis. Pedunculus demum folia superans, 0,5—1 dm longus. Spatha oblonga vel oblongo-lanceolata acuminata, leviter convoluta, pallide viridis 2—2,5 cm longa. Spadicis quam spatha paullum brevioris cylindrici inflorescentia feminea quam mascula 2—2½-plo brevior circ. 7 mm longa. Pistillorum ovaria depresso-globosa 2-locularia, stilo brevissimo et stigmatibus parvo orbiculari instructa. Flores masculi plerumque 4-andri, synandria depressa, thecis obovatis lateralibus.

Westafrikanische Waldprovinz: Kamerun: Victoria (Lehmbach. — Seit 1897 im Botanischen Garten zu Berlin—Dahlem kultiviert und noch immer unverändert).

Nota. Haec planta minime pro varietate *Anubiadis Barteri* haberi potest, propter foliorum geniculum et costam glaberrimam neque puerulam. Insuper plantae habitus foliis parvis lamina ovata basi emarginata instructis semper idem remanet, dum specimina *Anubiadis Barteri* magis adulta folia majora emittunt.

6. **A. Barteri** Schott, *Prodr.* (1860) 459; Engl. in *DC. Mon. Phan.* II. (1879) 435 et in *Bot. Jahrb.* XV. (1893) 463; N. E. Brown in *Fl. trop. Afr.* VIII. (1901) 185. — Planta in statu juvenili et magis adulta foliorum magnitudine et forma valde diversa. Caudiculus prorepens densiuscule foliatus, 0,5—1 cm crassus. Foliorum petiolus 0,5—2,8 dm longus, vagina 2,5—4 cm longa basi valde dilatata et geniculo 1—

2 cm longo minute puberulo instructus, lamina stirpis juvenilis lanceolata vel oblongo-elliptica vel ovata vel ovato-lanceolata, stirpis adultae ovato-oblonga, basi obtusa vel cordata vel cordato-sagittata, lobis posticis brevibus rotundatis, plerumque retrorsis vel introrsis, raro subextrorsis, 0,7—2 dm et ultra longa, 0,3—1,2 dm lata, costa et nervis lateralibus I. vel costa tantum minute puberulis, nervis lateralibus I. numerosis arcuatim patentibus, in foliis cordatis et cordato-sagittatis in costas posticas retrorsas conjunctis. Pedunculus tenuis, glaber 0,6—2 dm longus. Spatha oblonga apiculata, pallide viridis vel alba, 2,5—3,7 cm longa, anthesi expansa, fructigera convoluta. Spadix sessilis vel brevissime stipitatus tenuiter cylindricus 2,5—4 cm longus, 4 mm crassus; inflorescentia feminea quam mascula 4-plo brevior. Pistilla depresso-globosa, stilo brevissimo et stigmate discoideo instructa.

Westafrikanische Waldprovinz: Im dichten Regenwald, kriechend auf moosbewachsenen Felsen und Steinen, auf Baumwurzeln an Bachufern und in Bächen, mit vielen Wurzeln festsitzend, kleine Bestände bildend.

Fernando Po (Mann n. 104, Barter n. 2045. — Herb. Kew)

Kamerun: Efulen (Bates n. 289. — Herb. Kew), um Victoria am Limbeffluß (Preuss n. 1223, 1359, Deistel n. 129, 196, Winkler n. 19b, 629. — Blühend fast zu allen Jahreszeiten. — Herb. Berlin); Barombi oder Johann Albrechtshöhe (Staudt n. 772, Preuss n. 465, 559. — Herb. Berlin); Lolodorf (Staudt n. 354, Achenbach. — Herb. Berlin); Elabi (Ledermann n. 538); Nkolebunde um 350 m (Ledermann n. 898, 919); Bare, am Moambach um 860 m ü. M. (Ledermann n. 1289); Ndonge, um 700—1000 m (Ledermann n. 6174, 6371. — Herb. Berlin); Bipindi, in den Schnellen des Lokundje (Zenker n. 901, 2853. — Herb. Berlin); Edea (Lotz n. 94. — Herb. Berlin); Bezirk Molundu, an der Mündung des Bök in den Bumba (Mildbraed n. 4232. — Herb. Berlin); Ebolowa, im Hügelland 22 km östlich von Ebolowa, um 700 m (Mildbraed n. 5725. — Herb. Berlin); Bezirk Kribi, an der westlichen Abdachung des Randgebirges, bei Fenda 58 km östlich von Kribi (Mildbraed n. 5934. — Herb. Berlin). — Congobecken: Yambuga-Patalongo am Aruwimi (Mildbraed n. 3286. — Blühend im Mai. — Herb. Berlin).

Var. *caladiifolia* Engl. — Major, stirpis adultae petioli 2—2,5 dm longi, geniculo puberulo 1,5 cm longo instructi, lamina sagittata, 1,8—2,3 dm longa, 8—10 cm lata, lobis posticis quam anticus 6—7-plo brevioribus subtriangularibus obtusis, retrorsis vel subintrorsis, sinu profundo circ. 60° sejunctis. Pedunculus usque 3,5 dm longus. Spatha usque 4,5 cm longa.

Kamerun: Bipindi, bei Mimfia (Zenker n. 3343, 4589. — Blühend im April 1912. — Herb. Berlin).

7. *A. heterophylla* Engl. in DC. Mon. Phan. II. (1879) 435, in Engler's Bot. Jahrb. XV. (1892) 463; Durand et Schinz, Consp. Fl. Afr. V. 476; Rendle in Hiern, Cat. Afr. Pl. Welw. II. (1899) 88; N. E. Brown in Fl. trop. Afr. VIII. (1904) 184. — *A. Afzelii* Engl. Arac. exs. et illustr. t. 121 quoad figuram plantae nec analysis; Engler's Bot. Jahrb. XV. (1893) 463; Durand et Schinz l. c., Rendle in Hiern, Cat. Afr. Pl. Welw. II. 89. — Planta similiter ut *A. Barteri* foliorum magnitudine et forma varians. Caudiculus prorepens radicans, 7—10 mm crassus. Foliorum petiolus 0,5—3,8 dm longus, glaber, geniculo 0,5—1 cm longo instructus, lamina crassiuscula, glaberrima, lanceolata vel ovato-oblonga basi acuta vel obtusa subtruncata vel cordata lobis posticis brevibus rotundatis sinu lato sejunctis, 1,5—3 dm longa, medio vel infra medium 0,6—1,3 dm lata, nervis lateralibus numerosis glaberrimis angulo circ. 45° a costa glaberrima patentibus leviter arcuatis. Pedunculus petioli dimidium aequans vel ei aequilongus. Spatha carnosae, viridis, convoluta oblonga, apiculata, circ. 3—5 cm longa, 1,2—1,8 cm ampla. Spadix cylindricus circ. 3—5 cm longus; inflorescentia feminea masculae aequilonga vel ea brevior. Pistilla ovoidea, stigmate discoideo coronata, inter se arte contigua.

Westafrikanische Waldprovinz: Angola, Golungo Alto, in den Wäldern an der Quelle des Quibolo um 300—800 m ü. M. (Welwitsch n. 237. — Herb. Berlin)

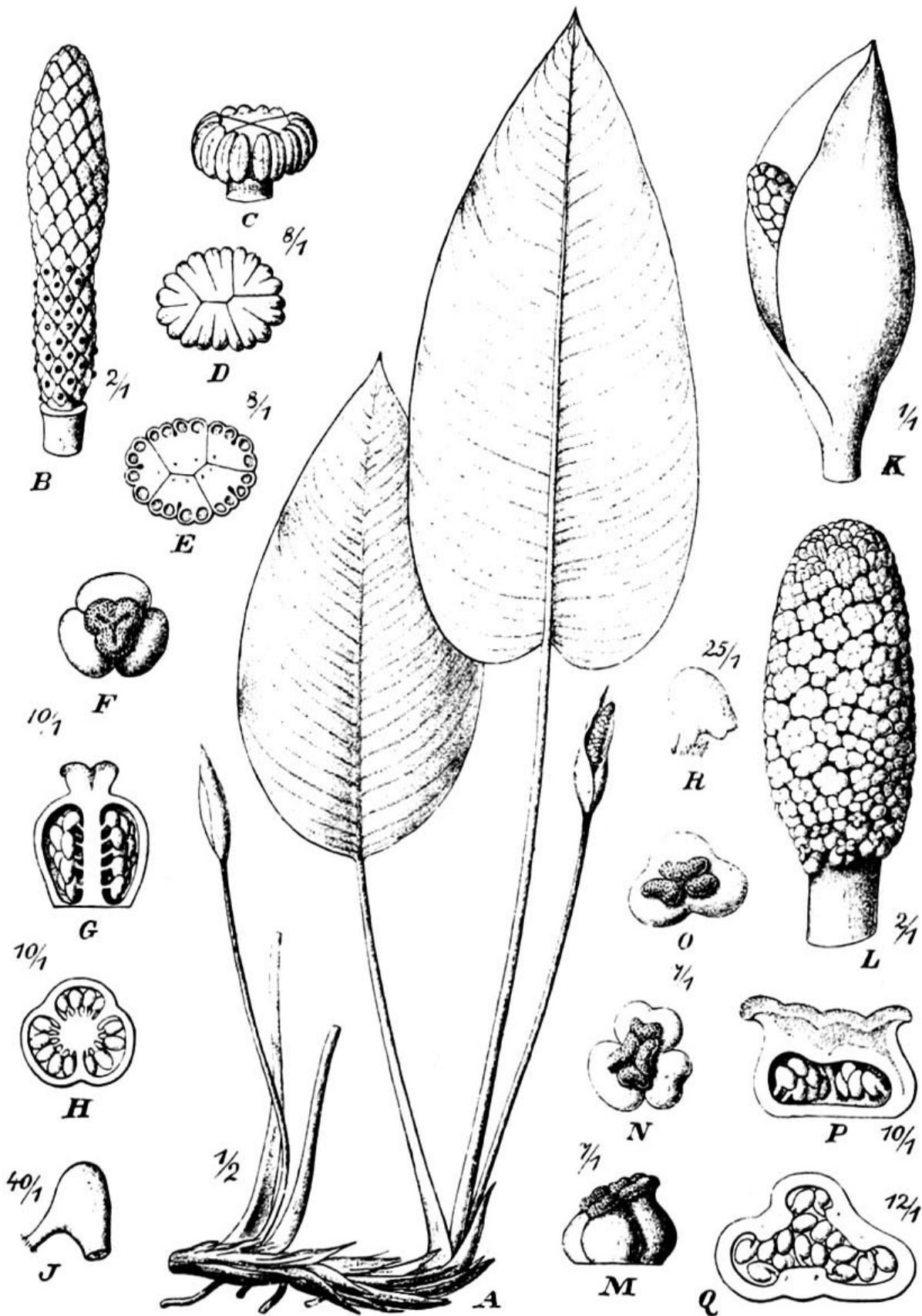


Fig. 1. *Anubias congenis* N. E. Brown. *A* Habitus. *B* Spadix. *C* Flos masculus a latere visus. *D* Idem de supra visus. *E* Ejusdem sectio transversalis. *F* Pistillum de supra visum. *G* Idem longitudinaliter sectum. *H* Ejusdem sectio transversalis. *J* Ovulum. — *K*—*R* var. *crassispadix* Engl. *K* Inflorescentia. *L* Spadix. *M* Pistillum. *N*, *O* Idem de supra visum. *P* Idem longitudinaliter sectum. *Q* Idem transversaliter sectum. *R* Ovulum. — Icon. origin.

et Herb. Kew; n. 238. — Herb. De Cand., Brit. Mus.); Cazengo, in den Muzandobergen, um 600 m ü. M. (Welwitsch n. 236. — Herb. Brit. Mus.).

8. **A. congensis** N. E. Brown in Fl. trop. Afr. VIII. (1901) 184; De Wild. Étud. Fl. Bas- et Moy.-Congo II. (1907) 17 pl. 20; Th. et H. Durand, Syll. Florae congolanae (1909) 591. — *A. heterophylla* N. E. Brown in Gardn. Chron. VI. (1889) 67. — Planta similiter ut *A. Barteri* et *A. heterophylla* foliorum forma varians. Caudiculus prorepens 1—2 cm crassus. Foliorum petiolus 1,2—2,5 dm longus, circ. ad medium usque anguste, basi late vaginatus, geniculo circ. 1 cm longo puberulo instructus, lamina crassiuscula oblongo-lanceolata vel oblonga vel ovata, basi subacuta vel rotundata vel cordata lobis posticis sinu late aperto sejunctis, apice acuta, vix acuminata, 1,5—3,5 dm longa, 0,6—1,3 dm lata, costa et nervis lateralibus l. patentibus leviter arcuatis subtus minute puberulis. Pedunculus 1—2,5 dm longus, plerumque petioli dimidium paullum superans. Spatha carnosae, viridis, convolutae, viridis ovoidea vel ellipsoidea, obtusa, brevissime apiculata, supra tantum aperta, 2,5—5 cm longa, 1—2 cm ampla. Spadix cylindricus quam spatha paullum vel $1\frac{1}{2}$ -plo brevior; inflorescentia feminea quam mascula 2—4-plo brevior. Pistilla subglobosa vel depresso-globosa, stigmatibus sessilibus discoideo coronata. — Fig. 1.

Westafrikanische Waldprovinz: Unterer Congo: Boma (in die Kultur der europ. Gärten eingeführt von Bull). — Spanisch-Guinea: im Camposgebiet bei Bebai (Tessmann n. 515, 697. — Blühend und fruchtend im Dez. 1908. — Herb. Berlin).

Var. **crassispadix** Engl. — Spadix crassus 2,2 cm longus, 8—9 mm crassus, inflorescentia feminea valde reducta pauciflora 2 mm tantum longa. — Fig. 1K—R.

Kultiviert im Botan. Garten Berlin-Dahlem.

9. **A. auriculata** Engl. in Engler's Bot. Jahrb. XXVI. (1899) 184; N. E. Brown in Fl. trop. Afr. VIII. (1901) 184. — Caudiculus longe prorepens, circ. 1 cm crassus, internodiis 1 cm tantum longis. Foliorum petiolus circ. 3 dm longus, basi late, fere ad dimidium usque anguste vaginatus, superne teretiusculus late canaliculatus geniculo 1—2 cm longo puberulo instructus lamina rigidiuscula oblongo-lanceolata breviter acuminata, 2,5—2,8 dm longa, medio circ. 8—10 cm lata, utrinque subaequaliter angustata, basi brevissime cordata vel auriculata, auriculis retrorsis 1—2 cm longis atque 1 cm latis, nervis lateralibus numerosis patentibus leviter arcuatis ut costa puberulis. Pedunculus petioli dimidium vel tertiam partem subaequans 1—1,5 dm longus, spatha oblonga, apice subtruncata sordide ochracea vel brunnescens 3—4 cm longa, 1 cm ampla. Spadicis tenuiter cylindrici inflorescentia feminea quam mascula duplo triplo brevior circ. 7—9 mm longa, 3—4 mm crassa. Pistillorum ovarium subglobosum stilo brevissimo et stigmatibus lato disciformi instructum. — Fig. 2A—G.

Westafrikanische Waldprovinz: Kamerun, auf sumpfigem Waldboden bei Batanga (Dinklage n. 986. — Blühend im Sept. — Herb. Berlin), Bipindi, um 100 m (Zenker n. 1174, 3343. — Blühend im Nov. — Herb. Berlin).

10. **A. Haullevilleana** De Wild. et Th. Dur. in De Wild. Études Bas- et Moy.-Congo I. (1903) 13, pl. 6; Th. et H. Durand, Syll. Fl. congolanae (1909) 592. — Caudiculus prorepens circ. 1,5 cm crassus, dense foliatus. Foliorum petiolus usque 3 dm longus circ. ad quintam partem usque anguste, basi late vaginatus, geniculo circ. 1,5 cm longo canaliculato puberulo instructus, lamina supra obscure viridis, subtus pallidior, hastata lobo antico oblongo vel oblongo-lanceolato 2—2,5 dm longo, 8—12 cm lato, longe acuminato, lobis posticis quam anticis 3—4-plo brevioribus leviter curvatis e basi 2—3 cm lata versus apicem obtusum angustatis. Pedunculus 1,6—2,6 dm longus. Spatha circ. 3 cm longa, 1,8 cm lata. Spadix fructifer 3,2 cm longus spatham superans; pars fructifera 2,2 cm longa, 1,2 cm crassa.

Westafrikanische Waldprovinz: Süd-Kamerun, Bez. Kribi, an der westlichen Abdachung des Randgebirges, im Hügelland um 200 m bei Fenda, 58 km östlich von Kribi (Mildbraed n. 6004. — Herb. Berlin). — Congobecken: Kisantu im Bez. Stanley-Pool (Gillet n. 1993. — Herb. Brüssel); Brazzaville (Chevalier n. 11129 und 11387).

11. **A. Gilletii** De Wild. et Th. Dur. Pl. Gilletianae II. 105 in Bull. Herb. Boiss. 2. Sér. I. (1901) 845; De Wild. Études Fl. Bas- et Moy.-Congo I. (1903) 14 pl. 12. — Caudiculus prorepens circ. 5 mm crassus, apice dense foliatus. Foliorum petiolus tenuis 0,9—2 dm longus, inferne vaginatus, lamina integra brevis rotundata vel subcordata

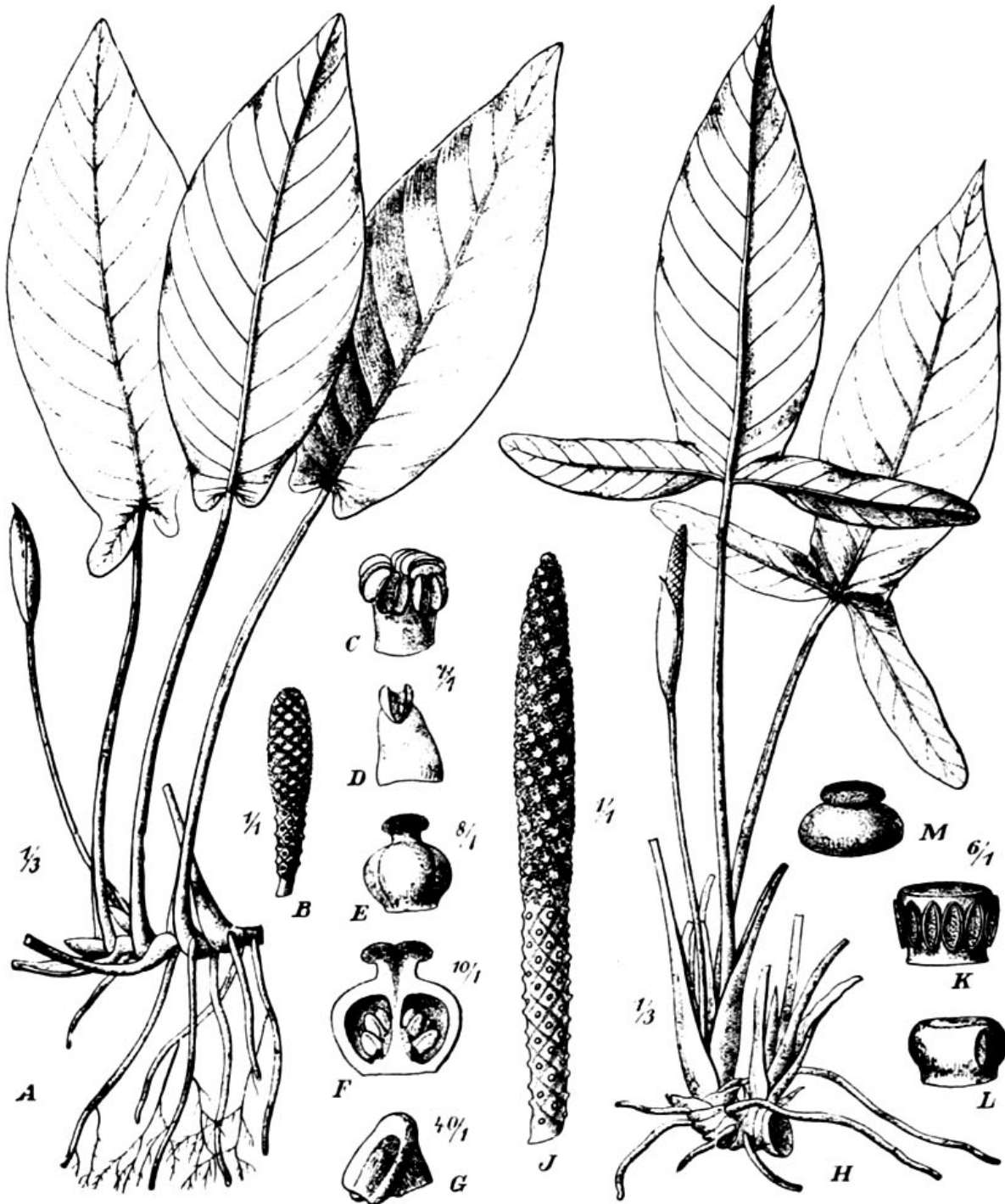


Fig. 2. *Anubias*. A—G *A. auriculata* Engler. A Caudiculus cum foliis et inflorescentia, $\frac{1}{2}$ m. n. B Inflorescentia. C Flos ♂. D Stamen. E Pistillum. F Ejusdem sectio longitudinalis. G Ovulum. — H—M *A. hastifolia* Engler. H Habitus. J Inflorescentia. K Synandrium. L Synandrium, cujus una tantum theca fertilis, reliquae steriles. M Pistillum. — Icon. origin.

vel hastata, lobo antico oblongo acuminato 0,7—1 dm longo, 3—5 cm lato, lobis posticis quam anticus 5—6-plo brevioribus, semioblongis vel subtriangularibus obtusis 1,5—2 cm longis, nervis lateralibus I. numerosis leviter arcuatis. Pedunculi quam petioli breviores circ. 1 dm longi. Spatha ovata conchiformis ad medium usque clausa,

subacuta, 1,5—2 cm longa, circ. 1 cm ampla. Spadix circ. 1,2 cm longus; inflorescentia feminea circ. 6—7 mm longa laxiflora. Pistillorum ovarium breviter ovoideum in stilum brevissimum stigmatibus orbiculari coronatum contractum. Flores masculi 3—4-andri.

Westafrikanische Waldprovinz: Congobecken, Kimuenza (J. Gillet n. 1696. — Herb. Brüssel).

12. **A. hastifolia** Engl. in Engler's Bot. Jahrb. XV. (1892) 462; Th. Dur. et Schinz, Consp. Fl. Afr. V. (1895) 476; N. E. Brown in Th. Dyer, Fl. trop. Afr. VIII. (1901) 185; De Wild. et Th. Dur. Contr. fl. Congo II. (1900) 65; De Wild. Études Bas- et Moy.-Congo I. (1903) 14, pl. VII; Th. et H. Dur. Sylloge Fl. congol. (1909) 591. — Caudiculus repens apice dense foliatus, 1—1,5 cm crassus. Foliorum petiolus laminae aequilongus vel ea longior, circ. 2 dm aequans, ad $\frac{1}{4}$ vel $\frac{1}{3}$ longitudinis usque vaginatus, vagina e basi lata sursum valde angustata, lamina membranacea supra saturate viridis, primariorum lanceolata auriculata, secundariorum hastata, partitionibus posticis subretrorsis vel saepius fere horizontaliter patentibus quam antica lanceolata $1\frac{1}{2}$ — $2\frac{1}{2}$ -plo brevioribus, linearibus usque lanceolatis obtusis $5 \times 1,5$ — 13×8 cm latis, partitione antica 1,2—2 dm longa, 0,5—1,3 dm lata, nervis lateralibus I. et II. numerosis subparallelis, venis tenuibus inter illos transversis. Pedunculus quam petiolus paulum brevior, 1,5—2,2 dm longus. Spatha oblonga, 5 cm longa, 2 cm lata. Spadicis e medio utrinque attenuati 4—7 cm longi inflorescentia feminea quam mascula $1\frac{1}{2}$ -plo brevior circ. 1,5—3 cm longa. Pistillorum ovaria depresso-globosa in stilum brevissimum stigmatibus orbiculari coronatum contracta. Florum masculorum stamina 4—5 crassa lateribus suis cohaerentia, faciebus suis interioribus libera, cylindrum brevem anguste tubulosum efformantia, thecis apice staminum juxtapositis. — Fig. 2 H—M.

Westafrikanische Waldprovinz: Kamerun: Groß-Batanga, auf Steinen, am Fuß von Bäumen, in wechselnden Bachrinnen (J. Braun n. 5. — Blühend im Nov.), an tiefen nassen Stellen des höheren Strandwaldes (C. Ledermann n. 159. — Blühend im August. — Herb. Berlin).

Oberguinea: Togo, Misahöhe (Baumann n. 171. — Blühend im April 1894); in Bergschluchten des Kuë-Gebirges (Kersting n. 657. — Herb. Berlin).

Congobecken: am Zusammenfluß des Kassar und Samkuru (E. Laurent. — Nov. 1895. — Herb. Brüssel).

Var. **sublobata** Engl. in Engler's Bot. Jahrb. XV. (1892) 463. — Partitiones laterales latere exteriori lobo angusto obliquo instructae.

Oberguinea: Togo, am Jogo (Kling n. 36. — Steril im Juni 1889).

Var. **robusta** Engl. — Planta valde robusta. Foliorum petiolus circ. 3 dm longus, 5 mm crassus, geniculo 2 cm longo instructus, lamina hastata partitionibus lateralibus 1—1,2 dm longis, 3—5 cm latis, antica 1,5 dm longa, 8 cm lata. Pedunculus 3 dm longus. Spatha usque 7 cm longa. Spadix 8,5 cm longus.

Oberguinea: Liberia, an Waldbächen bei Careysburg bei Monrovia (M. Dinklage. — Fruchtend im Febr. 1909. — Herb. Berlin).

Tribus III. **Aglaonemateae** Engl.

Aglaonemateae Engl. in Pflanzenreich IV. 23 Da. (1912) 25. — Subfam. V. *Aglaonemoideae* Trib. I. *Aglaonemeae* Engl. in Nov. Acta Acad. nat. cur. XXXIX. n. 3. (1876) 148 (16). — *Aglaonemeae* Engl. in Engl. u. Prantl, Pflzfam. II. 3. (1887) 135 excl. *Dieffenbachia*. — Characterem vide in Pflanzenreich IV. 23 Da. p. 25 ubi in linea prima sub C corrigatur: Caudex sympodialis erectus aut rhizoma horizontale.

Clavis generum.

- A. Caudiculus sympodialis erectus. Inflorescentia breviter pedunculata. Stigma infundibuliforme excavatum. Flores feminei staminodiis destituti 55. *Aglaonema* Schott.

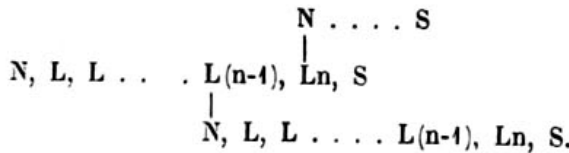
- B. Rhizoma horizontale. Inflorescentia longe pedunculata.
 Stigma discoideum 4-lobum. Flores feminei staminodiis
 singulis instructi 56. *Aglaodorum* Schott.

55. **Aglaonema** Schott.

Aglaonema *) Schott, Melet. I. (1832) 20, Syn. (1856) 124, Gen. Ar. (1858) t. 59, Prodr. (1860) 300; Blume in Rumphia I. (1835) 152 t. 65, 66; Endl. Gen. (1840) n. 1694, p. 238; Kunth, Enum. III. (1844) 54; Engl. in DC. Mon. Phan. II. (1879) 436, in Engl. und Prantl, Pflzfam. II. 3. (1894) 435; Hook. f. Fl. Brit. Ind. VI. (1894) 528, excl. *A. Griffithii*. — *Caladium* pr. p. Blume, Cat. Hort. Buitenz. (1823) 103. — *Callu* pr. p. Roxb. Fl. Ind. III. (1832) 516. — De ramificatione confer Engler in Nova Acta Acad. nat. cur. XXXIX. n. 3 (1870) 187.

Flores unisexuales nudi. Flores masculi 2-andri: Stamina brevia connectivo crasso, latiusculo, thecis oppositis obovoideis brevibus, connectivi apicem tantum occupantibus in vertice poro vel rimula transverse reniformi aperientibus. Flores feminei 1-, rarissime 2-gyni: Staminodia perpauca compressa rarissime ovarium circumdantia. Ovarium 1-, raro 2-loculare; ovulum in loculamento solitarium anatropum, breviter ovoideum funiculo brevissimo placentae indistinctae basilari in centro loculamenti (vel in ovariis 2-locularibus ad basin dissepimenti) oblique affixum, micropyle fundum spectans; stilus crassus, brevis; stigma magnum, discoideum vel infundibuliforme excavatum. Baccae oviformes vel oblongae, croceae vel miniatae, uniloculares, monospermae; semen ovoideum vel ellipsoideum, erectum, funiculo brevissimo basi loculi affixum, micropyle fundum spectans, testa tenui sublaevigata, tegmine inconspicuo. Embryo macropodus. Albumen nullum. — Plantae Monsuniae tantum, caudiculo erecto, rarissime decumbente, simplici sympodiali vel ramoso frutescente, cicatricibus annuliformibus obsito, laevi, viridi. Foliorum petioli laminae subaequilongi vel breviores, plerumque longe vaginati, lamina plerumque oblonga vel oblongo-lanceolata, rarius ovato-lanceolata, costa crassiuscula, nervis lateralibus I. paucis utrinque 4—7 vel pluribus patentibus vel adscendentibus, curvatis, marginem superiorem petentibus, nervis II. et III. numerosis primariis parallelis quam primarii tenuiores vel iis subaequalibus, venulis inter illos transversis. Pedunculi plures sympodium efformantes quam petioli breviores. Spatha recta, flavovirens vel viridis, intus saepe albida, inferne convoluta, superne hians, tubo et lamina non distinctis, ovato-lanceolata vel ovata, acuminata, demum tarde basin versus marcescens. Spadicis sessilibus vel saepius stipitati spatham aequantis vel ea brevioris, interdum eam superantis inflorescentia feminea pauciflora quam mascula cylindrica vel oblonga, raro claviformis, densiflora 3—4-plo vel multoties brevior eique arcte contigua.

Ramificationis schema:



Clavis specierum.

- A. Foliorum nervi laterales I. et II. subaequales, tenues, densi, subparalleli.
 a. Foliorum lamina oblonga, 1,8—3 dm longa.
 α. Foliorum lamina basi obtusa, latitudine sua 2—2¹/₂-plo longior.
 I. Pedunculus quam spatha circ. 4-plo longior. . . 1. *A. densinervium*.
 II. Pedunculus quam spatha circ. 3-plo longior. . . 2. *A. novo-guineense*.

*) Nomen compositum ex ἀγλαός clarus et νῆμα stamen propter stamina vertice nitida.

- β . Foliorum lamina basi acuta.
- I. Foliorum lamina circ. 2—3 dm longa, 8—9 cm lata. Spatha 7—8 cm longa 3. *A. oblongifolium*.
- II. Foliorum lamina circ. 1,8—2 dm longa, 5—7,5 cm lata.
1. Foliorum petiolus 1,25—1,5 dm longus ad tertiam partem usque vaginatus.
- * Foliorum lamina inferne cuneatim angustata. 4. *A. Helferi*.
- ** Foliorum lamina basin versus linea magis curvata angustata 5. *A. cochinchinense*.
2. Foliorum petiolus 2—2,2 dm longus, basi tantum vaginatus 6. *A. Clarkei*.
- b. Foliorum lamina ovato-lanceolata, 1—1,3 dm longa.
- α . Lamina immaculata 7. *A. pumilum*.
- β . Lamina marmorata 8. *A. marmoratum*.
- B. Foliorum nervi laterales I. quam nervi II. \pm validiores.
- a. Foliorum nervi laterales I. utrinque 15—20 9. *A. costatum*.
- b. Foliorum nervi laterales I. utrinque 3—13.
- α . Foliorum lamina \pm oblonga, utrinque subaequaliter angustata, apice breviter vel haud acuminata. Spadix cylindricus quam spatha paullum brevior.
- I. Foliorum lamina haud maculata vel secus costam tantum irregulariter cinereo-maculata.
1. Nervi laterales I. utrinque 5—7. Lamina haud maculata 10. *A. Haenkei*.
2. Nervi laterales I. utrinque 8. Lamina secus costam irregulariter cinereo-maculata 11. *A. Treubii*.
- II. Foliorum lamina tota maculata.
1. Petiolus quam lamina brevior vel ei aequilongus, lamina maculis nebulosis notata.
- * Petiolus ad medium usque vaginatus. Foliorum lamina cuspidato-acuminata, maculis albivirentibus notata 12. *A. nebulosum*.
- ** Petiolus ultra medium vaginatus. Foliorum lamina apice acuta, maculis cinereis notata. Spatha oblonga 13. *A. Robelinii*.
2. Petiolus quam lamina $1\frac{1}{2}$ -plo longior, lamina apice acuta, maculis cinereis inter nervos sitis notata 14. *A. Warburgii*.
- β . Foliorum lamina dimidio superiore magis quam inferne angustata.
- I. Nervi laterales I. supra \pm insculpti, subtus valde prominentes.
1. Foliorum lamina 1,5—3 dm longa.
- * Spadix cylindricus quam spatha brevior.
- † Foliorum lamina basi obliqua 15. *A. Schottianum*.
- †† Foliorum lamina basi obtusa.
- Nervi laterales III. subtus haud distincte apparentes 16. *A. siamense*.
- Nervi laterales III. subtus distincte apparentes 17. *A. borncense*.
- ** Spadix cylindricus vel claviformis spatham aequans vel superans.
- † Foliorum lamina basi acuta vel rotundata.

- Foliorum lamina haud valde inaequilatera. Spadix cylindricus spatham aequans 18. *A. simplex*.
- Foliorum lamina valde inaequilatera. Spadix claviformis spatham superans . 19. *A. subfalcatum*.
- †† Foliorum lamina basi cordata 20. *A. Pierreanum*.
2. Foliorum lamina 0,9—1,3 dm longa.
- * Nervi laterales I. utrinque 6—7 21. *A. Scortechinii*.
- ** Nervi laterales I. utrinque 5—6 22. *A. nanum*.
- II. Nervi laterales I. quam nervi II. paullum validiores, haud insculpti.
1. Foliorum lamina 1,5—3 dm longa.
- * Foliorum lamina oblonga vel oblongo-lanceolata.
- † Nervi laterales I. utrinque 6—10.
- Spatha oblonga cuspidata 23. *A. Hookerianum*.
- Spatha anguste oblonga, caudato-acuminata 24. *A. birmanicum*.
- †† Nervi laterales I. utrinque 4—5.
- Spadix quam spatha brevior.
- △ Foliorum petiolus quam lamina paullum brevior, inferne tantum vaginata 25. *A. tenuipes*.
- △△ Foliorum petiolus laminae aequilongus vel ea brevior, ad medium usque vaginatus.
- Spatha ovata.
- X Foliorum lamina immaculata 26. *A. marantifolium*.
- X X Foliorum lamina maculata . 27. *A. commutatum*.
- Spatha oblonga 28. *A. elegans*.
- Spadix spathae aequilongus. Foliorum lamina lanceolata basi obliqua rotundata 29. *A. Ridleyianum*.
- Spadix spatham superans, longe stipitatus. Foliorum lamina lanceolata, basi obliqua acuta 30. *A. hospitum*.
- ** Foliorum lamina ovata vel ovato-lanceolata.
- † Spadix quam spatha brevior.
- Foliorum lamina basi obtusa 31. *A. modestum*.
- Foliorum lamina basi emarginata . . 32. *A. philippinense*.
- Foliorum lamina basi cordata 33. *A. cordifolium*.
- †† Spadix spathae aequilongus.
- Foliorum lamina latitudine sua duplo longior 34. *A. nicobaricum*.
- Foliorum lamina latitudine sua 1¹/₂-plo longior 35. *A. ovatum*.
2. Foliorum lamina 0,7—1,3 dm longa.
- * Foliorum lamina oblonga vel ovato-oblonga vel ovato-lanceolata.
- † Foliorum lamina viridis.
- Folii petiolus laminam aequans vel ea longior. Caudiculus decumbens . . . 36. *A. brevispathum*.

- Foli petiolus lamina circ. duplo brevior. Caudiculus erectus.
- △ Foliolum lamina immaculata. . . 37. *A. minus*.
- △△ Foliolum lamina albo-vel flavo-maculata 38. *A. pictum*.
- △△△ Foliolum lamina albo-vittata. . . 39. *A. vittatum*.
- †† Foliolum lamina supra glaucescens. subtus ex glauco-purpurascens. 40. *A. immaculatum*.
- ** Foliolum lamina late ovata vel orbiculari-ovata. 41. *A. rotundum*.

1. **A. densinervium** Engl. in Engler's Bot. Jahrb. XXXVII. (1905) 134. — Caudex usque 1 m altus. Foliolum petiolus laminae dimidium superans, circ. 2,5 dm longus, usque 2 cm infra apicem late vaginatus, superne canaliculatus, lamina rigida, crassiuscula, subtus minute brunneo-punctulata, oblonga, circ. 3,5 dm longa, 1,5 dm lata, breviter acuminata, nervis lateralibus in folii parte superiore fere subaequalibus subparallelis, in parte inferiore secundariis quam primarii paullo tenuioribus. Cataphylla inflorescentiae linearia, 1,5—2,5 dm longa, apice concava et breviter apiculata, 1,5—2 cm lata. Pedunculi 5—6 inflorescentiam formantes, 2,5 dm longi. Spatha oblonga, circ. 6—7 cm longa, 3—4 cm lata. Spadix crassiusculus, stipite latere posteriore 5 mm, latere anteriore 1 cm longo suffultus. Pistilla pauca (6—7) semiglobosa, stigmate orbiculari coronata. Baccae oblongae, 7—8 mm longae, 5 mm crassae.

Provinz der Philippinen: Mindanao: Davao (Copeland im Government Herb. Manila n. 418. — Blühend im März 1904. — C. V. Piper in Herb. Bur. of sc. n. 466. — Fruchtend im Mai 1911), Camp Keithley, Lake Lanar (M. Str. Clemens), Mt. Malindang in der Prov. Misamis (E. A. Meams in Herb. Forestry Bur. n. 4774), Distrikt Zamboanga (Merrill in Herb. Bur. of science n. 8204. — Blühend Nov., Dez.); Luzon, Calanar in der Prov. Laguna (Mc. Gregor in Herb. Bur. of science, Manila n. 12404. — Fruchtend im Nov. 1910); Siguijor, um 450 m (E. D. Merrill in Herb. Bur. of science n. 7347. — Fruchtend im Sept. 1910).

Nota. Foliolum consistentia et nervatura cum *Aglaonemate oblongifolio* congruit, sed folia latiora, basi magis obtusa.

2. **A. novoguineense** Engl. in Engler's Bot. Jahrb. XXV. (1898) 25. — Caudex crassus, dense foliosus usque 2 cm crassus; foliolum petiolus ultra $\frac{3}{4}$ longitudinis late vaginatus, quam lamina paulum brevior, circ. 3 dm longus, inferne teres, superne late canaliculatus, lamina (pro genere maxima) oblonga, basi obtusa, apice obtusa vel breviter apiculata, 3,5—3,7 dm longa, medio circ. 1,6 dm lata, costa crassa sursum evanescente nervis lateralibus I. utrinque 5—7 quam reliqui validioribus arcuatim adscendentibus. Pedunculi quam spatha 4—5-plo longiores 1—1,5 dm longi. Spatha oblonga 5—6 cm longa, 2,5—3 cm lata, acumine 5 mm longo instructa. Spadix longiuscule (1 cm) stipitatus, crasse cylindricus dimidium spathae longitudine aequans; inflorescentia feminea pauciflora masculae fertili arcte contigua. Pistilla ovoidea 2 mm longa et crassa stigmate crasso 2,5 mm lato vertice concavo contigua. Baccae magnae oblongae ultra 2 cm longae, 1,5 cm crassae. — Fig. 3.

Papuasische Provinz: Neu-Guinea; Urwald bei Finschhafen (Lauterbach n. 21. — Blüh. und frucht. Mai 1890), Regenwald am oberen Gogol (Lauterbach n. 1360. — Blühend Nov. 1890); Oertzengebirge, um 100 m (Lauterbach, Kaiser-Wilhelmsland-Expedition n. 111), bei Suor Mana um 700 m (Lauterbach, Kaiser-Wilhelmsland-Expedition n. 325. — Fruchtend Juni 1896), Hatzfeldhafen (Warburg n. 20990), am Kaulo um 300 m (Schlechter n. 16764. — Fruchtend Nov. 1907), am Fuß des Bismarckgebirges um 300 m ü. M. (Schlechter n. 18490. — Blühend im Oktober 1908. — Herb. Berlin).

3. **A. oblongifolium** (Roxb.) Kunth, Enum. III. (1841) 55; Schott in Wiener Zeitschr. III. (1899) 892; Hook. f. Fl. Brit. Ind. VI. (1894) 528; Engl. in Engler's

Bot. Jahrb. XXV. (1898) 21. — *Calla oblongifolia* Roxb. Fl. ind. III. (1832) 516; Wight. Icon. t. 806. — *Calla nitida* W. Jack in Mal. Misc. I. (1820) 24, in Calcutta Journ. of nat. hist. IV. 43, p. 42. — *Aglaonema nitidum* Kunth, Enum. III.

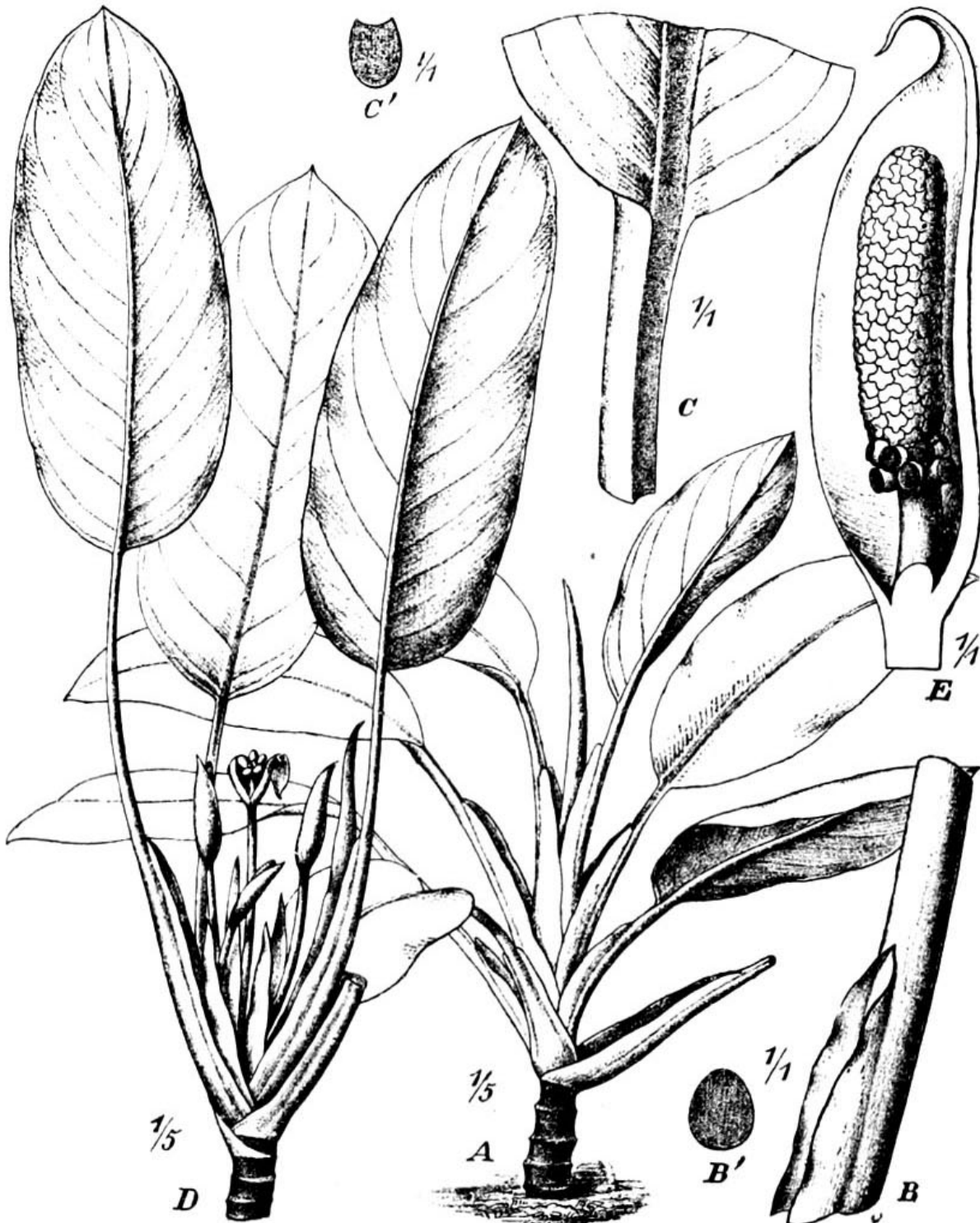


Fig. 3. *Aglaonema noroguineense* Engler. A Stirps juvenilis. B Hujus stirpis petiolus cum vagina. B' Hujus petioli sectio transversalis. C Hujus stirpis laminae basis et petioli pars superior. C' Hujus partis petioli sectio transversalis. D Stirpis adultae pars superior. E Inflorescentia spathae parte desumpta. — Icon. origin.

(1844) 76; Schott, Syn. (1856) 122, Prodr. (1860) 302; Engler in DC. Mon. Phan. II. (1879) 438. — *Arum integrifolium* Link, En. Hort. Berol. II. (1822) 394. — *Aglaonema integrifolium* Schott, Melet. I. (1832) 20. — Caulescens. Caudex usque

4 m et ultra longus internodiis brevibus. Foliorum petioli 1,5—2 dm longi, vagina utrinque 0,5—1 cm lata fere ad apicem usque instructi, pallidi, lamina 2—3 dm longa, 8—9 cm lata, supra atroviridis subtus pallidior, elongato-elliptica, basi apiceque subrepentino-angustata, breviter cuspidata, nervis lateralibus I. utrinque 7—8 angulo

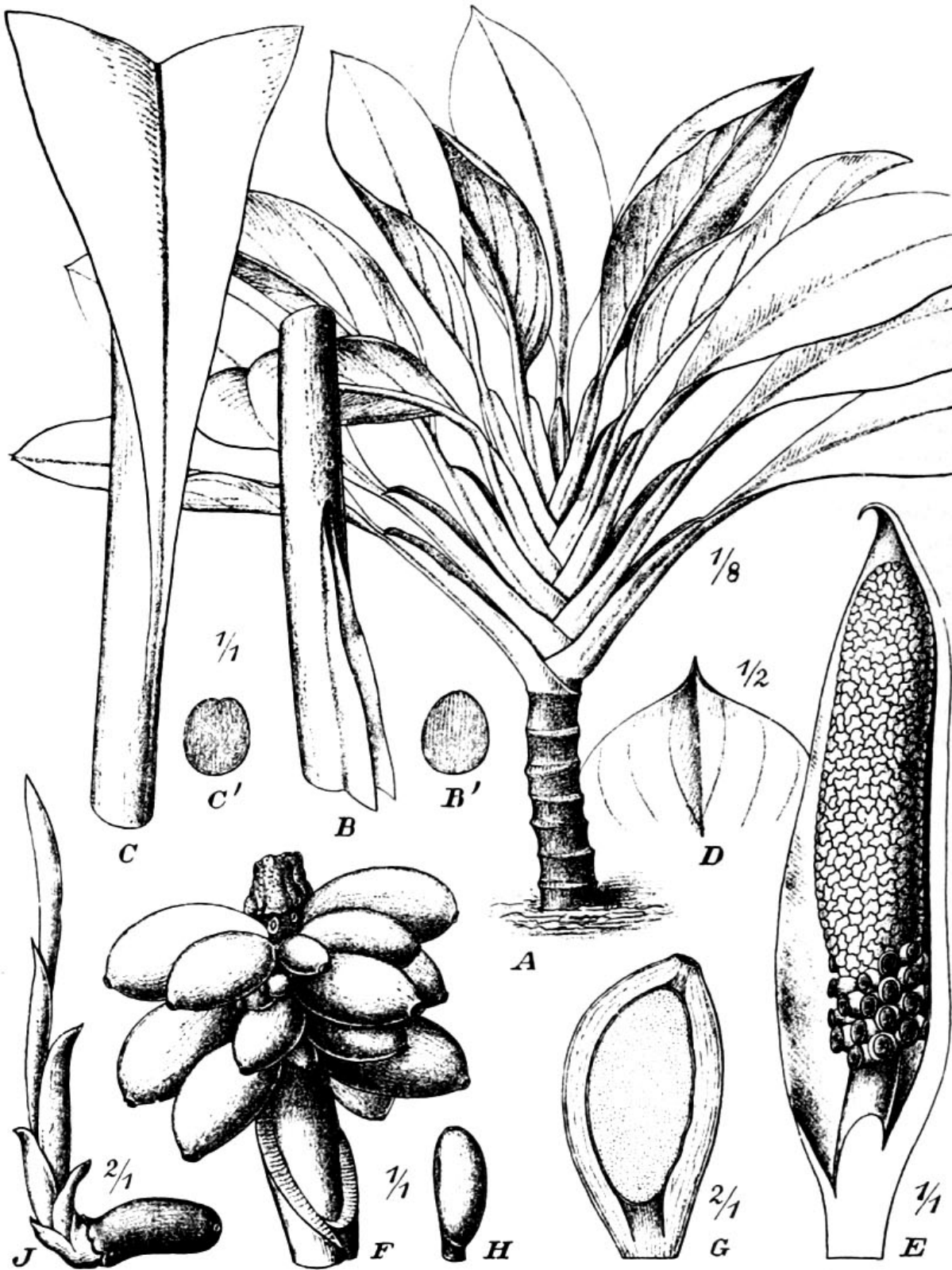


Fig. 4. *Aglaonema oblongifolium* Schott. A Stirps adulta nondum florens. B Petioli basis. B' Ejusdem sectio transversalis. C Laminae basis cum petiolo. C' Petioli partis superioris sectio transversalis. D Laminae apex. E Inflorescentia spathae parte desumpta. F Spadix fructifer. G Bacca cum semine longitudinaliter secta. H Semen cum funiculo. J Planta germinans. — Icon. origin.

acuto adscendentibus, longe prope marginem procurentibus. Pedunculi virides 4—4,5 dm longi, 4—5 mm crassi. Spatha 7—7,5 cm longa, acumine 0,5 cm longo instructa, 3,5 cm ampla, ovato-oblonga, breviter apiculata, flavo-virens. Spadicis spatham aequantis subsessilis inflorescentia feminea 4,5 cm longa atque crassa, mascula 5 cm longa, acutata. Ovaria breviter ovoidea, alba, stigmatibus discoideo luteo coronata, 3 mm longa. Baccae maturae 4,5 cm longae, 0,75 cm crassae, oblongae purpureae. — Fig. 4.

Südwestmalayische Provinz: Malakka: Pulo Penang (Jack, Wallich n. 8965), am Wasserfall (Curtis 1881, A. Engler); Perak, Taiping (Wray n. 2698. — Herb. Penang; Scortechini n. 218b. — Herb. Singapore), am Larut bis zu 100 m ü. M. (King's Collector in Herb. Calcutta n. 5652. — Blühend im März, Scortechini n. 218b), in der Ebene bei Taiping (Wray n. 2698. — Blühend im Aug. 1888, n. 3585. — Blühend im Mai 1889); Pahang, Kuala Tonok (Ridley. — Herb. Singapore); Selangor, Gua Batu (Ridley. — Herb. Singapore), Batu Caves bei Kuala Lumpur, um 100 m ü. M. (A. Engler, Reise nach Java und Brit. Ind. n. 5274. — Fruchtend im Febr. 1906); Linjga, Batu Gajah bis 600 m (Hullett. — Herb. Singapore); Sungei Ujong: Bukit Sulu (Ridley. — Herb. Singapore). — Singapore: Changi, Loyang, Bukit Mandai, Chan Chu kang usw. (Ridley. — Herb. Singapore), Insel Boeroe (S. Kurz. — Herb. Hort. Calcutta). — Borneo, Sarawak (Beccari n. 1279, 2054, Sarawak-Museum n. 1473), Bau (Ridley. — Herb. Singapore), Kuching (Haviland n. 972. — Herb. Singapore), an anderen Orten (Hallier f. n. 1769, 3034, 3350. — Herb. Buitenzorg).

4. **A. Helferi** Hook. f. Fl. Brit. Ind. VI. (1894) 529. — Caudex 2 dm et ultra longus, circ. 4 cm crassus, internodiis 1—2 cm longis. Foliorum petioli 1—1,5 dm longi, vagina circ. 5—6 cm longa, basi lata, sursum valde angustata instructi, lamina supra laete viridis, subtus pallidior, oblongo-lanceolata, basin et apicem versus aequaliter angustata, basi acuta, apice longe acuminata, circ. 2 dm longa, 5 cm lata costa haud valde crassa, nervis lateralibus I. utrinque 7—8 tenuibus angulo acuto adscendentibus quam nervi II. et III. paullum crassioribus. Pedunculi tenues 8—9 cm longi. Spatha 2,5—3 cm longa, 4 cm ampla. Spadix breviter (3 mm) stipitatus spatham aequans, 5 mm crassus, inflorescentia feminea 4—5 mm longa, mascula fere 2 cm longa, floribus infimis sterilibus. Pistilla ovoidea, stigmatibus lato fere 2 mm diametente instructa.

Nordwestmalayische Provinz: Tenasserim (Helfer n. 5994. — Herb. Kew), Pelui-Bay im Mergui Archipel (J. Anderson. — Herb. Hort. Calcutta).

5. **A. cochinchinense** Engl. n. sp. — Caudex circ. 4,5 cm crassus, dense foliatus, internodiis brevibus. Foliorum petiolus circ. 2 dm longus, vagina circ. 6 cm longa basi lata, sursum valde angustata instructus, lamina laete viridis, subtus pallidior, oblongo-elliptica basin versus linea curvata angustata, apice acutiuscula, 2,3—2,5 dm longa, 8,5 cm lata costa haud valde crassa, nervis lateralibus I. vix a primariis et secundariis distinctis. Pedunculi 1,2 dm longi. Spatha circ. 3 cm longa. Spadix spatham aequans. Baccae oblongae 2 cm longae, 4 cm crassae.

Hinterindisch-ostasiatische Provinz: Cochinchina (Pierre. — Herb. Paris, Berlin).

6. **A. Clarkei** Hook. f. Fl. Brit. Ind. VI. (1894) 529. — Caudex erectus haud crassus, cataphyllis et foliis approximatis. Foliorum petiolus tenuis, 2—2,2 dm longus, basi tantum vaginatus, lamina crassiuscula, oblongo-elliptico-lanceolata basi acuta, apice curvatim caudato-acuminata, 2—2,2 dm longa, 7—8 cm lata, costa haud valde crassa, nervis lateralibus I. tenuissimis vix a primariis et secundariis distinctis. Pedunculus tenuis, circ. 1,2 dm longus. Spatha ignota. Baccae elongato-oblongae, acutae, fere 3 cm longae, 4 cm crassae.

Nordwestmalayische Provinz: Chittagong: Kasalong (C. B. Clarke. — Herb. Kew).

Nota. Species imperfecte cognita, *Aglaonemati Helferi* affinis, at lamina apice curvatim caudato-acuminata et baccis elongatis diversa.

7. **A. pumilum** Hook. f. Fl. Brit. Ind. VI. (1894) 530. — Caudiculus brevis. Foliorum petiolus quam lamina fere triplo brevior, ad medium usque vaginatus, 5 cm longus, lamina tenuis ovato-lanceolata, 0,5—1,2 dm longa, triente inferiore 4 cm lata, sursum longe et sensim angustata, nervis lateralibus I. et II. subaequalibus tenuibus. Pedunculus 5 cm longus. Spadix ignotus. Baccae oblongae, 1,5 cm longae, 8 mm crassae.

Nordwestmalayische Provinz: Tenasserim, Chappedong Hill (Wallich, Cat. n. 8960B), Mergui (Griffith — Herb. Hort. Calcutta).

Nota. Specimina originalia hujus speciei valde incompleta sunt, attamen ad nullam aliam pertinent.

8. **A. marmoratum** Engl. n. sp. — Foliorum petiolus quam lamina fere 4-plo brevior, fere ad medium usque vaginatus, 3,5 cm longus, lamina supra obscure viridis, secus costam pallide marmorata, ovato-lanceolata, 1,2 dm longa, triente inferiore 3,5 cm lata, sursum longe et sensim angustata, nervis lateralibus I. et II. subaequalibus tenuibus. Spatha oblonga 3 cm longa, expansa 1 cm lata. Spadix cum stipite 5 mm longo 2 cm longus; inflorescentia feminea 3—4 mm longa, mascula 1 cm longa, 3 mm crassa.

Monsungebiet: Heimat unbekannt. Wurde im Bot. Garten zu Calcutta kultiviert und blühte daselbst im April 1896.

Nota. Species imperfecte cognita et fortasse cum priore, cujus inflorescentia ignota, conjugenda. Folia duarum specierum forma paulum differunt.

9. **A. costatum** N. E. Brown in Gardn. Chron. (1892) I. 426. — Caudiculus brevis, basi ramosus. Foliorum petiolus quam lamina brevior vel eam aequans, 0,5—1,5 dm longus, ad medium usque vaginatus, vagina mox destructa, lamina crassiuscula supra saturate viridis, subtus pallidior, immaculata vel vario modo albomaculata, ovata vel oblongo-ovata, basi obtusa vel emarginata, apice acuta, 1,2—2,2 dm longa, 7—11 cm lata, costa crassa, nervis lateralibus I. utrinque 5—10 valde arcuatis, nervis lateralibus II. tenuioribus et tertiariis tenuissimis. Pedunculi cataphyllis involuti 4—6 cm longi. Spatha 2—3 cm longa, convoluta 1 cm diametens, ex albo viridescens. Spadicis stipite 2—5 mm longo suffulti inflorescentia feminea perbrevis pauciflora, mascula 1,5—2 cm longa, 8—9 mm crassa. Pistilla breviter ovoidea, stigmatibus crasso orbiculari 2 mm diametente instructa. Baccae . . .

Nota. Speciei pulcherrimae varietates foliorum maculis diversae sequentes distinguuntur:

Var. **viride** Engl. — Folia viridia, haud maculata.

Südwestmalayische Provinz: Malakka, Perak (Kunstler. — Kult. im Bot. Garten Calcutta).

Var. **maculatum** Engl. — Folia supra atroviridia maculis albidis parvis dense notata.

Südwestmalayische Provinz: Insel Langkawi, Coah, am Fuß lehmiger Hügel (Curtis n. 2813. — März 1892. — Herb. Penang).

Var. **lineatum** Engl. — Folia supra atroviridia, costa albida.

Kultiviert im Bot. Garten Buitenzorg (A. Engler, Reise nach Java und Brit. Indien n. 4080).

Var. **Foxii** Engl. — Folia atroviridia, macula pallide viridi a costa utrinque irregulariter affluente notata.

Südwestmalayische Provinz: Malakka: Penang, Sonykal Gunong Toxai (Curtis in Herb. Penang).

var. **virescens** Ridley. — Folia atroviridia, maculis pluribus pallide virescentibus majoribus et minoribus notata.

Kultiviert im Bot. Garten Singapore (A. Engler, Reise nach Java und Brit. Indien n. 3814. — Herb. Berlin).

10. **A. Haenkei** (Presl) Schott in Bonplandia (1859) 30, Prodr. (1860) 304; Engl. in DC. Mon. Phan. II. (1879) 439. — *Scindapsus Haenkei* Presl, Epimel. Bot. (1849) 240. — Foliorum petioli 3—4 dm longi, ad medium vel ultra medium usque vagi-

nati, vagina sensim angustata, lamina oblongo-elliptica, basi subtruncata vel rotundata, apice subabrupte 1,5 cm longe acuminata, 2,5—4 dm longa, 1—1,75 dm lata, nervis lateralibus I. utrinque 5—7 patentibus, medio inter costam atque marginem sursum

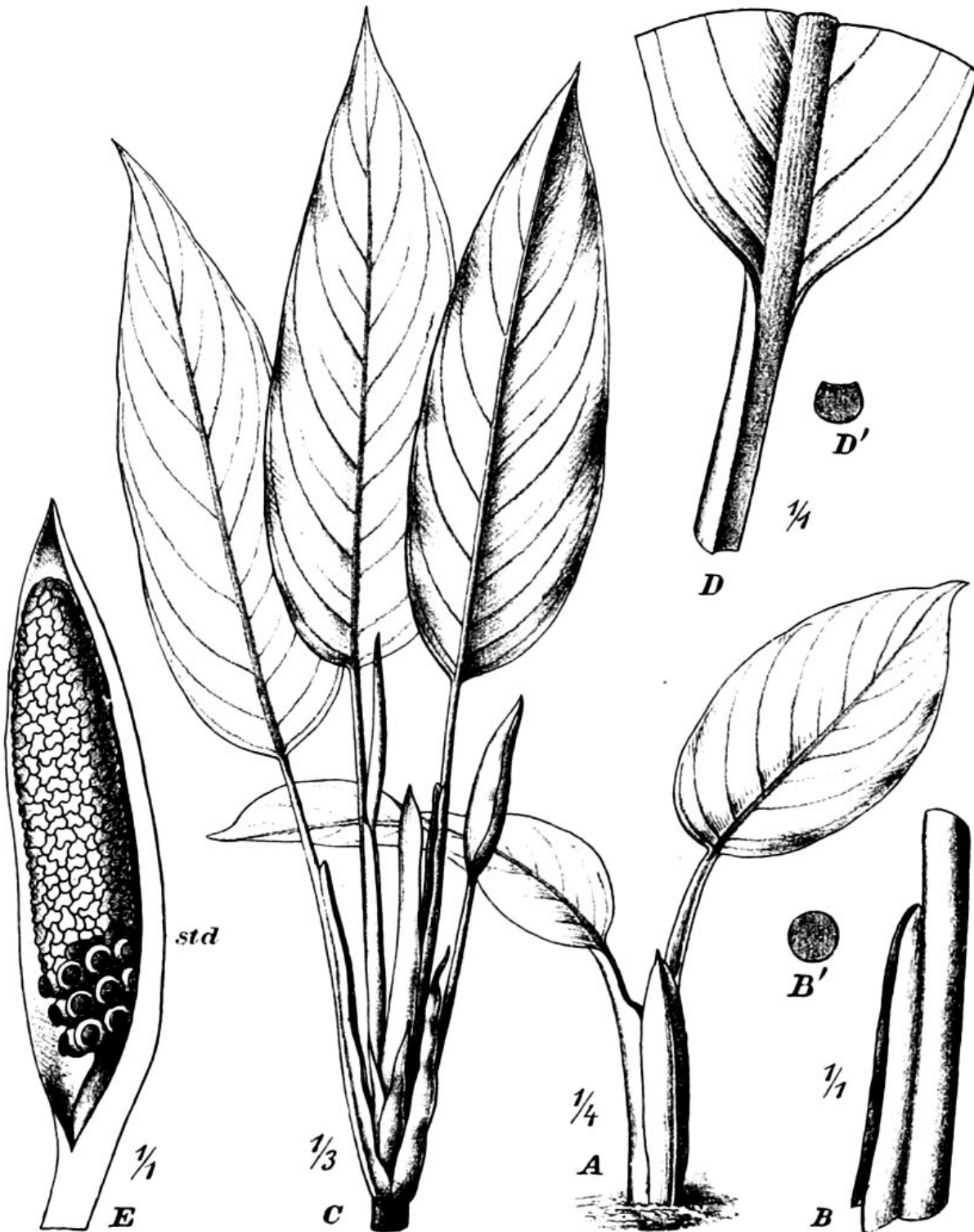


Fig. 5. *Aglaonema Treubii* Engl. A Planta juvenilis. B Hujus stirpis petiolus cum vagina. B' Petioli sectio transversalis. C Pars superior plantae adultae. D Folia hujus stirpis pars basalis. D' Ejusdem folii petiolus transversaliter sectus. E Inflorescentia aperta. — Icon. origin.

curvis. Pedunculi 2,5 dm longi, 2 mm tantum crassi. Spatha oblonga convoluta angusta, eleganter 0,5 cm longe acuminata, basi decurrens, 7 cm longa. Spadicis stipite 0,5—0,75 cm longo, in fructu 1,25—1,5 cm longo suffulti, 3,5 cm longi, cylindrici

inflorescentia feminea quam mascula 6—7-plo brevior. Ovaria ovoidea, stigmate discoideo coronata. Baccae oblongo-ovoideae.

Zentromalayische Provinz: Celebes (Herb. Leiden); Nord-Celebes: Minahasa, Kajoewatoe, um 500 m ü. M. (Koorders n. 16137. — Fruchttend im Februar 1895), Pahoe oere, um 700 m ü. M. (Koorders n. 16146. — April 1895. — Herb. Berlin).

Provinz Philippinen: Luzon, Prov. Albay (Cuming n. 863. — Herb. Kew), Insel Camiguin, Babayane (Herb. Manila, Bur. of sc. n. 4089. — Blühend Juni, Juli), Waragondong, Carite Provinz (Merrill in Herb. Bur. of Government Labor. n. 4186. — Blühend Juli 1905).

11. **A. Treubii** Engl. in Engler's Bot. Jahrb. XXV. (1898) 22 quoad descriptionem excl. speciminibus celebicis citatis. — Caudex 0,5—1 m altus apice dense foliatus. Foliorum petiolus laminae subaequilongus vel brevior circ. 1,5—1,6 dm longus, ad medium usque vel ultra vaginatus, lamina crassa supra obscure viridis, maculis cinereis valde irregularibus juxta costam notata, oblonga inaequilatera, basi obtusa, acuminata acuta, 2—3 dm longa, 0,7—1,2 dm lata, altero latere alterius circ. $\frac{3}{4}$ latitudine aequante, nervis lateralibus I. utrinque circ. 8 angulo circ. 30—40° a costa abeuntibus, deinde valde adscendentibus quam nervi II. paullum validioribus. Pedunculi petiolos aequantes, crassi circ. 1,5 dm longi. Spatha oblonga, acuminata, 6—7 cm longa, 3,5 cm lata, acumine 5 mm longo instructa, inflorescentia feminea pauciflora, mascula inferne sterili. Spadix stipite 1 cm longo suffultus, circ. 4 cm longus, fere 2 cm crassus. Staminodia 3 mm, stamina 2 mm lata. Pistilla valde depressa, stigmate crasso orbiculari medio excavato 2,5 mm diametiente instructa. Staminodia quam stamina crassiora. Baccae oblongae, fere 2 cm longae, vix 1 cm crassae. — Fig. 5.

Monsungebiet: Bot. Garten Buitenzorg.

12. **A. nebulosum** N. E. Brown in Illustr. Hortic. XXXI. (1887) 67 t. 24. — Caudex erectus internodiis distinctis. Foliorum petiolus 3,7—5 cm longus, supra canaliculatus ad $\frac{1}{3}$ vel fere ad medium usque vaginatus, lamina supra maculis nebulosis albo-viridibus irregulariter picta, oblonga vel obovato-oblonga basi obtusata, apice oblique cuspidato-acuminata, 1,3—2 dm longa, 3,7 cm lata, nervis lateralibus I. utrinque 9—13 adscendentibus curvatis.

Als Heimat wird Java angegeben; ich habe aber bis jetzt von dort weder spontane noch kultivierte Exemplare gesehen.

Nota. Species imperfecte cognita.

13. **A. Robelinii** (Lind.) Gentil, Pl. cult. Serres Jard. bot. Brux. 44 (1907), nomen. — *Schismatoglottis Robelinii* Linden. — Planta valde robusta, caudiculis erectis, usque 2 cm crassis ramosis et dense foliatis. Foliorum petiolus 1,5—2 dm longus, 0,5—1 cm crassus, ultra medium usque vaginatus, lamina crassa, obscure viridis et irregulariter cinereo-maculata, subtus pallidior, late oblonga vel oblonga, 2—2,5 dm longa, 1—1,2 dm lata, basi obtusa, apice subacuta, haud acuminata, costa crassa, nervis lateralibus I. utrinque 6—7 angulo circ. 60° patentibus, prope marginem adscendentibus. Pedunculi breves 5—6 cm longi. Spatha oblonga 6 cm longa, 2 cm ampla, viridescens. Spadicis stipite fere 1 cm longo suffulti spatham aequantis inflorescentia feminea perbrevis, mascula elongata circ. 4 cm longa, 7—8 mm crassa. Pistilla breviter ovoidea, stigmate orbiculari 1,5 mm diametiente instructa. — Fig. 6.

Zentromalayische Provinz. Genaueres ist über die Herkunft nicht bekannt.

Lusus *pseudobracteosum*. — Flores feminei staminodiis 2—3 bracteiformibus viridescensibus, pistil-

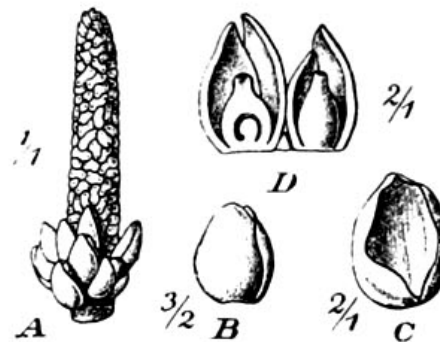


Fig. 6. *Aglaonema Robelinii* (Lind.) Gentil, lusus *pseudobracteosum*. A Spadix. B Flos femineus monstruosus. C Staminodium bracteiforme. D Flores feminei staminodio uno remoto. — Icon. origin.

lum \pm superantibus instructi. Staminodia majora, imprimis axim spectantia ovato-conchiformia basi pistillum amplectentia, 5—6 mm longa, 4 mm lata. — Fig. 6.

Im Bot. Garten von Berlin-Dahlem beobachtet.

14. **A. Warburgii** Engl. n. sp. — Caudex apice dense foliatus. Foliorum petiolus quam lamina $1\frac{1}{2}$ -plo longior, circ. 2,2 dm longus, 3—5 mm crassus, ad medium usque vaginatus, lamina obscure viridis, maculis cinereis irregularibus supra notata, subtus pallida, late oblonga, circ. 1,8 dm longa, 8 cm lata, costa crassa, nervis lateralibus I. utrinque 6—7 arcuatim adscendentibus. Pedunculus tenuis petioli dimidium aequans, 1 dm longus. Spatha oblonga 3 cm longa, convoluta 1 cm ampla. Spadicis stipite 5 mm longo suffulti inflorescentia feminea circ. 5 mm longa, mascula cylindrica paullum ultra 1 cm longa, 4 mm crassa.

Zentromalayische Provinz: Nord-Celebes, Menado (Warburg. — Herb. Berlin).

Nota. Species valde affinis priori, at satis diversa petiolis et pedunculis tenuibus, spatha et spadice brevioribus.

15. **A. Schottianum** Miq. Fl. Ind. bat. III. (1859) 316, in Bot. Zeitg. (1856) 565; Schott, Prodr. (1860) 303; Engl. in DC. Mon. Phan. II. (1879) 440; Hook. f. Fl. Brit. Ind. VI. (1894) 529. — *A. longecuspdatum* Schott, Prodr. (1860) 303, Engl. l. c. 440. — *A. propinquum* Schott in Ann. Mus. lugd. bat. I. (1863—1864) 280. — Foliorum petioli 1—1,5 dm longi, superiores longe ultra medium latiuscule vaginati, lamina 1,5—2 dm longa, 6—7 cm lata, oblique oblongo-lanceolata, inaequilatera, basim versus paullum angustata, basi altero latere acuta, altero rotundata, apice subabrupte in acumen 1,5—2 cm longum contracta, nervis lateralibus I. utrinque 5—6 adscendentibus, longe juxta marginem procurrentibus, in margine superiore exeuntibus. Pedunculi floriferi 0,5—0,75 dm longi, fructiferi 1 dm longi. Spatha oblongo-elliptica circ. 4 cm longa, 2 cm lata, acumine 2—3 mm longo instructa. Spadicis cylindrici tenuis stipes circ. 0,5 cm, fructifer 1 cm et ultra longus, inflorescentia feminea 3—4 mm, mascula circ. 1,5 cm longa. Ovaria pallide virentia, stigmatibus flavescentibus, vix profunde excavatis coronata. Baccae anguste cylindricae 0,75—1 cm longae, 2 mm crassae.

Var. **genuinum** Engl. — Foliorum lamina latitudine sua 5—7-plo longior.

Südwestmalayische Provinz: Malakka (Griffith n. 5984, 5985); Pulo Langkawi (Curtis n. 2636, 2679. — Herb. Singapore); Penang (Curtis n. 1721. — Herb. Singapore); Perak: Maxwells Hills, um 1000 m (A. Engler, Reise nach Java und Brit. Indien n. 5313. — Herb. Berlin); Selangor: Wells Hiñ bei Kuala Lumpur, im Regenwald, um 50 m ü. M. (A. Engler, Reise nach Java und Brit. Indien n. 5298. — Februar 1906). Singapore: Chan Chu Kang (Ridley. — Herb. Singapore); Changi (Ridley. — Herb. Singapore), Botanischer Garten, spontan, mit Übergängen zur Var. *angustifolium* (Ridley, Engler, Reise nach Java und Brit. Indien n. 3861, 3891. — Fruchttend im Dez. 1905), Pulo Ubin (Ridley), Pulo Brom (Ridley); Bukit Timah mit Übergängen zur Var. *angustifolium* (Engler n. 3848. — Dez. 1905). — Borneo: Jamburan (Ridley. — Herb. Singapore), Lundu, Matang (Ridley. — Herb. Singapore), Saravak (Beccari n. 1615); Süd-Borneo (Korthals in Herb. Leiden). — Java, Kapangdungor (Blume. — Herb. Leiden), ohne Fundort (Zollinger, Pl. jav. n. 695B). — Ost-Sumatra (Teijsmann. — Herb. Buitenzorg); Sumatra, um 130 m (H. O. Forbes n. 1259. — Herb. Hort. Calcutta. — Übergang zur Var. *angustifolium*).

forma *angustifolium* (N. E. Brown) Engl. — *Aglaonema angustifolium* N. E. Brown in Kew Bull. (1895) 48. — Foliorum lamina latitudine sua 8—10-plo longior.

Südwestmalayische Provinz: Malakka, Perak (Scortechini, Wray n. 3123. — Herb. Hort. Calcutta), um 100—160 m (King's Collector n. 6158. — Fruchttend im Mai); Johore, Gunong Taning (Herb. Singapore), Chan-Chu-Kang (Ridley n. 1647. — Herb. Singapore).

Var. **Brownii** (Prain) Engl.
— Foliorum lamina angusta,
lineari-lanceolata, margine cri-
spula.

Malakka: Perak, Dinding
(Ridley n. 9508, 10144. —
Herb. Singapore, Calcutta).

Var. **malaccense** (Schott)
Engl. — *A. malaccense* Schott
in Bonplandia (1859) 30, Prodr.
(1860) 502. — Foliorum la-
mina oblique oblonga latitudine
sua circ. triplo longior.

Nordwestmalayische
Provinz: Burma: Pegu (Wal-
lich. — Herb. Kew), Tonk-
geghat (S. Kurz n. 263. —
Herb. Hort. Calcutta), Karen
(S. Kurz n. 2664. — Herb.
Hort. Calcutta); Martaban (S.
Kurz n. 263. — Herb. Cal-
cutta). Tenasserim (Wal-
lich, Cat. n. 8961. — Herb.
Kew, Helfer n. 5992. — Herb.
Hort. Calcutta), Moulmein (Fal-
coner n. 327. — Herb. Hort.
Calcutta).

Südwestmalayische
Provinz: Malakka: Perak,
Maxwell Hills, um 1000 m
(Wray n. 2828. — Herb. Singa-
pore, Scortechini n. 1196. —
Herb. Hort. Calcutta).

Var. **Winkleri** Engl. —
Foliorum lamina lineari-oblonga,
basi late rotundata vel subtrun-
cata usque 2,6 dm longa, 4,5—
5 cm lata. — Fig. 7.

Südost-Borneo: Zwi-
schen M. Uja und Kundimbaru
(Hub. Winkler n. 2727. —
Blühend im Juli 1908).

16. **A. siamense** Engl. in
Bot. Tidsskr. XXIV. (I. 1902)
173 (275). — Caudiculus su-
perne dense foliatus usque 4 dm
longus inferne 2 cm crassus.
Foliorum superiorum petiolus
laminae subaequilongus subte-
res, superne antice leviter cana-
liculatus circ. 1,5 dm longus,
superne 4 mm crassus, ultra
medium late vaginatus, lamina
crassiuscula, ovato-oblonga, basi

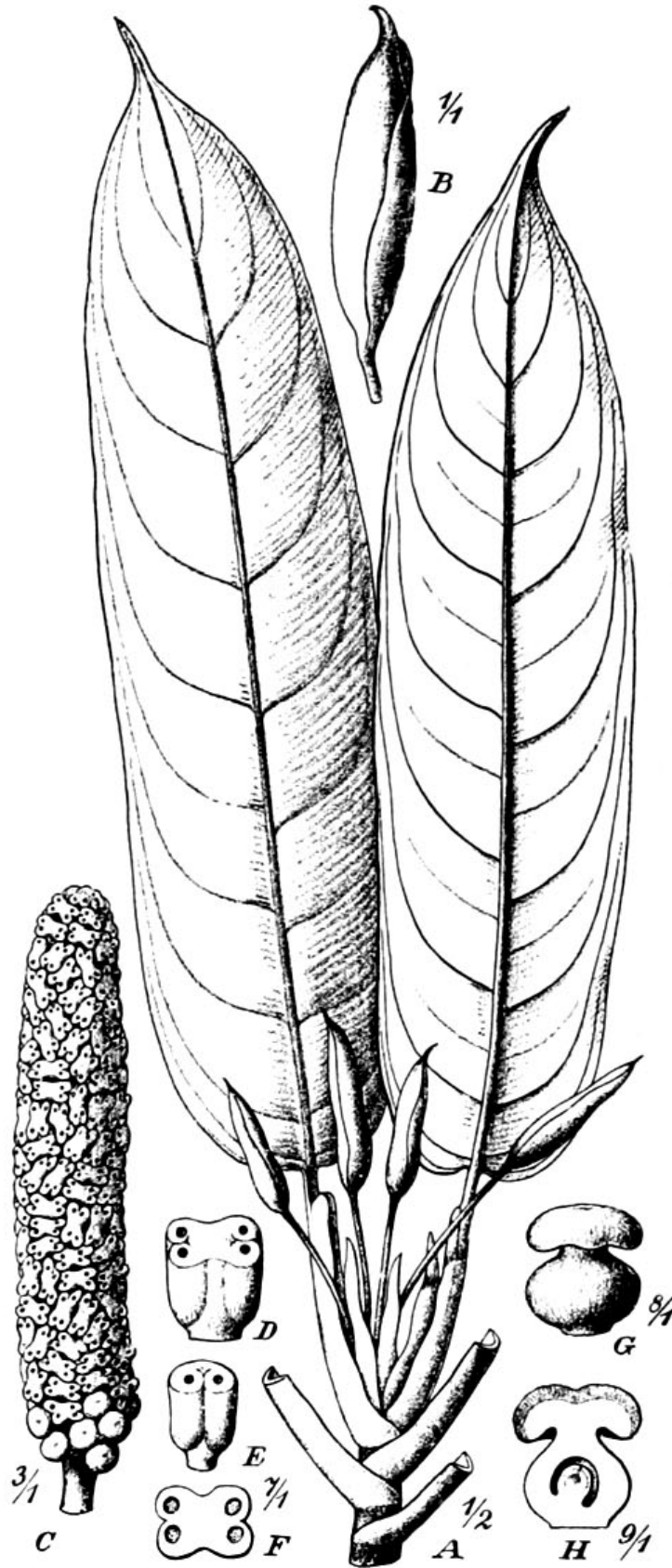


Fig. 7. *Aglaonema Schottianum* Miq. var. *Winkleri* Engl.
A Habitus. B Spatha C Spadix. D Stamen. E Stami-
nodium. F Anthera transversaliter secta. G Pistillum.
H Pistilli sectio longitudinalis. — Icon. origin.

obtusa vel leviter emarginata, acuminata, 2—2,5 dm longa, 2,5 cm lata, costa semitereti et nervis lateralibus I. arcuatim adscendentibus subtus prominentibus, supra insculptis nervis lateralibus III. subtus haud distincte apparentibus. Pedunculi 2—3 petioli circ. $\frac{1}{3}$ aequantes. Spatha ovata. Spadix stipite 5—7 mm longo suffultus, inflorescentia feminea 7 mm longa et crassa. Baccae ovoideae 8 mm longae, 6 mm crassae.

Hinterindisch-ostasiatische Provinz: Siam, im dichten Regenwald bei Lem Dan (Johs. Schmidt in Danske Siamexpedition 1899—1900 n. 90. — Herb. Kopenhagen).

17. **A. borneense** Engl. n. sp. — Caudiculus circ. 5 dm longus apice dense foliatus. Foliorum petiolus quam lamina brevior, circ. 4 dm longus, ad $\frac{4}{5}$ longitudinis vaginatus, lamina crassiuscula, supra saturate viridis, subtus pallidior, oblongo-lanceolata basi subacuta vel oblique oblonga basi obtusa 2—3 cm longe acuminata, 2,5—3 dm longa, 0,8—1,2 dm lata, costa crassiuscula, nervis lateralibus I. utrinque 7 angulo acuto abeuntibus prope marginem adscendentibus validis, nervis lateralibus II. interjectis tenuioribus atque nervis III. inter se 1,5 mm remotis subtus prominuis. Pedunculi tenues 6—7 cm longi. Spatha elongata cylindrica convoluta 5 cm longa. Spadix stipite 5—6 mm longo suffultus, paullum ultra 2,5 cm longus; inflorescentia feminea quam mascula cylindrica 4-plo brevior.

Südwestmalayische Provinz: Borneo (Bot. Gart. Buitenzorg. — Blühend im Januar 1906. — A. Engler, Reise nach Java und Brit. Indien n. 4089).

Nota. Species priori similis differt nervis lateralibus III. subtus distincte apparentibus atque lamina longissime acuminata.

18. **A. simplex** Blume in Rumphia I. (1835) 152 t. 65 et 36D; Schott, Syn. (1856) 122, Prodr. (1860) 305; Miq. Fl. Ind. bat. III. (1859) 216; Engl. in DC. Mon. Phan. II. (1879) 439 et Arac. exsicc. et illustr. n. 288. — *Caladium simplex* Blume, Cat. Hort. Buitenzorg (1823) 103. — *A. princeps* Kunth, Enum. III. (1841) 55. — *A. fallax* Schott in sched. — *A. gracile* Schott in sched. Herb. Lugd. bot. — Caudex 0,5—1 m altus, circ. 3 cm crassus, inferne subhorizontalis et radicans, deinde arrectus, internodiis longulis. Foliorum petioli 4—2 dm longi, vagina lata 0,75—1,5 dm longa instructi, lamina 1,75—3 dm longa, 5—9 cm lata, obscure viridis, oblongo-lanceolata, basi rotundata vel subacuta, apicem versus sensim in acumen longiusculum angustata, margine leviter undulata, nervis lateralibus I. utrinque 6—8 prominentibus, angulo acuto adscendentibus. Pedunculi 0,75 dm longi. Spatha 5 cm longa acumine 3 mm longo instructa, expansa 3 cm lata, late obovata, extus flavo-virens, intus albida. Spadicis 4 mm longe stipitati, crassi tandem spatham paullo superantis inflorescentia feminea circ. 4 cm, mascula 4 cm longa, 1,3 cm crassa. Ovaria breviter ovoidea, viridia, stigmatate latiusculo disciformi, medio excavato luteo coronata. Baccae oblongae, miniatae, plurimae in capitulum congestae, 1—1,25 cm longae, 5—6 mm crassae.

Südwestmalayische Provinz: Djarina (Herb. Buitenzorg). Banka (S. Kurz. — Herb. Hort. Calcutta); Java, in den Regenwäldern, besonders auf Kalkboden, bei Kuripun und Tjampia, auf dem Salak bei Kapandangang und Gedogang (Blume), bei Tjanjor* (Reinwardt), Batavia, Denok (Koorders n. 31125, 31126), Djapara, Djoewane (Koorders n. 32000, 33472, 33474, 34995), Madioen, Ponorajo (Koorders n. 30105), Preanger, Garoet (Koorders n. 2673), Bandjarnegara (Koorders n. 33905), Pekalonjan (Koorders n. 26240), Semarang-Selo (Koorders n. 26105), Besocki, Djember (Koorders n. 20336, 20674, 20700, 30004. — Herb. Buitenzorg). — Sumatra, Batoe-Inseln (Raap n. 389. — Herb. Buitenzorg).

Borneo: Soengei magne (Nieuwenhuis n. 1567. — Herb. Buitenzorg), Kwalo Kapuas (Grabowski. — Blühend im Sept. 1881. — Herb. Berlin), Sarawak (Sarawak Mus. n. 336 in Herb. Bureau of science, Manila).

forma *macrophyllum* Engl.

Nord-Celebes: Ratatotok, um 200 m ü. M. (Koorders n. 16179. — Fruchttend April 1895); Minahassa usw. (Koorders n. 16126, 16129, 16155); Kandari (Beccari).

Provinz der Philippinen: Jolo (Warburg n. 14984. — Herb. Berlin).

Hinterindisch-ostasiatische Provinz: Cochinchina, Cambodscha, am Pursat (Godefroy in Exped. Harmand n. 316. — Herb. Mus. Paris).

19. *A. subfalcatum* Engl. n. sp. — Caudiculus circ. 4 cm crassus, apice dense foliatus. Foliorum petiolus laminae circ. $\frac{3}{4}$ aequans basi late, ultra medium longe vaginatus, 0,8—1 dm longus, lamina crassiuscula laete viridis subtus pallidior, oblique lanceolata subfalcata, valde inaequilatera, altero latere $1\frac{1}{2}$ -plo latiore, imo breviter



Fig. 8. *Aglaonema Pierreanum* Engl. Habitus. — Icon. origin.

cuneato, altero latere basi obtuso, apicem versus sensim angustata, acuta, circ. 2 dm longa, a triente inferiore 6—7 cm lato sursum angustata acuta, nervis lateralibus I. angulo circ. 30° a costa abeuntibus adscendentibus, nervis lateralibus II. et III. tenuibus primariis haud exacte parallelis. Pedunculi plures tenues petiolorum dimidium paullum superantes 4—5 cm longi. Spatha conchiformis obovoidea pedunculo decurrens, pallida 3 cm longa, 1,5 cm ampla. Spadix stipite tenui 4 cm longo maxima parte spathae adnato suffultus, circ. 2,5 cm longus, inflorescentia feminea claviformi obtusa 2 cm longa, superne 4 cm crassa.

Hinterindisch-ostasiatische Provinz: Cochinchina?

Nota. Haec species in horto Musei Parisiensis culta mecum communicata est. Foliorum forma ad speciem sequentem tantum accedit, itaque existimo eam e Cochinchina introductam esse. Differt ab *Aglaonemate Pierreano* foliorum lamina basi haud cordata.

20. **A. Pierreanum** Engl. n. sp. — Caudiculus erectus ramosus internodiis abbreviatis. Foliorum petiolus quam laminae dimidium longior ultra medium vaginatus, circ. 1 dm longus, lamina supra obscure viridis, subtus pallidior, oblique oblonga vel oblique lanceolata subfalciformis, valde inaequilatera, latere altero $\frac{1}{4}$ latiore, basi emarginata vel subcordata, longe acuminata, 1,5—2 dm longae, inferne 6—8 cm lata, costa crassiuscula, nervis laterali-

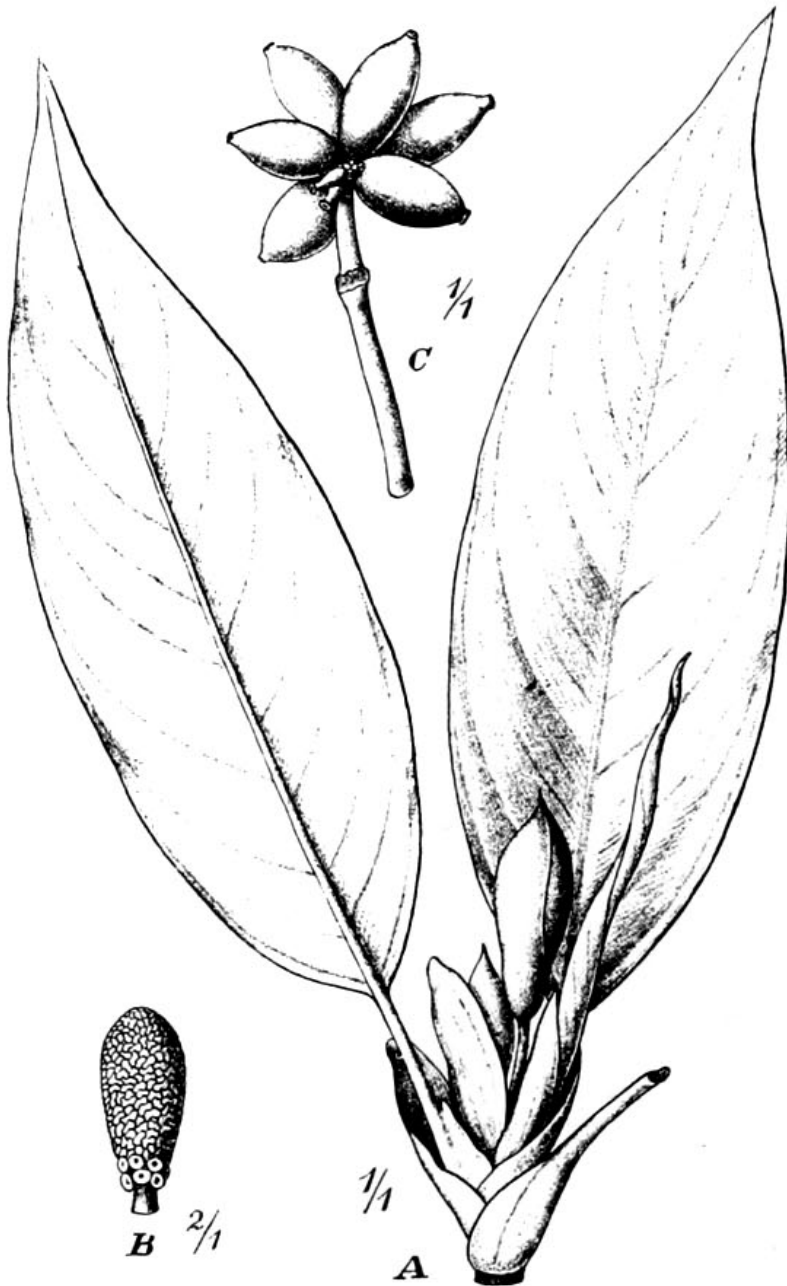


Fig. 9. *Aglaonema nanum* Hook. f. A Habitus. B Spadix. C Spadix fructifer. — Icon. origin.

apice breviter acuminata acuta, 7—10 cm longa, 3—4 cm lata nervis lateralibus I. utrinque 6—7 angulo circ. 50° abeuntibus arcuatim adscendentibus. Pedunculus brevis 2 cm longus. Spatha ignota. Baccae ovoideae, 1 cm longae, 8 mm crassae.

Südwestmalayische Provinz: Malakka, Perak (Scortechini n. 2556. — Herb. Mus. Perak, Hort. Calcutta).

Nota. Species imperfecte cognita, attamen facile recognoscenda, a sequente differt foliis brevioribus, breviter acuminatis et nervis minus arcuatis, baccis ovoideis, haud oblongis.

22. **A. nanum** Hook. f. Fl. Brit. Ind. VI. (1894) 530. — Caudiculus 1,5—2 dm longus, densiuscule foliatus, internodiis 0,5—1 cm longis. Foliorum petiolus tenuis

erectus ramosus internodiis abbreviatis. Foliorum petiolus quam laminae dimidium longior ultra medium vaginatus, circ. 1 dm longus, lamina supra obscure viridis, subtus pallidior, oblique oblonga vel oblique lanceolata subfalciformis, valde inaequilatera, latere altero $\frac{1}{4}$ latiore, basi emarginata vel subcordata, longe acuminata, 1,5—2 dm longae, inferne 6—8 cm lata, costa crassiuscula, nervis laterali-

bus I. utrinque circ. 7 validis angulo circ. 60° a costa abeuntibus valde curvatim adscendentibus, nervis II. tenuioribus et nervis III. tenuissimis. Pedunculi plures cataphyllis 4—5 cm longis involuti circ. 4 cm longi. Spatha ovata 2 cm longa, medio convoluta 1 cm ampla demum spadice paulum superata, viridi-flava. Spadix stipite 2—3 mm longo suffultus crasse cylindricus 2 cm longus; inflorescentia feminea brevis vix 4 mm longa, mascula 1,8 cm longa, 6 mm crassa. Baccae oblongae fere 1,5 cm longae, 0,5 cm crassae. — Fig. 8.

Hinterindisch-ostasiatische Provinz: Cochinchina, in Wäldern um Bunhoor (Harmand n. 1936 in Herb. L. Pierre. — Fruchtend im März 1877); ohne speziellen Fundort, um 500 m (L. Pierre. — Herb. L. Pierre, Paris, Berlin).

21. **A. Scortechinii** Hook. f. Fl. Brit. Ind. VI. (1894) 530. — Caudiculus 2—2,5 dm tantum altus, 3—4 mm crassus, internodiis 0,5—1 cm longis. Foliorum petiolus tenuis lamina brevior, 2—5 cm longus, lamina tenuis ovato-vel oblongo-elliptica, basi obtusa,

lamina 3—4-plo brevior, 2—4 cm longus, ad 1,5 cm longitudinis vaginatus, lamina oblonga, basi acuta, longe acuminata, 1—1,3 dm longa, 3—4 cm lata, nervis lateralibus I. utrinque 5—6 angulo 30° a costa abeuntibus arcuatim adscendentibus. Pedunculi tenues 2—3 cm longi. Spatha obovata breviter acuminata 1,5—2 cm longa, 8 mm ampla, pallide viridi-flavescens. Spadix stipite 1,5—2 mm longo suffultus, claviformis 7—8 mm longus, superne 4 mm crassus, basin versus attenuatus. Baccae oblongae 1—1,2 cm longae, 5 mm crassae. — Fig. 9.

Südwestmalayische Provinz: Malakka, Perak, in dichten Bambuswäldern um 130—200 m ü. M. (King's Collector n. 10421. — Blühend im Juli 1886. — Herb. Hort. Calcutta, Kew, Berlin).

Singapore: Bukit Timah (Ridley. — Herb. Berlin).

23. **A. Hookerianum** Schott in Bonpl. VII. (1859) 30, Prodr. (1859) 304; Engl. in DC. Monogr. Phan. II. (1879) 438; N. E. Brown in Gardn. Chron. (1882) 333; Hook. f. Fl. Brit. Ind. VI. (1894) 529. — Foliorum petioli 1,75—2 dm longi, vagina 1,25—1,5 dm longa instructi, lamina circ. 2,5—3 dm longa, in acumen 1,5—2 cm longum angustata, 8—10 cm lata, oblongo-elliptica, basi rotundata vel subacuta, nervis lateralibus I. utrinque 7—9 angulo acuto adscendentibus, longe prope marginem procurrentibus. Pedunculi 0,75—1 dm longi, tenues. Spatha 3 cm longa, 1 cm ampla, elliptica acuta. Spadix sessilis.

Nordwestmalayische Provinz: Khasia, um 600—1000 m (Griffith, Hook. f. et Thoms. — Herb. Kew, Berlin etc.), Changril: Lushai Hill (Praser, Lestie n. 306. — Herb. Hort. Calcutta), Cachar (Keenan in Herb. Kew), Lakhipur am Barak (Gage. — Fruchttend im August. — Herb. Hort. Calcutta), Chittagong, bei Sutakoond (Hook. f. et Thoms), Hazarikhil (Hooper. — Herb. R. E. P. Calcutta. — Fruchttend), Burkul (Lister. — Herb. Hort. Calcutta), Azakan (S. Kurz. — Herb. Kew), bei Buthidamy (J. H. Burkill. — Herb. R. E. P. Calcutta n. 28046. — Blühend), Duphla Hills (Lister n. 22. — Herb. Hort. Calcutta), Baronga-Insel, häufig im Bergwald auf Sandstein (S. Kurz. — Herb. Hort. Calcutta).

24. **A. birmanicum** Hook. f. Fl. Brit. Ind. VI. (1894) 529. — Caudex 3—5 dm longus, 1 cm crassus, internodiis 1—2 cm longis. Foliorum petiolus laminae $\frac{1}{3}$ — $\frac{1}{2}$ aequans, raro ei aequilongus, ad medium usque anguste vaginatus, 0,6—1,5 dm longus, lamina membranacea, subtus pallidior, oblongo-lanceolata basi subacuta, apicem versus leviter curvata longe acuminata, acuta, 1,8—2,3 dm longa, 4,5—6 cm lata, acumine 2 cm longo instructa, nervis lateralibus I. utrinque 4—5 angulo circ. 30—40° a costa abeuntibus arcuatim adscendentibus. Pedunculus 2 cm longus. Spatha lineari-oblonga, 4 cm longa, convoluta cylindrica, 6—7 mm ampla. Spadix stipite 2 mm longo suffultus, 2,5 cm longus, 3—4 mm crassus.

Nordwestmalayische Provinz: Ober-Burma, in niedrigen Wäldern gegen Nerupean (Griffith. — Herb. Kew); Manipur: Sarpung, Nagaberge, um 1600 m (A. Meebold n. 7482, 9233. — Herb. Breslau).

25. **A. tenuipes** Engl. in Bot. Tidsskr. XXIV. (I. 1902) 173 (275). — Caudiculus tenuis, foliis approximatis. Foliorum petiolus tenuis quam lamina brevior, vix ad tertiam partem usque vaginatus circ. 1 dm longus, lamina membranacea, oblique lanceolata, inaequilatera, basi subacuta, apice leviter curvato acuminato acuto, circ. 1,7—1,8 dm longa, 5—6 cm lata. Cataphylla 2—4 cm longa nervis lateralibus I. utrinque 4—5 leviter arcuatis adscendentibus pedunculum brevem et spatham involventia. Pedunculus 2,5 cm longus. Spatha oblonga acuminata circ. 1,8 cm longa, convoluta 8 mm ampla. Spadicis stipes 3 mm longus, inflorescentia feminea 2 mm, mascula cylindrica, subobtusa, 7 mm longa, 3 mm crassa. Pistilla breviter ovoidea stigmatate crasso discoideo coronata.

Hinterindisch-ostasiatische Provinz: Siam, im dichten Regenwald bei Lem Dan (Johs. Schmidt. — Herb. Kopenhagen).

Nota. Species habitu paullum ad *Aglaonema simplex* accedit, sed differt petiolis tenuioribus et longioribus, brevius vaginatis, inflorescentia parva.

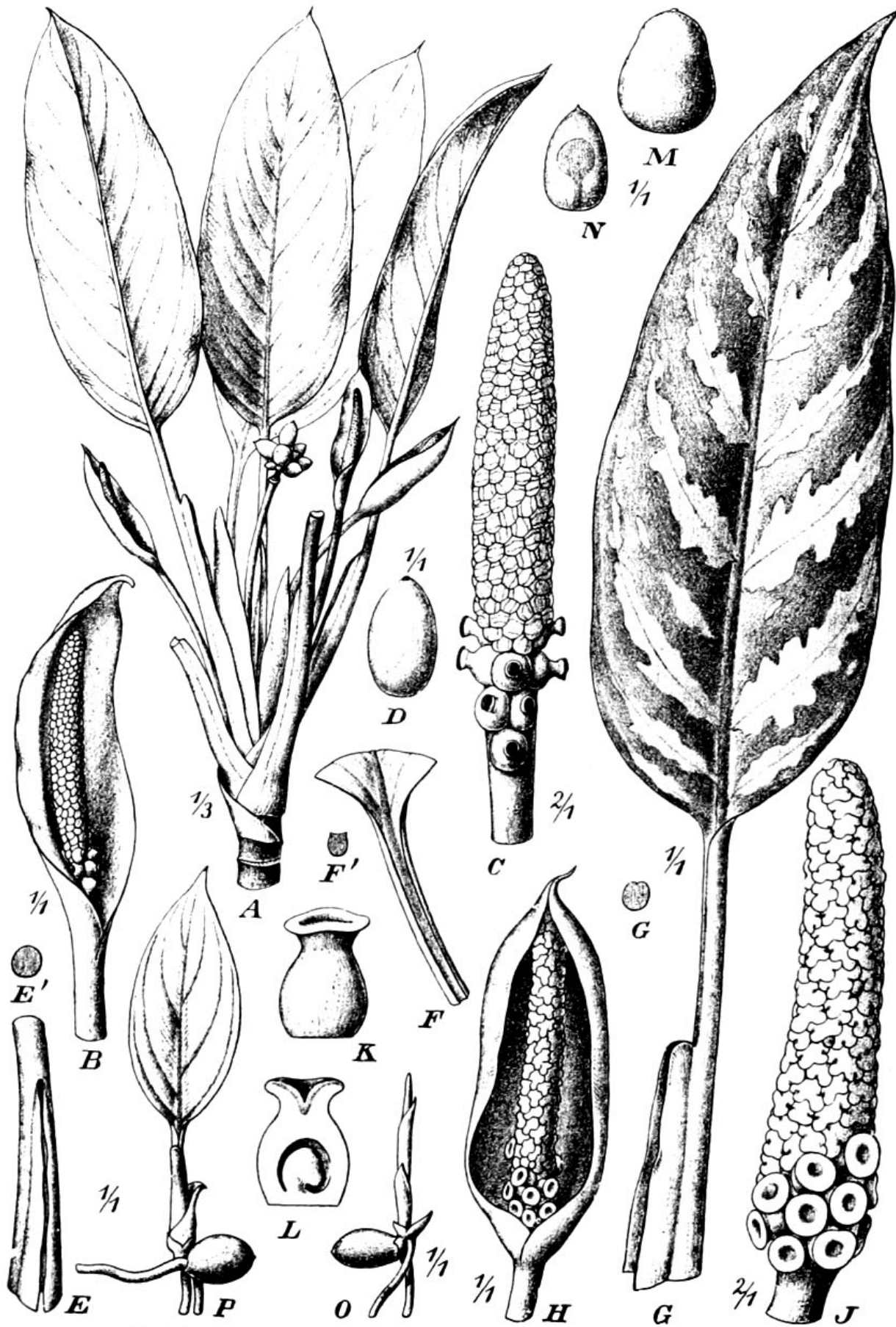


Fig. 10. A—F *Aglaonema marantifolium* Blume. A Plantae pars superior. B Inflorescentia. C Spadix. D Bacca. E Petioli pars basalis. F Petioli pars superior et laminae basis. F' Petioli sectio transversalis. — G—P *Aglaonema commutatum* Schott. G Folium. H Inflorescentia cum spathe. J Spadix. K Pistillum. L Ejusdem sectio longitudinalis. M Bacca. N Semen. O, P Plantae germinantes. — Icon. origin.

26. **A. marantifolium** Blume in Rumphia I. (1835) 153 t. 66; Kunth, Enum. III. (1841) 55, Schott, Syn. (1856) 124, Prodr. (1860) 303; Miq. Fl. Ind. bat. III. (1859) 215; Engl. in DC. Monogr. Phan. II. (1879) 441. — *Scindapsus erectus* Presl, Epim. (1849) 241 (*Appendix erecta* Rumph. Herb. amb. V. 487 t. 182 f. 2). — Caudex 4—5 cm crassus, erectus, pallide viridis. Foliorum petioli 4—4,5 dm longi, longe ultra medium, fere ad apicem usque vaginati, lamina supra atroviridis, ad nervorum latera pallide nebuloso-maculata, subtus saturate viridis, oblonga, basi obtusa, rotundata vel subcordata, apice breviter acuminata, 1,5—3,5 dm longa, 6—12 cm lata. Pedunculi circ. 1 dm longi, virides. Spatha 7—8 cm longa, acumine 1,5 cm longo instructa, expansa 3 cm lata, oblongo-lanceolata flavovirens. Spadicis stipes 1 cm longus, inflorescentia feminea vix 1 cm, mascula 3—3,5 cm longa, 0,75 cm crassa. Ovaria depresso-globosa, stigmate magno infundibuliformi flavo coronata. Baccae oblongae, miniatae, 1,33 cm longae, 4—5 mm crassae. — Fig. 10 A—F.

Südwestmalayische Provinz: Molukken: Amboina (Zippel. — Herb. Leiden), Banda (Peitsch).

Provinz der Philippinen: Luzon, Manila (Gaudichaud. — Herb. Mus. Paris), Sablang im Distr. Benguet (E. Fénix in Herb. Bur. of sc. Manila n. 12585. — Frucht im November 1910), Kias im Distr. Benguet (Elmer n. 6433. — Blühend im Mai 1904), Mariocles im Distr. Bataan (Elmer n. 3889. — Blühend im August 1904), Rizal (Ramos in Herb. Bur. of sc. Manila n. 10882).

27. **A. commutatum** Schott, Syn. (1856) 123, Prodr. (1860) 304, Gen. Ar. (1859) i. 59; Regel Gartenflora (1865) t. 470; Engl. Arac. exsicc. et illustr. n. 73. — *A. marantifolium* var. *maculatum* Hook. in Bot. Mag. t. 5500. — *A. marantifolium* Blume β . *commutatum* Engl. in DC. Monogr. Phan. II. (1879) 441. — Caudiculus usque 3 dm altus, ramosus, ramis 4—4,5 cm crassis, apice dense foliatis. Foliorum petiulus quam lamina brevior vel eam aequans 0,6—1 dm et ultra longus, ad $\frac{1}{2}$ — $\frac{3}{4}$ longitudinis pallide vaginatus, lamina crassiuscule herbacea saturate viridis et secus nervos cinereo-maculata, oblonga vel oblique oblonga, basi obtusa, longe acuminata acuta, 1—1,3 dm longa, ima tertia parte 4—5 cm lata, in acumen fere 2 cm longum sensim angustata, nervis lateralibus I. utrinque 4—5 a costa valida abeuntibus arcuatim adscen-

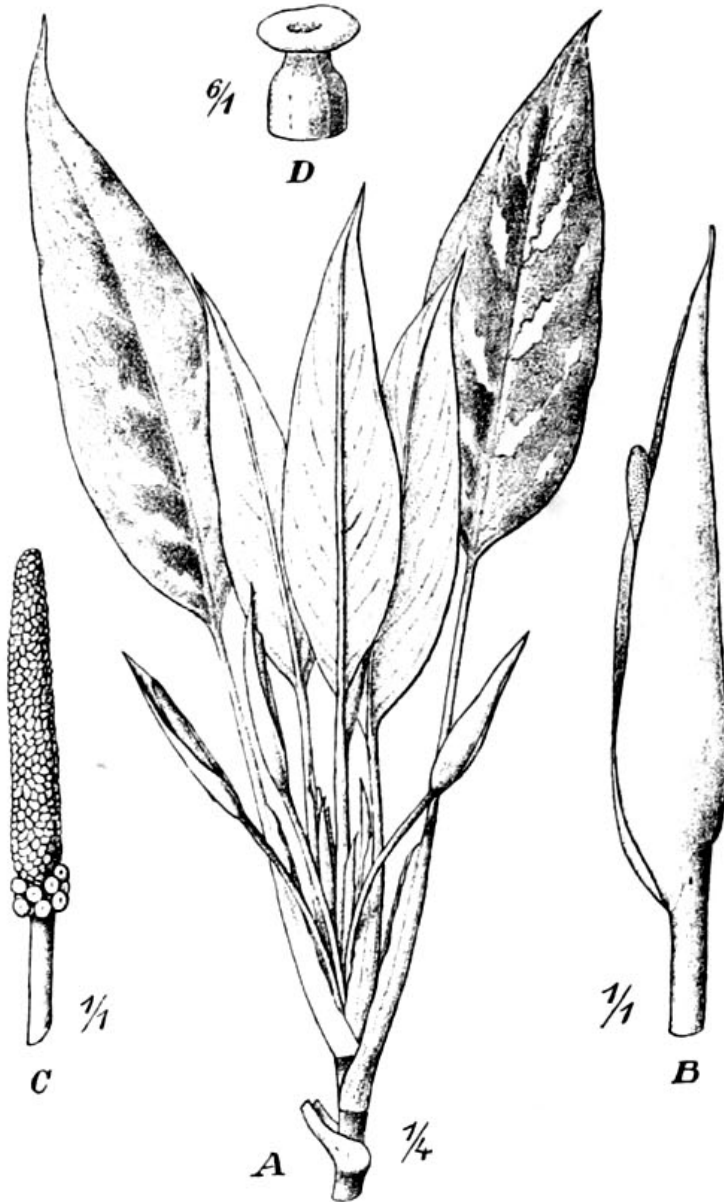


Fig. 11. *Aglaonema elegans* Engl. A Plantae pars superior. B Inflorescentia cum spatha. C Spadicis. D Pistillum. — Icon. origin.

dentibus. Pedunculi plures 4—8 cm longi quam cataphylla pallida longiores. Spatha ex viridi albescens oblonga et breviter acuminata, 5—6 cm longa, 2 cm ampla. Spadix stipite 0,6—1 cm longo suffultus, circ. 3—3,5 cm longus; inflorescentia feminea circ. 8 mm longa, mascula 2,5—3 cm longa, 6 mm crassa. Pistilla subglobosa stigmatate late infundibuliformi coronatus. Baccae ovoideae circ. 1,4 cm longae, 1 cm crassae, purpureae. — Fig. 10 G—P.

Zentromalayische Provinz: Celebes: Minahassa (Koorders n. 19434. — Herb. Buitenzorg, Berlin). — Molukken: Amboina (Kult. in Bot. Gart. Buitenzorg. — S. Kurz in Herb. Hort. Calcutta). — Häufig in botanischen Gärten kultiviert.

28. **A. elegans** Engl. n. sp. — Caudiculus 0,5 m et ultra longus, 1,5 cm crassus. Foliorum petiolus lamina paullum brevior vel ei aequilongus, ultra medium vaginatus, usque 2 dm et ultra longus, lamina crassiuscula, supra obscure viridis, secus nervos laterales irregulariter cinereo-maculata, subtus pallidior, oblongo-lanceolata, basi acuta, apice cuspidato-acuminata, saepe minute tubulosa, usque 2,5 dm longa, medio 7—8 cm lata, nervis lateralibus I. validis utrinque circ. 5 angulo circ. 70—80° a costa abeuntibus arcuatim adscendentibus, juxta marginem procurrentibus, nervis lateralibus II. tenuioribus, nervis lateralibus III. tenuissimis. Pedunculi plures fere 1 dm longi quam spathae longiores. Spatha elongato-oblonga, pallida, ex albo viridescens, 6—7 cm longa, 1 cm ampla. Spadix stipite fere 1 cm longo suffultus, circ. 3,5 cm longus, inflorescentia feminea brevissima, pistillis biseriatis, mascula circ. 3,2 cm longa, inferne 4—5 mm crassa, sursum attenuata, obtusa. — Fig. 11.

Monsungebiet. Fundort nicht bekannt. Die Pflanze wurde im Januar 1906 im botanischen Garten zu Buitenzorg kultiviert und dort von mir gesammelt (A. Engler, Reise nach Java und Britisch Indien 1905—6 n. 4070).

Nota. Species affinis *Aglaonemati commutato* sed foliis majoribus elongatis et imprimis spatha elongato-oblonga diversa.

29. **A. Ridleyanum** Engl. n. sp. — Caudiculus brevis. Foliorum petiolus quam lamina paullum brevior, lamina membranacea obscure viridis, subtus pallidior, ovato-oblonga, basi valde obliqua, apicem versus sensim acutata, haud acuminata, 2—3 cm longa, 6—8 cm lata, nervis lateralibus I. utrinque 6 a costa angulo circ. 80° patentibus, arcuatim adscendentibus, nervis lateralibus II. inter primarios sitis ad medium usque validiusculis, deinde tenuibus, nervis lateralibus III. tenuissimis. Pedunculi plures tenues. Spatha oblonga pallide viridis 2,5 cm longa, convoluta 8 mm diametens, stipite circ. 5 mm longo uno latere decurrens. Spadix spathae apicem

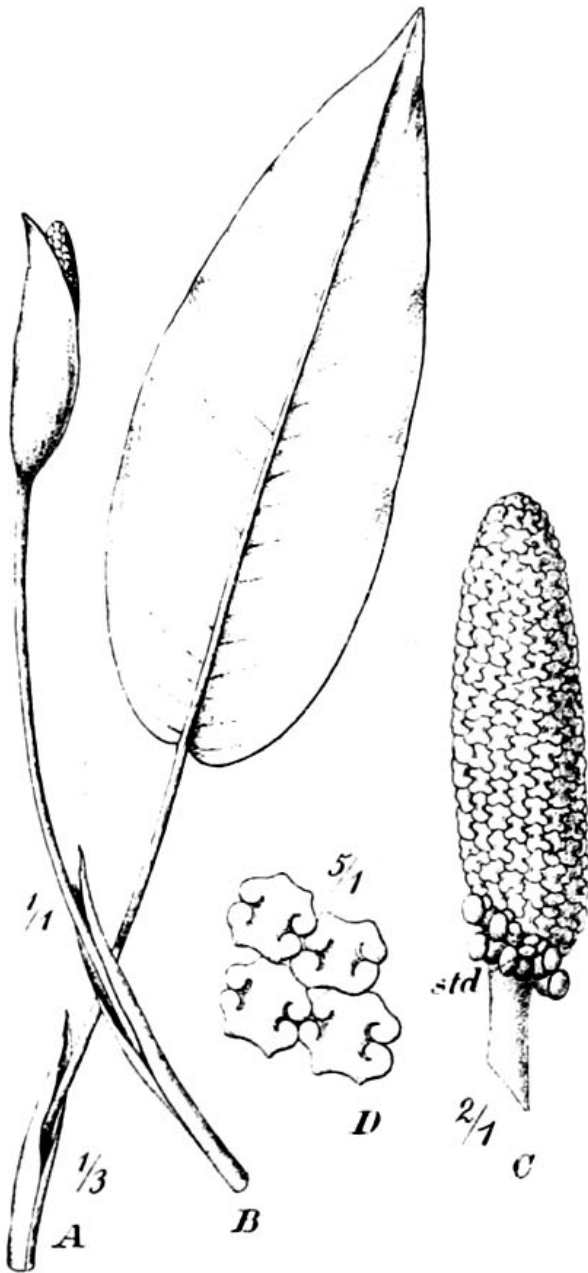


Fig. 12. *Aglaonema Ridleyanum* Engl. A Folium. B Cataphyllum et inflorescentia. C Spadix, std staminodia. D Stamina. — Icon. origin.

attingens; inflorescentia feminea brevissima pauciflora mascula 2 cm longa, medio 7—8 mm crassa, utrinque paullum attenuata. — Fig. 12.

Südwestmalayische Provinz: Siam (Bangkok. — Bot. Gart. Singapore).

30. **A. hospitum** Williams in Bull. Herb. Boiss. IV. (1904) 226. — Caudiculus apice dense foliatus. Foliorum petiolus valde elongatus lamina paullum brevior vel etiam longior, breviter vaginatus, 2—2,2 dm longus, lamina crassiuscula laete viridis albido-maculata, oblique oblongo-lanceolata, inaequilatera, basi subacuta, longe acuminata, 1,9—2,4 cm longa, 5,5—7 cm lata, nervis lateralibus I utrinque 4—5 validis arcuatim adscendentibus, nervis lateralibus II paullum tenuioribus, nervis III numerosis tenuibus. Pedunculi tenues circ. 1 dm longi, inferne cataphyllis involuti. Spatha oblonga obtusa breviter apiculata, 2—2,5 cm longa, viridis, stipite 1 cm longo decurrens. Spadix breviter oblongus obtusus, vix 2 cm longus, 8 mm crassus; inflorescentia feminea quam mascula circ. $1\frac{1}{2}$ -plo brevior.

Hinterindisch-ostasiatische Provinz: Siam (Cult. in Bot. Gart. Bangkok, Hongkong 1888, Singapore, daselbst als *A. siamense* Ridley, gesammelt von A. Engler auf der Reise nach Java und British Indien, Dezember 1905, n. 3815. — Herb. Berlin).

Var. **obtusatum** Engl. — Foliorum lamina basi obtusata atque immaculata.

Hinterindisch-ostasiatische Provinz: Cochinchina (L. Pierre. — Herb. Mus. Paris, Berlin).

31. **A. modestum** Schott in sched. Herb. Caes. Vindob.; Engl. in DC. Mon. Phan. II. (1829) 442. — *A. marantifolium* Engl. Arac. exs. n. 258. — *A. acutispathum* N. E. Brown in Gardn. Chron. XXIV. (1885) 39. — Caudiculus 4—5 dm longus, 1,5 cm crassus, internodiis 1—2 cm longis, superioribus abbreviatis. Foliorum petioli usque 2 dm longi, ultra medium vaginati, lamina saturate viridis, ovata, basi obtusa, 1,5—2,5 dm longa, 1—1,3 dm lata, acumine 2 cm longo instructa, nervis lateralibus I utrinque 4—5 adscendentibus. Pedunculi 1—1,25 dm longi, tenues. Spatha 6—7 cm longa, 1,5 cm lata, oblongo-lanceolata, basi longe decurrens, apice longe acuminata. Spadicis spathae $\frac{2}{3}$ longitudine aequantis, stipite 1 cm longo suffulti, inflorescentia feminea 0,75 cm, mascula 3 cm longa, 4 mm crassa. Pistilla subglobosa in stilum brevem at distinctum contracta; stigma discoideum quam pistillum minus diametens. Ovaria depresso-globosa, stigmatibus infundibuliformi flavo coronata. — Fig. 13.

Provinz der Philippinen: Luzon, Manila (Gaudichaud in Herb. Mus. Paris).

32. **A. philippinense** Engl. in Engl. Bot. Jahrb. XXV. (1898) 21. — *A. latifolium* Engl. in Engler's Bot. Jahrb. XXXVII. (1905) 134. — Caudex erectus, circ. 3 dm longus. Foliorum petiolus inferne late vaginatus, parte superiore evaginata laminam fere aequante, circ. 1,2 dm longa, lamina ovato-oblonga, basi leviter emarginata vel cordato-ovata apice breviter acuminata, circ. 2,3 dm longa, 1,4 dm lata, nervis lateralibus I. utrinque 6—9 arcuatim adscendentibus, quam nervi laterales II. paullum crassioribus. Pedunculi plures circ. 1 cm longi. Spatha oblonga, concava, breviter acuminata, 5—6 cm longa, 2—3,5 cm lata. Spadicis stipite circ. 6 mm longo suffulti inflorescentia feminea pauci- (circ. 10-) flora, mascula femineae contigua 5 cm longa, 5—6 mm crassa.

Provinz der Philippinen: Luzon, Manila (Gaudichaud. — Herb. Berlin), auf dem Berg Alban (Warburg n. 12494. — Herb. Berlin), Atimonan in der Provinz Tayabas, an dicht bewaldeten Abhängen (V. B. Gregory. — Blühend im August 1904. — Government Herbar. n. 86).

33. **A. cordifolium** Engl. n. sp. — Caudiculus circ. 1 cm crassus. Foliorum petiolus quam lamina paullum brevior, ad tertiam partem usque vaginatus, 7—9 cm longus, lamina laete viridis, cordato-ovata, acuminata, 1—1,2 dm longa, 7—8 cm lata, nervis lateralibus I. utrinque 5—6 arcuatim adscendentibus. Pedunculi plures 5—6 cm longi cataphylla superantes. Spatha oblonga, albida 5 cm longa, 2 cm lata. Spadix cum stipite 1 cm longo quam spatha multo brevior, ipse 2,5 cm longus, 4 mm crassus;

inflorescentia feminea pauciflora 3 mm tantum longa, masculo 2 cm longa. Pistilla depresso-globosa, stilo brevissimo, stigmate discoideo quam ovarium duplo minus diametente. — Fig. 14 A—C.



Fig. 13. *Aglaonema modestum* Schott. A Planta juvenilis. B Hujus plantae petiolus cum vagina. B' Petioli sectio transversalis. C Plantae adultae pars superior. D Stirpis adultae folii pars inferior cum petiolo. D' Petioli sectio transversalis. E Spadix. F Stamina. G Stamen a dorso visum. H Stamen a latere visum. J Stamen desuper visum. K Pistillum. L Pistilli sectio longitudinalis. M Pistillum desuper visum. — Icon. origin.

Provinz der Philippinen: Davos auf Mindanao, im Regenwald der Ebene (Warburg n. 14604. — Blühend im Juni 1888. — Herb. Berlin).

Nota. Species duabus prioribus affinis, at bene diversa foliis cordato-ovatis.

34. *A. nicobaricum* Hook. f. Fl. Brit. Ind. VI. (1894) 530. — Caudiculus circ. 4—5 dm longus, 1,5 cm crassus. Foliorum petiolus laminae dimidium aequans, ultra medium vaginatus, 7—8 cm longus, lamina ovato-oblonga acuminata acuta, 1,6—2 dm longa, 5—9 cm lata, nervis lateralibus I. utrinque 5 angulo circ. 45° a costa abeuntibus, arcuatim adscendentibus, nervis lateralibus II. inferne paulum tenuioribus, superne tenuissimis. Cataphylla quam petioli breviora. Pedunculi plures tenues petiolos subaequantes vel tenuiores. Spatha anguste oblonga, 4 cm longa, 1 cm ampla. Spadix stipite 4 mm longo suffultus, paulum ultra 3 cm longus, inflorescentia feminea brevis pauciflora. Baccae oblongae, 1,2 cm longae, 7 mm crassae.

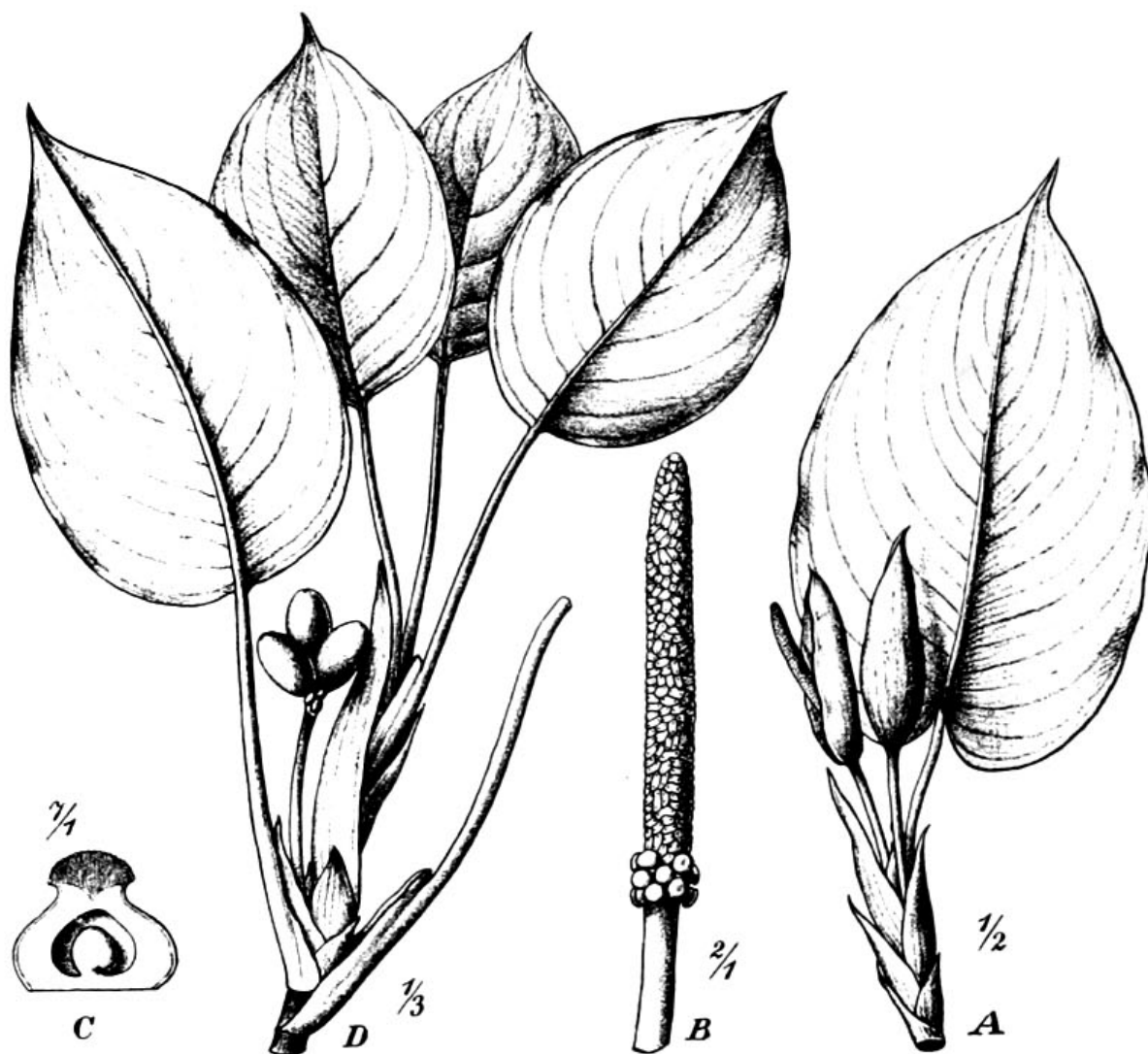


Fig. 14. A—C *Aglaonema cordifolium* Engl. A Plantae pars superior cum inflorescentiis. B Spadix. C Pistillum. — D *A. ovatum* Engl. Plantae pars superior. — Icon. origin.

Südwestmalayische Provinz: Nikobaren (F. Didrichsen n. 3664. — Herb. Berlin, S. Kurz. — Herb. Hort. Calcutta, Berlin; Jelinek in Exped. Novara n. 496. — Kais. Herb. Wien, Herb. Hort. Calcutta; King's Collector n. 537. — Herb. Hort. Calcutta).

35. *A. ovatum* Engl. in Engler's Bot. Jahrb. XXV. (1898) 21. — Caudiculus circ. 4—5 dm longus, 1,5 cm crassus, superne dense foliatus. Foliorum petioli quam lamina fere $1\frac{1}{2}$ -plo longiores, ad trientem inferiorem usque vel ultra vaginati, circ. 1,5—2 dm longi, lamina tenuis, ovata, acuminata, acuta 1,5—1,8 dm longa, 8—10 cm lata, acumine 1—1,5 cm longo instructa, nervis lateralibus I. utrinque circ. 6 valde arcuatis, inter se 1,2—1,5 cm distantibus, fere omnibus in apice folii exeuntibus.

Pedunculi dimidium petioli æquantes vel superantes circ. 4—4,5 dm longi. Spatha oblonga. Spadix stipitatus. Baccæ oblongæ 2 cm longæ, 1 cm crassæ. — Fig. 14 D.

Hinterindisch-ostasiatische Provinz: Cochinchina, Flußgebiet des Attopeu in Laos (Harmand n. 1435. — Herb. Mus. Paris, Berlin); Westliches Tonkin, Kiênkhhi, auf dem Berge Dông Bàu (Abbé Bon), Lat Son (H. Bon n. 3329. — Herb. Mus. Paris); südliches Tonkin, Thù Lâ in Laos (H. Bon Pl. Tonkin occid. n. 3712. —

Herb. Mus. Paris); Wälder des Mont Bavi (Balansa n. 2049, 2064. — Herb. Mus. Paris).

36. **A. brevispathum** Engl.

— *Homalomena brevispatha* Engl. in Bot. Tidsskrift XXIV. (1902) 274 (172). — Caudiculus prorepens, circ. 4—5 mm crassus, internodiis brevissimis. Foliorum petiolus laminae æquilongus vel ea duplo longior, lamina membranacea, oblonga vel ovato-oblonga, basi ± obtusa, acuminata acuta, 4—4,7 dm longa, 4,5—7,5 cm lata, acumine 2 cm longo instructa, nervis lateralibus I. utrinque circ. 7 arcuatim adscendentibus. Cataphylla pedunculi dimidium inferius involucrentia, 2—3 gradatim longiora. Pedunculus solitarius 7 cm longus. Spatha ovata obtusa, 1,8 cm longa, 1 cm lata, quam spadix brevior. Spadix stipite 5 mm longo suffultus, circ. 1,8 cm longus; inflorescentia feminea brevissima pauci(6-)flora, 2,5 mm tantum longa, mascula oblonga 1,6 dm longa. Pistilla breviter ovoidea, stigmate late discoideo instructa. Staminodia pauca breviter claviformia, vertice truncata, alba, inter pistilla sita. — Fig. 15.

Hinterindisch-ostasiat. Provinz: Siam, im dichten Regenwald bei Klong Son, um 160 m (Johs. Schmidt auf der Danske Siamexpedit. 1899/1900 n. 675a. — Herb. Kopenhagen, Berlin).

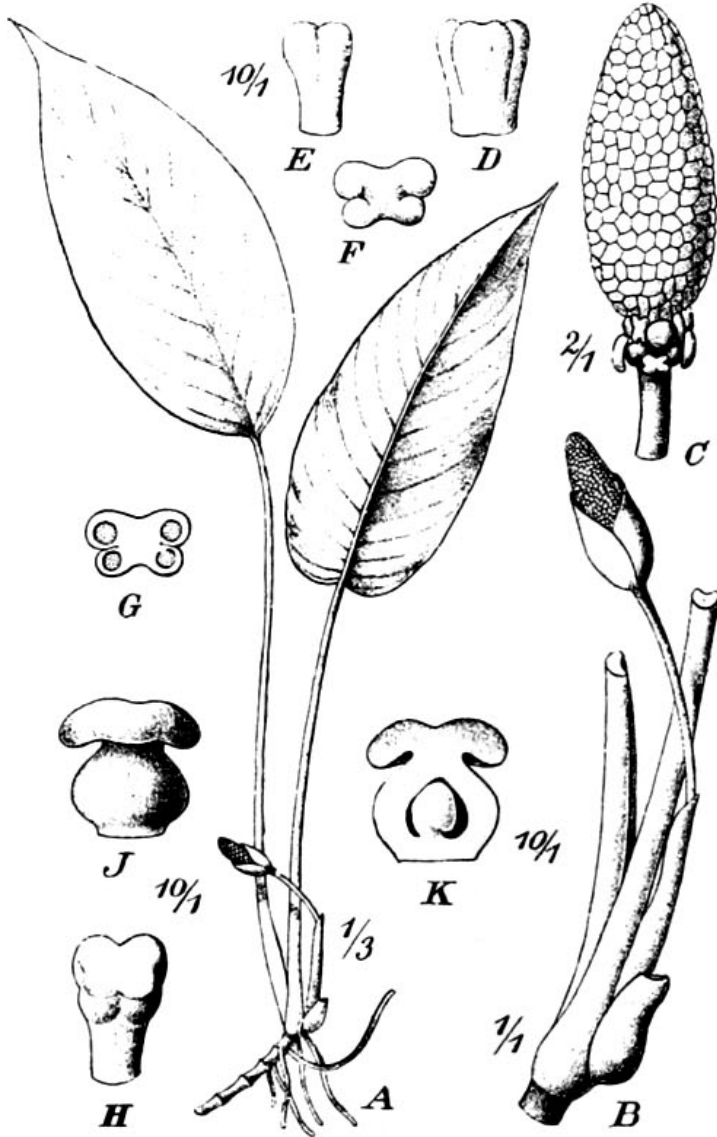


Fig. 15. *Aglaonema brevispathum* Engl. A Habitus. B Plantæ pars inferior. C Spadix. D Stamen a dorso visum. E Stamen a latere visum. F Idem desuper visum. G Idem transversaliter sectum. H Staminodium. J Pistillum. K Pistilli sectio longitudinalis. — Icon. origin.

Nota. Species valde singularis propter caudiculum procumbentem et inflorescentiam femineam paucifloram staminodiis instructam.

37. **A. minus** Hook. f. Fl. Brit. Ind. VI. (1894) 530. — Caudiculus 1,5—2,5 dm longus, 5—7 mm crassus, internodiis 0,5—1 cm longis. Foliorum petiolus lamina 2—4-plo brevior vagina lata 6—7 mm longa instructus, 3 cm longus, lamina tenuiter membranacea, oblonga vel ovato-oblonga, basi obtusa breviter acuminata, 0,8—1,4 dm longa, 3—6 cm lata, acumine 0,5—1 cm longo instructa, nervis lateralibus I. utrinque 4—5 angulo circ. 45° a costa abeuntibus arcuatim adscendentibus. Pedunculi tenues petiolis subæquilongi vel longiores. Spatha ovata breviter apiculata 2 cm longa, 1 cm

ampla. Spadix stipite fere 1 cm longo suffultus, ultra 1 cm longus, 7—8 mm crassus. Baccae oblongae 1 cm longae, 5 mm crassae.

Südwestmalayische Provinz: Halbinsel Malakka: Pahang, Pekan (Ridley); Malakka, Merleman (Derry n. 572), Mt. Ophir, um 600 m (Derry n. 613), Ayer Keroh (Ridley); Selangor: Kuala Lumpur (Ridley), Ginting Bidai (Ridley n. 7667); Johor: Castlewood (Ridley), Bukit Soga (Ridley n. 11224), Serom (Ridley); Singapore: Chan Chu kang (Ridley n. 7881, 8082), Bukit Mandai (Ridley n. 4604), Bukit Timah (Ridley n. 4604, 5107), Jurong River (Ridley) etc. — Herb. Singapore. — Borneo: Sarawak (Sarawak Mus. n. 828. — Herb. Bur. of science, Manila), Soengei Bloe oe (Nieuwenhuis n. 673. — Herb. Buitenzorg, Berlin).

38. **A. pictum** (Roxb.) Kunth, Enum. III. (1841) 55; Schott, Syn. (1856) 122, Prodr. (1860) 305; Miq. Fl. Ind. bat. III. (1859) 217; Engl. in DC. Monogr. Phan. II. (1879) 437. — *Calla picta* Roxb. Fl. Ind. III. (1832) 516; Wight, Icon. III. 1804. — *A. versicolor* Hort. ex Gard. Chron. (1893) I. 414. — Caudiculus 1,5—3 m longus, circ. 1 cm crassus internodiis 0,5—1,5 cm longis. Foliorum petioli 3—5 cm longi, vagina 1—1,5 cm longa latiuscula instructi, tenues, lamina obscure viridis maculis nebulosis irregulariter picta oblongo-elliptica, basi acuta vel obtusata, apice acuminato-cuspidata, subinaequilatera, 0,75—1,5 dm longa, 3,5—5 cm lata, nervis lateralibus I. utrinque 4—5 adscendentibus prope marginem sursum curvis. Pedunculi 3—5 cm longi. Spatha gibba, subovoidea, 2,5 cm longa, acumine 0,5 cm longo instructa, 1,5 cm ampla. Spadicis spatham tandem superantis stipite circ. 2 mm longo suffulti inflorescentia feminea 2 mm tantum longa, mascula circ. 1 cm longa, obconoideo-clavata. Pistilla subcylindrica, stigmatibus discoideo umbonato coronata.

Südwestmalayische Provinz: Sumatra (nach Roxburgh, O. Forbes 1880 — Herb. Hort. Calcutta). Borneo (Korthals in Herb. Buitenzorg); Sarawak (Becari, P. born. n. 159).

Var. **tricolor** N. E. Brown msc. — Foliorum lamina maculis flavescentibus et flavoviridibus notata.

39. **A. vittatum** Ridley msc. — Herba gracilis caudiculo circ. 1,5 dm longo, 2 mm crasso. Foliorum petiolus laminae dimidium paulum superans vel aequans tenuis, circ. ad tertiam partem usque anguste vaginatus 3—4 cm longus, lamina tenuiter membranacea, secus costam albo-vittata, lanceolata, 6—7 cm longa, 2—2,5 cm lata, nervis lateralibus I. utrinque 2—3 angulo acuto (circ. 30°) a costa tenui abeuntibus adscendentibus, nervis II. et III. tenuissimis. Pedunculus tenuis 4—5 cm longus. Spatha ovoidea cymbiformis, breviter acuminata, 2 cm longa, 1,2 cm ampla.

Südwestmalayische Provinz: Singapore, Lingga, Batu Gajah, um 1—600 m ü. M. (Hullett — Herb. Singapore). — Sumatra: Sungei Kelautan (Herb. Singapore).

40. **A. ?immaculatum** Hort. — Caudiculus abbreviatus. Foliorum petiolus laminam subaequans circ. 1 dm longus ad tertiam partem usque vaginatus, ex glauco purpurascens, lamina supra glaucescens, subtus ex glauco purpurascens ubique minutissime albo-punctulata (crystallis calcii oxalatici) ovato-oblonga, latitudine sua 2¹/₂-plo longior, circ. 1,4 dm longa, 6 cm lata, a medio sursum sensim angustata, nervis lateralibus I. utrinque 5—6 arcuatim adscendentibus, nervis lateralibus II. totidem tenuioribus atque nervis lateralibus III. tenuissimis primariis parallelis.

Kultiviert im Bot. Garten Berlin-Dahlem. Herkunft unbekannt.

Nota. Adhuc nondum floruit, itaque incertum est, an ad hoc genus pertineat.

41. **A. rotundum** N. E. Brown in Gardn. Chron. XIV. (1893) II. 86; Journ. of Hort. (1893) 379 fig. 56. — Caudiculus brevis circ. 8 mm crassus. Foliorum petiolus 2,5—3,7 cm longus, ad medium vel ad tertiam partem usque vaginatus, lamina crassiuscula superne costa purpurascens excepta obscure viridis, subtus costa viridi excepta purpurascens orbiculari-ovata vel late ovata, basi rotunda vel breviter et late cuneata, circ. 1—1,3 dm longa, 8,5—1 dm lata, costa crassa, nervis lateralibus I. utrinque 5 valde arcuatis, infimis 3 valde approximatis. Pedunculus circ. 6,5 cm longus. Spatha

inflata conchiformis, extus et intus pallide viridis, 5,5—6,5 cm longa, 2,5—3,2 cm ampla, spadicem includens. Spadix cum stipite brevi circ. 3,2 cm longus, inflorescentia feminea 6 mm longa, 4 cm crassa, mascula 2,5—3,7 cm longa, cylindrica, obtusa, alba. Pistilla pallide flavescentia. Staminodia pauca inter inflorescentiam femineam et masculam sita, alba.

Südwestmalayische Provinz: Wahrscheinlich aus Malakka stammend, blühte 1893 im Garten von Veitch and Sons.

Species male descriptae, imperfecte cognitae.

A. maculatum Blume in Rumphia I. (1835) 154; Kunth, Enum. III. (1840) 56; Schott, Syn. (1856) 423, Prodr. (1860) 306; Engl. in DC. Mon. Phan. II. (1879) 442. — ? Philippinen.

Nota. Blume plantam ipse non vidit, sed speciem ex Dracunculo Luzonis primo seu Indorum Garay Simbuga, Cumelli in Ray Hist. III. App. p. 36 construxit.

A. subundulatum Zollinger, Syst. Verz. (1855) 76; Miq. Fl. Ind. Bat. III. (1859) 217; Engl. in DC. Mon. Phan. II. (1879) 443.

Celebes (Zollinger).

Nota. Verisimiliter ad *A. marantifolium* pertinet.

Planta mihi omnino dubia et verisimiliter ad species supra enumeratas pertinens.

A. discolor Hort. ex Gentil, Pl. cult. serres Jard. bot. Bruxelles (1907) 41. — Nomen.

56. **Aglaodorum** Schott.

Aglaodorum *) Schott, Gen. Aroid. (1858) t. 58, Prodr. (1860) 306; Engl. in DC. Monogr. Phan. II. (1879) 443; in Engl. u. Prantl, Pflzfam. II. 3. (1894) 135. — *Aglaonema* Hook. f. Fl. Brit. Ind. VI. (1894) 528.

Flores unisexuales nudi. Flores masculi 3—4-andri. Stamina brevia, connectivo crasso, prismatico, thecis juxtapositis oblongis, basin fere attingentibus, in vertice poro ovato aperientibus. Flores feminei ? 4-gyni: staminodia prismatica 1—3 ovaria circumdantia, illis breviora; ovarium ovoideum excentrice uni- vel concentrice 2-loculare; ovulum in quoque loculo anatropum, funiculo brevissimo lateraliter affixum, micropyle fundum spectans; stigma discoideum, 4-lobum, medio excavatum. Baccae obovoideae, monospermae majusculae. — Herba aquatica monsunica. Rhizoma horizontale radicibus numerosis ramosis atque internodiis longis. Foliorum petioli lamina longiores, inferne vaginati, teretes, apice canaliculati, lamina anguste lanceolata vel oblonga, carnosula, costa supra plana, lata, infra convexa, nervis lateralibus I. utrinque 5—6 angulo acuto adscendentibus in margine superiore exeuntibus, nervis II. et III. in vivo haud perspicuis, in sicco prominulis numerosis, primariis subparallelis. Pedunculus valde elongatus, erectus, crassus. Spatha oblonga, breviter acuminata, convoluta, medio leviter constricta. Spadicis stipitati quam spatha paulo brevioris inflorescentia feminea masculae $\frac{1}{2}$ — $\frac{1}{3}$ aequans.

A. Griffithii Schott l. c.; Engl. l. c. — *Aglaonema palustre* Teijsm. et Binnend. in Naturk. Tijdschr. Nederl. Ind. XXV. (1863) 399; S. Kurz in Journ. Asiat. Soc. of Bengal. XLV. 2. (1876) 153. — *A. Griffithii* Schott, Syn. (1856) 423; Hook. f. Fl. Brit. Ind. VI. (1894) 528. — Rhizoma horizontale circ. 4 cm crassum, internodiis 6—8 cm longis atque radicibus numerosis fibrosis instructum. Foliorum petioli 2—6 dm longi, basi 1,5 cm crassi, brevissime vaginati, lamina 2,5—4 dm longa, 7—

*) Nomen compositum ex *αγλαός* clarus et *δῶρον* donum.

8 cm lata, utrinque aequaliter angustata, costa inferne 6—7 mm lata. Pedunculus 4—4,5 dm longus, 0,75 cm crassus. Spatha circ. 4 cm longa, acumine 3 mm longo

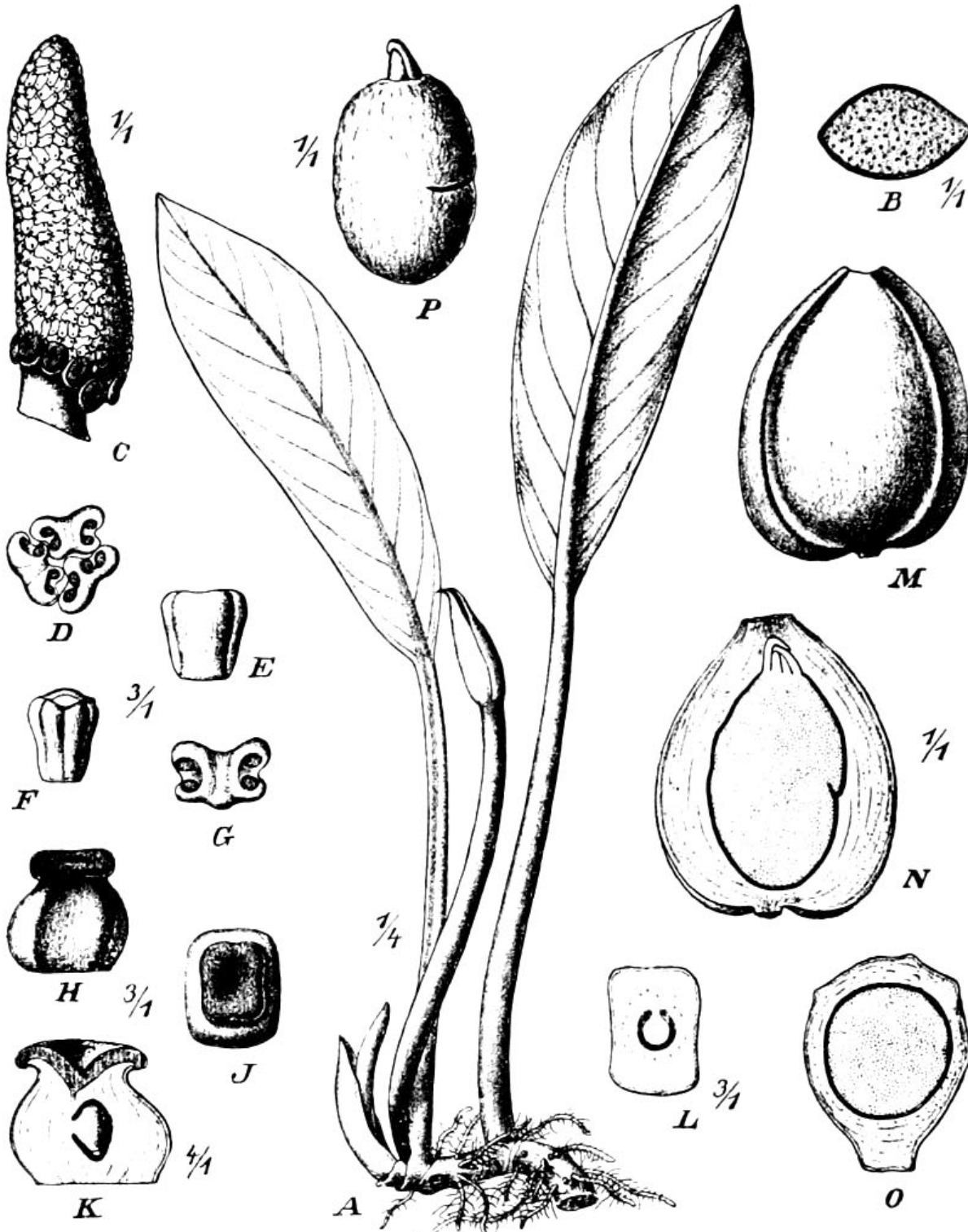


Fig. 16. *Aglaodorum Griffithii* Schott. A Habitus. B Petioli sectio transversalis. C Spadix. D Flos masculus. E Stamen a dorso visum. F Stamen antice visum. G Stamen desuper visum. H Pistillum. J Idem desuper visum. K Pistilli sectio longitudinalis. L Ejusdem sectio transversalis. M Bacca pericarpium parte desumpta. N Baccae et seminis sectio longitudinalis. O Ejusdem sectio transversalis. — Icon. origin. e specimine a me in Java lecto.

instructa, 2 cm ampla. Spadicis stipes circ. 0,5 cm longus, inflorescentia feminea 0,75 cm, mascula 1—1,5 cm longa. Pistilla 5 mm longa. Baccae obovoideae 4 cm longae, 3 cm crassae. — Fig. 16.

Südwestmalayische Provinz: In Sümpfen. — Malakka (Griffith — Herb. Kew; Ridley n. 11378. — Herb. Singapore), Selangor: Bukit Kuda (Ridley — Herb. Singapore). — Sumatra, Loeboe—Along (Teijsmann), Kladié ajer (Teijsmann — Herb. Buitenzorg). — Borneo, Sarawak (Beccari, P. born. n. 363), im Kuching-Fluß (Ridley — Herb. Singapore).

Tribus IV. **Dieffenbachieae** Engl.

Dieffenbachieae Engl. in Pflanzenreich IV. 23 Da. (1912) 25. — Subfam. V. *Aglaonemoideae* Trib. II. *Dieffenbachieae* Engl. in Nov. Acta Acad. nat. cur. XXXIX. n. 3. (1876), et in DC. Mon. Phan. II. (1879) 71. — *Aglaonemeae* Engl. in Engl. u. Prantl, Pflzfam. II. 3. (1887) 135. — Characterem vide in Engler, Pflanzenreich IV. 23 D. a. 25.

57. **Dieffenbachia** Schott.

*Dieffenbachia**) Schott, Melet. I. (1832) 20, Syn. Ar. (1856) 126, Gen. Ar. (1858) t. 63, Prodr. (1860) 326; Kunth, Enum. III. (1841) 53; Endl. Gen. (1840) n. 1692, p. 238; Engl. in Fl. bras. III. 2. (1878) 172, in DC. Mon. Phan. II. (1879) 444, in Engl. u. Prantl, Pflzfam. II. 3. (1894) 136 et in Engler's Bot. Jahrb. XXVI. (1899) 564—572; Benth. et Hook. f. Gen. III. (1883) 986. — *Sequinum* Raf. Fl. Tellur. III. (1836) 66 (ex Ind. Kew.). — *Caladium* Auct. ante Schott.

Flores abortu unisexuales, nudi. Masculi: Stamina 4—5 in synandrium sessile, incrassatum, vertice truncatum, 4—5-sulcum connata; antherae quasi infra discum connectivi insertae, contiguae, basin synandrii exacte non attingentes, thecis obovoideis, juxtapositis rima apicali aperientibus. Flores masculi abortivi e staminodiis 4—5 a centro distantiusculis, inter se contiguis, depressis, irregulariter orbiculari-ellipsoideis compositi. Feminei: Staminodia 4—5 claviformia, apice incrassato rotundata, ovarium superantia, patula. Pistillum 2—3-carpidiatum, carpidiis crassis uno latere concretis, sessile, depresso-ovoideum, 2—3-lobum, 2—3-loculare interdum monocarpidiatum; ovulum in quovis loculo unum (alterum interdum abortivum) erectum, anatropum; stilus nullus; stigma 2—3-lobum, medio concavum, lobis crassiusculis. Fructus baccatus, 2—3-dymus vel sphaeroideus, residuis stigmaticis coronatus, 1—2—3-locularis, loculis 1-spermis; semen globosum vel ovoideum, anatropum, testa crassiuscula laevigata instructum, chalaza orbiculari magna; embryo macropodus exalbuminosus. — Plantae suffruticosae, humiliores, Americae tropicae, meridionalis et centralis. Caudices sympodiales crassiusculi, inferne saepe declinati et radicanes, sursum erecti, apice foliati. Foliorum petiolus longus, ultra medium vaginatus atque semiteres, apicem versus tertiusculus; lamina oblonga, costa crassa semitereti apicem versus saepe evanida, nervis lateralibus I. utrinque numerosis cum nervis secundariis parallelis erecto-patentibus apicem versus adscendentibus atque arcuatis, venulis plurimis transversis connexis. Pedunculi foliis breviores. Spatha oblonga, persistens, parte inferiore convoluta, fauce aperta in laminam rectam vel recurvatam abiens. Spadicis erecti, apice plerumque curvati, spatha paullo brevioris, inferne haud raro stipitifformis pars feminea spathae parte convoluta inclusa eique dorso adnata, multi- et remotiflora, pars mascula libera subcylindrica multi- et densiflora, a feminea interstitio subnudo flores masculos abortivos paucos gerente ± remota.

Generis *Dieffenbachia* species difficile distinguuntur, insuper specimina sicca in herbariis conservata ad speciem vix rite determinari possunt, quum inflorescentiae plerumque notas essentielles non praebant, folia autem ejusdem speciminis petiolorum et vaginarum longitudine laminarumque forma et magnitudine differant in statu juvenili atque in statu magis provento.

*) Nomen in honorem botanici Dieffenbach, horti botanici Vindobonensis custodis bene meriti, amici cli. Schott.

Quod facile observare potes, si *Dieffenbachiae seguinae* stirpes juveniles in vasis cultas atque stirpes adultas in solo humido libere evolutas comparare licet. Saepe autem fere eadem foliorum forma in speciebus diversis occurrit itaque determinationes erroneae facile occurrere pos-

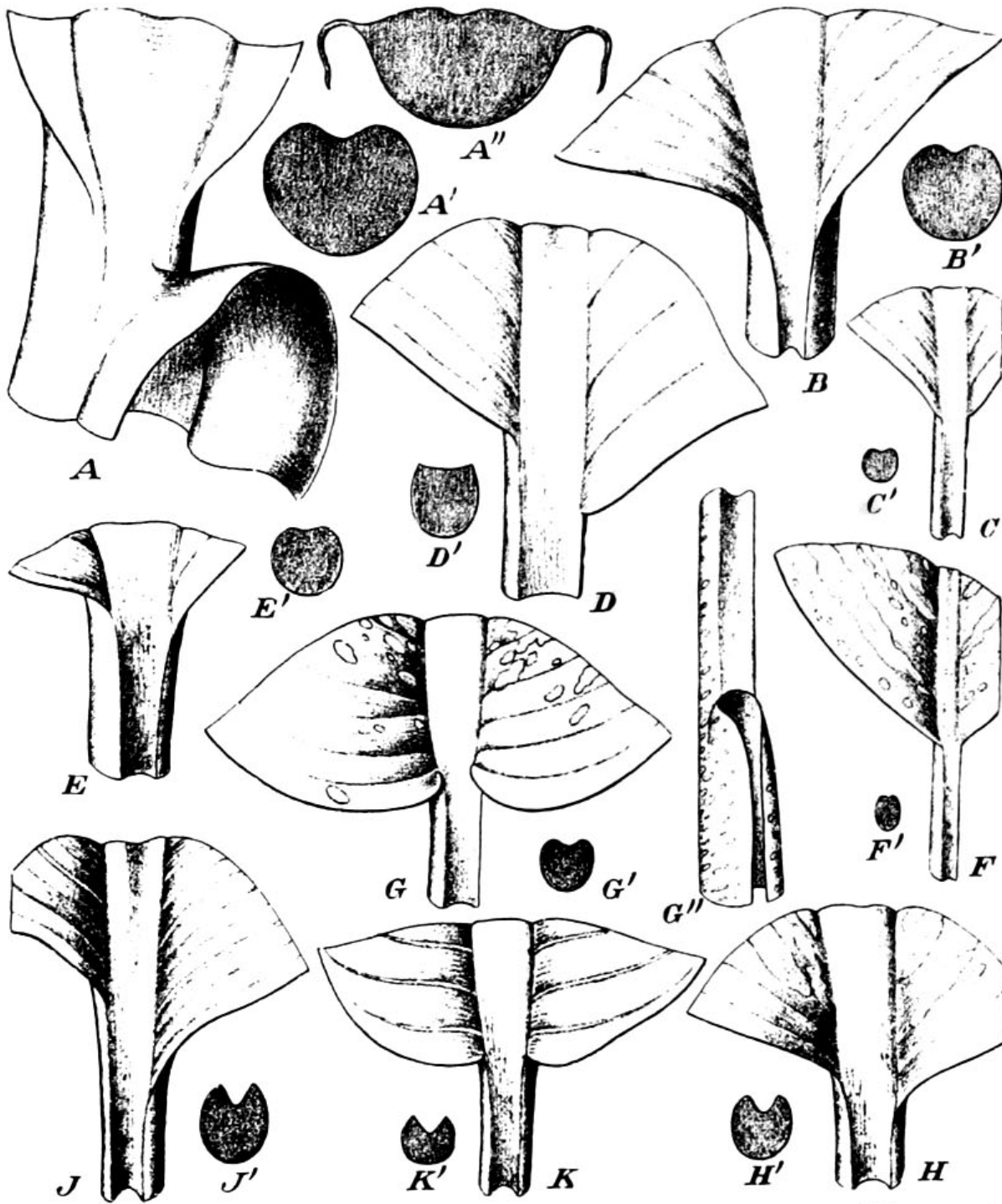


Fig. 17. *Dieffenbachia*. Nonnullarum specierum laminae pars basalis et petioli pars apicalis transversaliter secta. A, A' *D. Parlatoresii* Linden et André. B, B' *D. costata* Klotzsch. C, C' *D. seguina* (L.) Schott var. *viridis* stirps juvenula. D, D' Eadem, stirps adulta. E *D. seguina* var. *lineata*. F, F' *D. picta* (Lodd.) Schott var. *angustior* subvar. *Jenmannii*. G, G' *D. picta* (Lodd.) Schott *typica* Engl. H, H' *D. Bowmannii* Carr. J, J' *D. imperialis* Linden et André stirps juvenula. K, K' Eadem, stirps adulta. — Icon. origin.

sunt: Cl. Schott fere tot species distinxit, quot specimina manca (folia solitaria) in herbariis conservata reperit, ego autem in Flora brasiliensi atque in monographia anno 1879 edita plures species ab illo distinctas conjunxi, alias optimo jure alias false. Serius autem per ultra triginta annos specimina viva Dieffenbachiarum in hortis botanicis Vratislaviensi, Berolinensi et in aliis,

etiam in hortis regionis tropicae culta iterum iterumque examinavi et cognovi foliorum consistentiam et colorem generalem etiam in varietatibus maculis variis distinctis bene conservari. Ut exemplum afferam, *Dieffenbachia seguina*, *D. picta* et *D. Bowmannii*, quas olim varietates speciei unius esse existimavi, laminae consistentia et colore generali satis diversae sunt. Praeter species complures et varietates numerosas ex America tropica introductas etiam plantae hybridae a hortulanis productae in caldariis coluntur, nonnullae colorum variatione valde insignes.

Clavis specierum.

- A. Spatha aurantiaca. Foliorum lamina utrinque laete viridis.
- a. Foliorum lamina oblongo-ovata, basi rotundata, nervis lateralibus I. utrinque 6—9 1. *D. Oerstedii*.
 - b. Foliorum lamina oblonga, basi cordata, nervis lateralibus I. utrinque circ. 18. 2. *D. aurantiaca*.
- B. Spatha viridis vel rarius albicans.
- a. Foliorum petiolus fere ad laminae insertionem usque vaginatus.
 - α. Foliorum lamina elongato-lanceolata 3. *D. cannifolia*.
 - β. Foliorum lamina oblique oblongo-lanceolata vel obovato-oblonga.
 - I. Foliorum petiolus quam lamina multoties brevior, lamina oblique oblongo-lanceolata 4. *D. Parlatoresii*.
 - II. Foliorum petiolus quam lamina 4-plo brevior, lamina obovato-oblonga 5. *D. obliqua*.
 - III. Foliorum petiolus quam lamina circ. duplo brevior, lamina oblique oblonga 6. *D. Pittieri*.
 - γ. Foliorum lamina obliqua obovato-oblonga, basi obtusa 7. *D. daguensis*.
 - b. Foliorum petiolus brevius vel longius, sed nunquam ad laminae insertionem usque vaginatus.
 - α. Foliorum lamina supra obscure viridis, nitidula, subtus laete viridis.
 - I. Lamina subtus haud nitidula. Nervi laterales II. inter nervos laterales I. validiusculi subtus distincte prominentes.
 1. Foliorum lamina oblongo-ovata, nervis lateralibus I. utrinque circ. 12—15 8. *D. macrophylla*.
 2. Foliorum lamina ovata vel late elliptica, nervis lateralibus I. utrinque circ. 9—12 9. *D. costata*.
 - II. Lamina subtus ut supra nitidula. Nervi laterales II. inter nervos laterales I. tenuiores, attamen subtus distincte prominentes.
 1. Spadicis inflorescentia feminea sparsiflora et pauciflora. Foliorum lamina maxima 10. *D. longispatha*.
 2. Spadicis inflorescentia feminea densi- et multiflora. Foliorum lamina minor vel major 11. *D. seguina* (typus polymorphus).
 - β. Foliorum lamina supra maculis albis vel flavis exceptis obscure viridis, nitidula, subtus glaucescenti-viridis, nitidula 12. *D. picta* (typus polymorphus).
 - γ. Foliorum lamina supra maculis pallidioribus exceptis obscure viridis opaca, subtus glaucescenti-viridis, opaca.
 - I. Foliorum lamina oblongo-ovata 3—4 dm longa, 1,5—2 dm lata 13. *D. Bowmannii*.

- II. Foliorum lamina ovato-lanceolata 4,5—6 dm longa,
4,5—3 dm lata 14. *D. olbia*.
- III. Foliorum lamina oblongo-lanceolata, 5 dm longa,
4,8 dm lata 15. *D. Enderi*.
- δ. Foliorum lamina supra maculis exceptis fere atroviridis,
nitidula, subtus flavo-viridis 16. *D. imperialis*.
- ε. Foliorum lamina supra maculis exceptis fere atroviridis,
haud nitidula, subtus glaucescens.
- I. Foliorum lamina haud ultra 3 dm longa et 1 dm
lata, petiolus vix ad dimidium usque vel paullum
ultra dimidium vaginatus.
1. Foliorum lamina oblongo-elliptica vel oblongo-
lanceolata utrinque subaequaliter angustata di-
stincte acuminata 17. *D. Weirii*.
2. Foliorum lamina ovato-oblonga, basi obtusa vel
subcordata.
- * Foliorum lamina ovato-oblonga, sublanceolata,
distincte acuminata 17a. *D. picta* × *Weirii* (*D. Bausei*).
- ** Foliorum lamina oblique oblonga, breviter
acuminata 18. *D. antioquiensis*.
- II. Foliorum lamina lanceolata 3—4 dm longa, medio
1,5 dm lata, petiolus longe ultra medium, usque
ad 1,5—3 cm infra apicem vaginatus 19. *D. latimaculata*.
- ζ. Foliorum lamina valde obscure viridis, fere holosericeo-
nitidula, subtus glaucescens, opaca.
- I. Lamina supra atroviridis vel secus costam albo-
vittata.
1. Foliorum lamina oblonga latitudine sua circ.
triplo longior 20. *D. Weberbaueri*.
2. Foliorum lamina late elliptica, latitudine sua
vix duplo longior vel stirpis juvenulae ovata,
basi leviter cordata 21. *D. Leopoldii*.
3. Foliorum lamina ovato-oblonga basi profunde
cordata 22. *D. cordata*.
- II. Lamina supra secus costam albivittata et inter
nervos laterales albo-maculata . 21a. *D. Leopoldii* × *picta* (*D. splendens*).
- η. Foliorum lamina obscure viridis, subtus paullum palli-
dior, utrinque nitida, nervis lateralibus II. inter pri-
marios sitis subtus distincte prominentibus 23. *D. humilis*.
- θ. Foliorum lamina laete viridis, nervis lateralibus II.
inter primarios haud prominulis.
- I. Foliorum lamina lanceolata, basi subacuta, circ.
2 dm longa, 3,5—5 cm lata 24. *D. parvifolia*.
- II. Foliorum lamina oblongo-lanceolata, circ. 4,5 dm
longa, 3,5—4 cm lata, vagina apice auriculata . . 25. *D. gracilis*
- Species bene distinctae, at incertae sedis, quia
folia sicca tantum vidi et laminae structura haud
bene recognosci potest.
- Foliorum lamina oblongo-lanceolata, ab infima tertia
parte sursum longe angustata basi subobtusa, 4,5 dm
longa, inferne 1,4 dm lata 26. *D. Brittonii*.
- Foliorum lamina oblongo-lanceolata, utrinque fere aequa-
liter angustata, 3,7 dm longa, medio 1,3 dm lata . 27. *D. aglaonematifolia*.

1. **D. Oerstedii** Schott in Oest. Bot. Zeitschr. (1858) 179, Prodr. (1860) 327; Engl. in DC. Mon. Phan. II. (1879) 449; Engler's Bot. Jahrb. XXVI. (1899) 566. — Foliorum petiolus circ. 1,25—2 dm longus, supra vaginam tenuis, supremorum quoque ad duas tertias tantum vaginatus, lamina oblongo-ovata, basi rotundata, a medio apicem versus sensim linea valde arcuata angustata, breviter cuspidata, 1,25—1,5 dm tantum longa, 0,6—1 dm lata, nervis lateralibus I. tenuibus paullum prominulis utrinque 6—9. Pedunculus tenuis circ. 0,75 dm longus. Spatha 1,5 dm longa, 3—4 cm lata, oblonga, subacuta, vix cuspidata, albida, fructifera miniata. Spadicis quam spatha paulo brevioris infima pars nuda, inflorescentia feminea circ. 5 cm longa, mascula fertilis subaequilonga, fusiformis, medio 1—1,25 cm crassa, interstitio 2 cm longo flores masculos abortivos paucos gerente a feminea sejuncta. Ovaria unilocularia. Baccae sanguineae.

Tropisches Zentralamerika: Guatemala: Schattige Bergwälder des Berges Aguacate (Oersted, Friedrichsthal n. 1263. — Herb. Kopenhagen, Wien), Prov. Escuintla bei Torolá um 300 m (John Donnell Smith, Pl. guatemal. n. 2239. — Fruchtend im März 1890. — Herb. Berlin), im Tal Cucunya bei San Andres Osuna (Caec. u. Ed. Seler n. 2389. — Blühend Mai 1896. — Herb. Berlin), Prov. Santa Rosa, auf dem Vulkan Tecumburro, um 1900 m (Heyde und Lux in John Donnell Smith, Pl. guatemal. n. 4654a. — Blühend im März 1893). — Einheim. Name: Flor del Zagino, Sanguinello.

Subäquatoriale andine Provinz: Costarica, bei San José (C. Hoffmann n. 632. — Herb. Berlin), ebenda um 1135 m (Tonduz in Pittier u. Durand, Pl. costaric. n. 2838, 2538. — Blühend April, Mai. — Herb. Berlin), an den Ufern des Tiliri, um 1100 m (Pittier und Tonduz n. 4232. — Herb. Berlin. — Blühend im Juni 1891).

2. **D. aurantiaca** Engl. in Engler's Bot. Jahrb. XXVI. (1899) 566. — Foliorum petiolus valde succosus, fere ad insertionem petioli usque vaginatus quam lamina duplo brevior, circ. 2 dm longus, lamina magna utrinque subconcolor viridis, oblonga basi cordata, 4 dm longa, 2 dm lata, nervis lateralibus I. utrinque circ. 18, infimis fere horizontaliter patentibus, mediis inter se 1—1,5 cm distantibus. Pedunculus quam spatha brevior. Spatha aurantiaca. Baccae ovoideae aurantiacae.

Subäquatoriale andine Provinz: Costarica, in Wäldern bei San Domingo (Tonduz n. 9961. — Fruchtend im März 1896. — Sehr unvollständige Exemplare).

3. **D. cannifolia** Engl. n. sp. — Caudex 0,5—2 m altus internodiis usque 2 cm longis. Foliorum petiolus quam lamina 4-plo brevior ad apicem usque vaginatus, lamina elongato-lanceolata, 3,5—4,5 dm longa, a triente superiore 1—1,5 dm lato versus basin acutam vel obtusiusculam cuneatim angustata apice acuto breviter et anguste acuminata, costa inferne 3 mm lata, sursum valde attenuata, nervis lateralibus I. utrinque circ. 12 angulo circ. 45° a costa abeuntibus arcuatim adscendentibus cum nervis secundariis tenuioribus subtus prominentibus. Pedunculi plures tenues 5—6 cm longi. Spathae pallide viridis 1,3—1,5 dm longae convolutae pars inferior circ. 6 cm longa, 1,5 cm ampla, pars superior aperta oblonga 2,5 cm lata, cuspidato-acuminata. Spadicis albi stipite 1 cm longo instructi inflorescentia feminea 5 cm longa, interstitio sterili 1,5 cm longo a mascula 4,5 cm longa separata. Florum femineorum ovaria depressa 2 mm diametentia stigmatibus discoideo paullum minore orbiculari coronata, staminodiis 4—5 claviformibus 1—1,5 mm longis cincta. Florum sterilium staminodia 4—5 obovata ovarii rudimentum cingentia vel in synandrodium conjuncta. Florum masculorum synandria 1,5 mm diametentia. — Fig. 18.

Hylaea: Peru, Departement Loreto, bei Leticia (Ule, Amazonas Exped. n. 6183. — Blühend im Juni 1902. — Herb. Berlin).

Nota. Species valde insignis et foliis lanceolatis facile recognoscenda.

4. **D. Parlatorei** Linden et André in Linden, Catal. n. 93 (1873) 4; Ed. André, Tour du monde XXIV. 28; Engl. in Engler's Bot. Jahrb. XXVI. (1899) 566. — *D. pothiformis* Linden 1872 (nomen nudum). — Planta valde robusta. Caudiculus brevis, basi ramosus, internodiis brevibus ad 4—5 cm et ultra crassis. Foliorum petiolus quam

lamina multoties brevior 3—6 cm tantum longus, subtus teretiusculus, supra planus fere ad apicem usque vagina latissima obtusa, altero latere 1,5—2 cm aequante instructus, lamina crassa supra atroviridis et nitida maculis luteo-viridibus notata, oblique oblongo-lanceolata, altero latere $1\frac{1}{2}$ -plo latiore a triente superiore basin versus acutata, apice acuta, 3,5—6 dm longa, 1,8—2,5 dm lata, costa crassissima basi 1,5—2 cm lata, apicem versus evanescente, nervis lateralibus I. utrinque 13—15 arcuatim patentibus

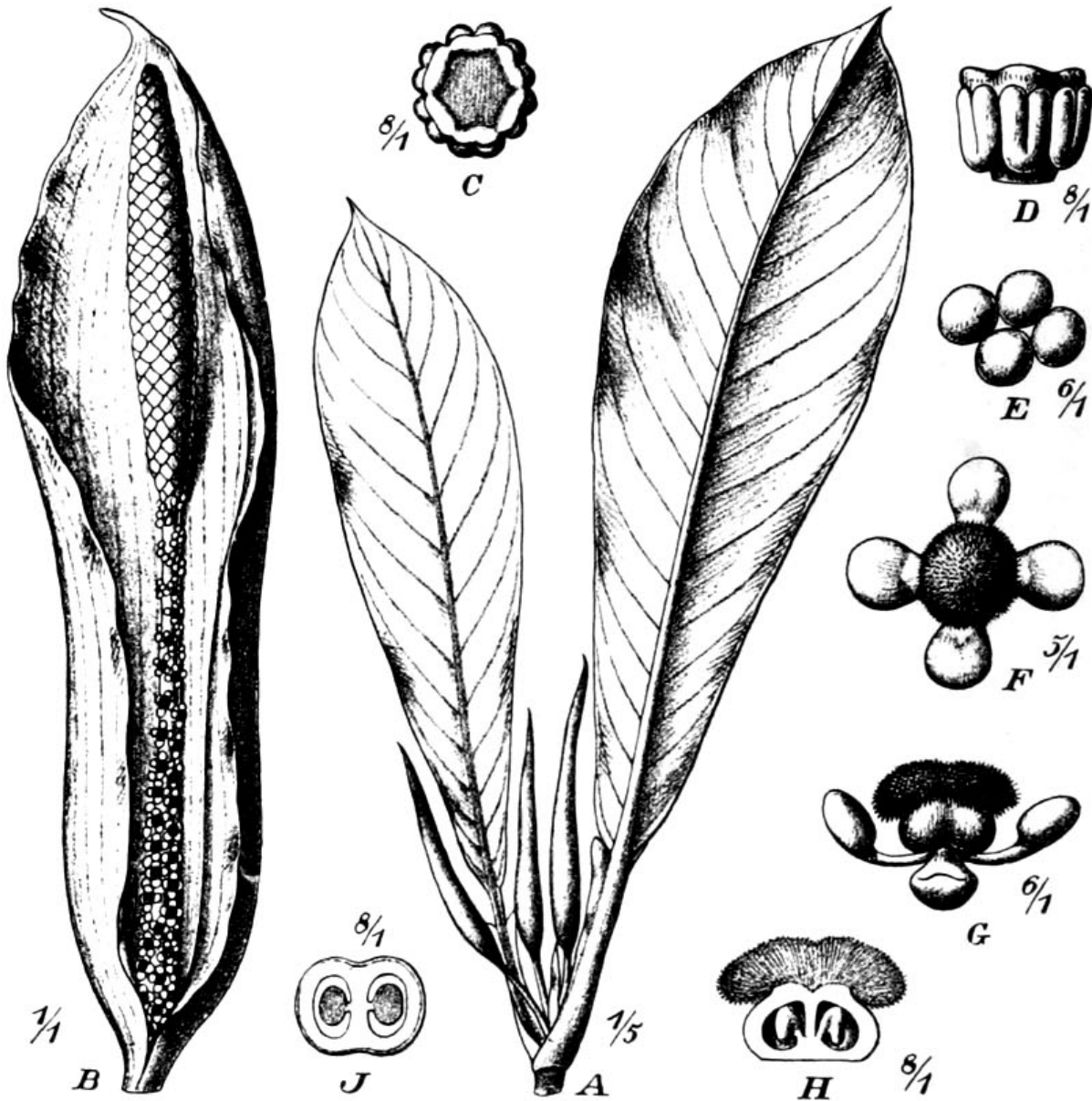


Fig. 18. *Dieffenbachia cannifolia* Engl. A Plantae pars superior. B Inflorescentia. C Flos masculus desuper visus. D Idem a latere visus. E Flos masculus sterilis. F Flos femineus desuper visus. G Idem a latere visus. H Pistillum longitudinaliter sectum. — Icon. origin.

tenuibus. Pedunculus brevis circ. 5—6 cm longus. Spatha pallide viridis oblonga acuminata, circ. 1,8 dm longa, expansa inferne 5 cm lata, convoluta, infra supremam tertiam partem constricta. Spadicis cum stipite 2,5 cm longo, 7 mm lato ad dimidium usque spathae adnati inflorescentia feminea circ. 7—8 cm longa, imo laxiflora deinde densiflora, inflorescentia mascula 5—6 cm longa. Florum femineorum ovaria depressa 5—6 mm diametentia bilocularia, stigmatibus 3—4 mm lato sessili coronata, staminodia late linearia 6 mm longa, 1 mm lata, albida. — Fig. 17 A, A'.

Subäquatoriale andine Provinz: Columbia, Antioquia, in den Uferwäldern des Rio Magdalena, nicht fern von Angostura de Naré (André).

Var. **marmorea** Linden et André in Illustr. hort. XXIV. (1877) 152 t. 291. — Foliorum lamina maculis inaequalibus niveis et viridi-punctatis notata et costa partim alba instructa.

5. **D. obliqua** Poepp. in Poepp. et Endl. Nov. gen. et spec. III. (1845) 901; Schott, Prodr. (1860) 334; Engl. in Engler's Bot. Jahrb. XXVI. (1899) 566. — *D. macrophylla* Poepp. var. *obliqua* (Poepp.) Engl. in DC. Mon. Phan. II. (1879) 450. — Herba robusta. Foliorum petiolus quam lamina circ. 4-plo brevior 7—8 cm longus, ad apicem usque late vaginatus, lamina obovato-oblonga, a medio deorsum sensim angustata, apice linea valde arcuata in cuspidem brevem contracta, 3—3,5 dm longa, 1,3—1,5 dm lata, costa inferne 5 mm crassa, sursum attenuata, nervis lateralibus I. utrinque circ. 15 inter se 1,5—2 cm distantibus angulo circ. 60° a costa abeuntibus sursum arcuatis. Pedunculus circ. 1 dm longus. Spatha oblonga circ. 1,6 dm longa, supra medium constricta, convoluta inferne 2 cm ampla, acuminata. Spadicis cum stipite 1 cm longo, 4 mm lato ad dimidium usque spathae adnati inflorescentia feminea circ. 7 cm longa densiflora, mascula 4—5 cm longa. Florum femineorum ovaria depressa 4 m diametentia bilocularia, staminodia linearia 4—5 mm longa.

Subäquatoriale andine Provinz: Peru, Prov. Maynas (Poeppig — Herb. Berlin).

6. **D. Pittieri** Engl. et Krause n. sp. — Caudex validus. Foliorum petiolus succosus semiteres, 1—1,3 dm longus, vagina tenuiter coriacea persistente, inferne utrinque 1—1,2 cm lata sursum paulum angustata demum rotundata usque ad laminae basin producta instructus, lamina subcoriacea oblique oblonga, basi obtusa vel subacuta, apice tenuiter acuminata, 1,8—2,2 dm longa, 6,5—8 cm lata, paulum inaequilatera altero latere $\frac{1}{3}$ — $\frac{1}{4}$ latiore, nervis lateralibus I. utrinque 8—10 angulo acuto, inferioribus angulo circ. 45° a costa inferne latiuscula sursum valde attenuata et demum fere omnino evanescente abeuntibus prope marginem arcuatim adscendentibus, supra paulum impressis, subtus prominulis. Pedunculus brevis teres 4—5 cm longus. Spathae tenuis subherbaceae ultra 2 dm longae pars inferior convoluta 1,5 cm ampla, pars superior oblongo-lanceolata acumine circ. 1,5 cm longo cuspidiformi praedita, circ. 8 cm longa, expansa 3—4 cm lata. Spadicis dimidio inferiore spathae adnati infima brevissima pars nuda, inflorescentia mascula a feminea interstitio 3 cm longo flores abortivos paucissimos ferente separata, 6—7 cm longa, densiflora. Florum femineorum ovaria depresso-ovoidea, 2—2,5 mm diametentia, stigmate medio concavo coronata, staminodiis 4—5 cincta. Florum masculorum synandria 2—2,5 mm diametentia.

Subäquatoriale andine Provinz: Panama: zwischen Gamboa und Cruces um 50—80 m ü. M. (H. Pittier n. 3766. — Blühend im Juli 1911).

7. **D. daguensis** Engl. in Engler's Bot. Jahrb. VI. (1885) 283, XXVI. (1899) 566, in Arac. exs. et illustr. n. 212. — Caudex usque 1,3 m altus, 4—5 cm crassus. Foliorum petiolus brevis, 5 cm longus, 1,5 cm crassus, lamina pallide viridis, maxima oblique ovato-oblonga, 4 dm longa, 2 dm lata, a supremo triente basin versus arcuatim angustata, nervis lateralibus I. utrinque circ. 25 patentibus arcuatis, prope marginem sursum versis, inter se circ. 1—1,5 cm distantibus, costa 7—8 mm crassa. Pedunculus circ. 5 cm longus. Spathae maximae 2,5 dm longae elongato-oblongae medio constrictae pars inferior 1,2 dm longa, 2 cm ampla, superior aperta 6 cm lata. Spadix spathae aequilongus, 1,5 cm crassus; inflorescentia feminea masculae subaequilonga eique fere contigua, floribus femineis inferne densius obsessa. Pistilla depresso-globosa, 2—3-locularia, fere 3 mm diametentia, staminodiis 3—4 latiusculis circumdata. Synandria quadrangula tetrandra, 3 mm lata, vertice medio excavata. — Fig. 19.

Subäquatoriale andine Provinz: Columbia, Cauca am Dagua um 0—200 m an feuchten Plätzen (F. C. Lehmann n. 2951. — Blühend im Juli. — Herb. Berlin).

8. **D. macrophylla** Poepp. Nov. gen. et spec. III. (1845) 90; Schott, Syn. (1856) 128, Prodr. (1860) 327; Engl. in DC. Mon. Phan. II. (1879) 449. — Caudex interdum 4—5 cm crassus, usque 1 m et magis longus. Foliorum petioli 2—2,5 dm longi,

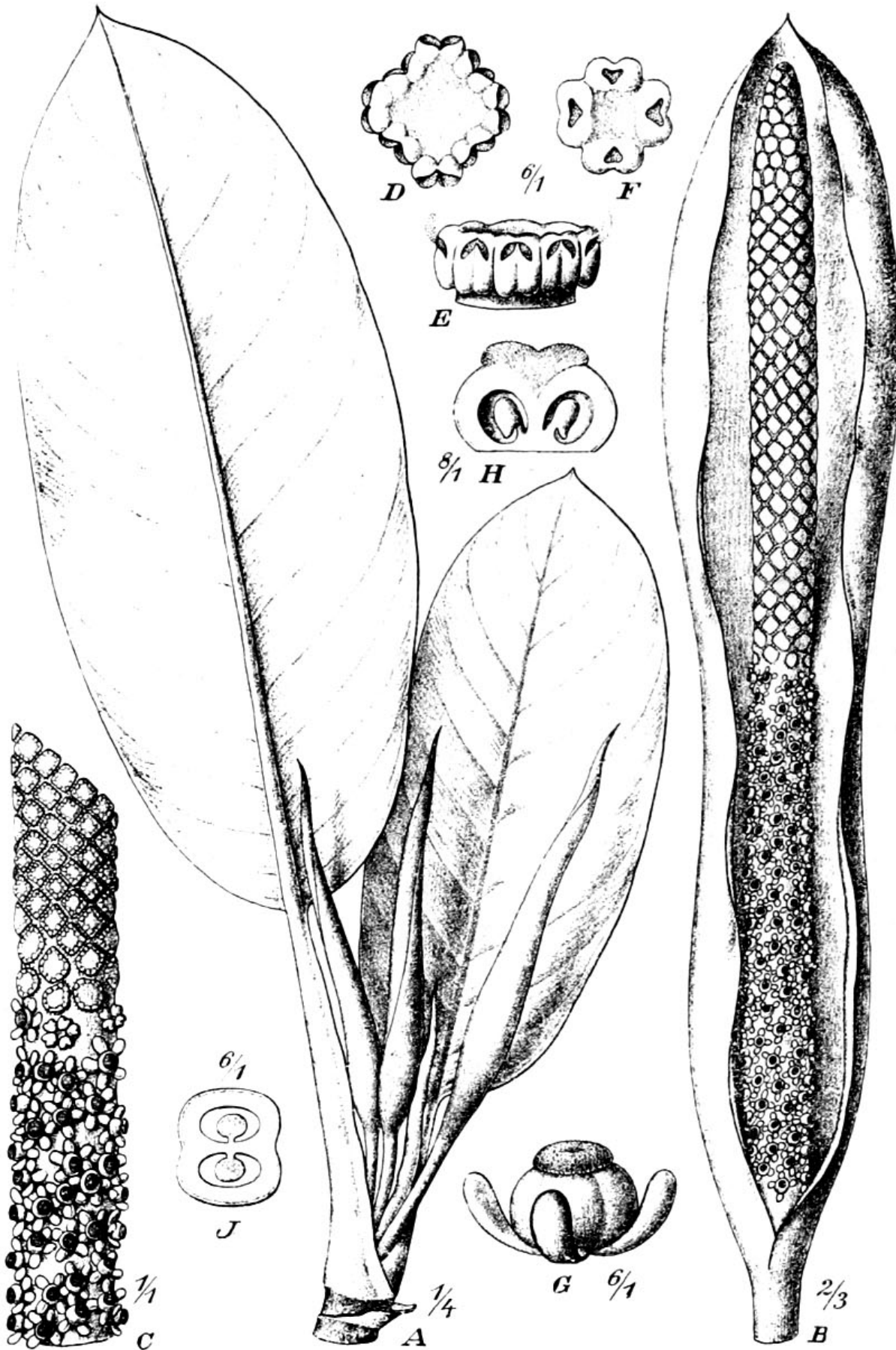


Fig. 19. *D. daguensis* Engl. *A* Plantae pars superior. *B* Inflorescentia. *C* Spadicis pars media. *D* Flos masculus desuper visus. *E* Idem a latere visus. *F* Idem in synandrodium transiens. *G* Flos femineus. *H* Pistilli sectio longitudinalis. *J* Ejusdem sectio transversalis. — Icon. origin.

0,5—0,75 cm crassi, apice canaliculati inferiorum inferne vel ultra medium, superiorum fere ad apicem usque vaginati, lamina crassa, subcoriacea, supra obscure viridis, subtus pallidior, oblongo-ovata, rarius obovato-oblonga, basi saepius rotundata, rarius subacuta, apicem versus rotundata, repentino 1—2 cm longe acuminato-cuspidata, 4—5,5 dm longa, 2—3,5 dm lata, costa crassissima, nervis lateralibus I. utrinque circ. 12—15 patentibus prope marginem arcuatis et longius prope marginem procurrentibus utrinque, imprimis subtus valde prominentibus, nervis II. numerosis subtus distincte prominulis. Pedunculus quam spatha brevior. Spatha pallide flavo-virens, longius cuspidata, 1,6 dm longa, 4—5 cm lata. Spadicis quam spatha brevioris inflorescentia mascula cylindroidea femineae subaequilonga (8 cm longa). Ovaria unilocularia, stigmate suborbiculari coronata, staminodiis crassis late linearibus obtusis circumdata.

Subäquatoriale andine Provinz: Peru, an Waldbächen bei Cuchero (Poeppig n. 1559. in Herb. Hofmuseum Wien).

9. **D. costata** Klotzsch in Herb. Berol.; Schott, Syn. (1856) 128, Prodr. (1860) 327. — *D. macrophylla* Engl. in DC. Mon. Phan. II. (1878) 450 pr. p. et Arac. exs. et illustr. n. 228. — Planta valde robusta, caudice usque 1,3 m alto et 4—5 cm crasso, internodiis usque 4 cm longis. Foliorum petiolus quam lamina paullum brevior usque 2,5 dm longus ad medium usque vel ultra medium anguste vaginatus, teretiusculus, longitudinaliter minute multicostulatus supra canaliculatus, marginibus obtusiusculis, lamina rigida, supra saturate viridis subtus pallidior, laete viridis, haud nitida, ovata vel late elliptica, inaequilatera, utrinque linea arcuata aequaliter angustata, 3,5—4 dm longa et 2,5—3 dm lata, altero latere $1\frac{1}{2}$ -plo latiore, basi subacuta, apice acuta, haud acuminata, costa inferne 6,8 mm crassa, superne tenui, nervis lateralibus I. utrinque 9—12 inter se 1,5—2 cm distantibus arcuatim adscendentibus distincte prominentibus. Pedunculi tantum 5 cm longi. Spathae valde elongatae 2—3 dm longae pars inferior 1—1,5 dm longa, 1,5—2 cm, superne 1—1,5 cm ampla, pars superior expansa oblongo-lanceolata 2,5—3 cm lata, acumine 1,5 cm longo acutissimo instructa. Spadicis haud stipitati spatham subaequantis circ. 1,4—1,7 dm longi inflorescentia feminea 6—8 cm longa, mascula 5—6 cm longa a feminea interstitio 3—4 cm longo floribus sterilibus sparsis obsesso separata. Florum femineorum ovarium breviter ovoideum uniloculare, albido-viride, stigmate discoideo vitellino coronatum, staminodiis 3—5 clavatis albidis cinctum. Florum masculorum synandria circ. 3 mm diametentia. Florum sterilium staminodia 3—5 breviter obovata ovarium rudimentarium circumdantia vel ea superiorum in synandrodium connata. — Fig. 17B, B'.

Subäquatoriale andine Provinz: Columbia (Karsten. — Herb. Berlin); Peru, bei Pozuzo (Ruiz [als *Arum alliaceum*]. — Herb. Berlin). Dep. Loreto; La Calzada bei Moyobamba im Walde, in einem langsam fließenden seichten Bach reine Bestände bildend, um 800—900 m (Weberbauer, Fl. v. Peru n. 4583. — Blühend im August 1904).

Nota. In Peruvia, ubi planta patquina nominatur, fide cli. Weberbauer folia calefacta contra rheuma adhibentur, succus contra excemata.

10. **D. longispatha** Engl. et Krause. — Caudex crassus usque ad 1 m altus. Foliorum petiolus valde succosus, 3,5—4 dm longus, vagina persistente basi utrinque 1,2—1,5 cm, rarius ultra lata sursum sensim angustata, 1,5—2 cm longe infra laminae basin desinente instructus, lamina tenuiter coriacea, oblonga, basi paullum ad petiolum decurrens obliqua, altero latere longius producta, apice breviter acuminata, 3,5—5,5 dm longa, 1,8—2,4 dm lata, nervis lateralibus I. utrinque 20—22 angulo circ. 45—60° vel inferioribus fere rectangule a costa inferne crassiuscula sursum valde attenuata patentibus marginem versus leviter arcuatim adscendentibus subtus prominentibus. Pedunculus fere 2—2,4 dm longus, circ. 1 cm crassus. Spathae magnae coriaceae 2,8—3 dm et ultra longae pars inferior convoluta 2 dm longa, pars superior expansa oblonga 4 cm lata apice breviter cuspidato-acuminata. Spadicis pars infima nuda, inflorescentia feminea pauci- et remotiflora spathae medium superans, inflorescentia mascula interstitio sterili a feminea separata. Florum femineorum ovarium late depressum, 4—5 mm

diametiens, stigmatē medio subconcauo coronatum, staminodiis linearibus apice paullum incrassatis 5 mm longis cinctum. Florum masculorum synandria incrassata, 3—4 mm diametentia.

Subaëquatoriale andine Provinz: Panama, Provinz Colon, bei Fato an sumpfigen Plätzen (H. Pittier n. 3838. — Blühend im Juli 1914. — United States National Herbarium, Herb. Berlin).

Nota. Species magnifica, foliis maximis, spatha longa et inflorescentia feminea sparsiflora et pauciflora valde insignis.

11. Typus polymorphus **D. seguina** (L.) (*»Seguine«*) Schott, Melet. I. (1832) 20; Kunth, Enum. III. (1844) 53; Engl. in DC. Monogr. Phan. II. (1879) 445 et in Engler's Bot. Jahrb. XXVI. (1899) 567. — *Arum seguinum* L. Spec. ed. 2. (1763) 1371. — *Arum Seguine* Jacq. Stirp. amer. (1763) 239 t. 156. — *Caladium seguinum* Vent. Hort. Cels. (1800) 30; Willd. Spec. IV. (1805) 490. — Caudex adscendens, superne arrectus. Foliorum infimorum petiolus ad apicem usque, mediorum ad medium usque vel ultra medium, superiorum in stirpe juvencula longe ultra medium, in stirpe adulta vix ad medium usque vaginatus, viridis vel albido-striato-maculatus, lamina oblonga vel ovato-oblonga, basi rotundata, vel brevissime cordata vel subacuta (in eodem specimine!), apicem versus angustata, breviter cuspidata (viridis vel varie maculata), costa latiuscula crassa, nervis lateralibus I. supra insculptis, subtus valde prominentibus, utrinque circ. 9—15, inferioribus patentibus, superioribus remotis adscendentibus nervis lateralibus II. quam primarii tenuioribus attamen quoque subtus prominentibus. Pedunculus brevis. Spatha longa cuspidata, viridis vel pallide virens. Spadicis quam spatha brevioris infima pars nuda, pars feminea spadicis medium attingens, pars mascula femineae fere contigua vel ab ea interstitio floribus paucis sterilibus obsperso sejuncta. Ovaria excentrice unilocularia stigmatē subconice convexo instructa aut didyma, vel tridyma, stigmatibus subdistinctis. Baccae aurantiaco-coccineae

Nota. Species, ut in diagnosi jam indicatum est, foliorum forma atque colore variabilis itaque a cl. Schott et ab aliis hortulanis similiter ac *Caladium bicolor* aliaque *Aroideae* in species numerosas divisa, quae pro varietatibus tantum existimari possunt, licet constantibus quamdiu gemmis tantum propagantur.

Var. **viridis** (sub titulo formae) Engl. in Mart. Fl. bras. III. 2. (1878) 174 et in DC. Mon. Phan. II. (1879) 445. — *Arum caulescens*, *Cannae indicae foliis* Plum. Descr. pl. d'Amér. (1693) 41 t. 51, fig. h et t. 61. — *D. Plumieri* Schott in Oest. Bot. Wochenbl. (1852) 69, Syn. (1856) 127, Prodr. (1860) 330. — *D. Seguine* (Jacq.) Schott, Syn. Ar. (1856) 127, Prodr. 328. — *Caladium seguinum* Hook. Exot. Bot. (1823) t. 1. — *D. consobrina* Schott, Syn. (1856) 131, Prodr. (1860) 329 (v. sp. or. in h. Reg. Monac.). — *D. Poeppigii* Schott, Syn. 130, Prodr. 329. — *D. Gollmeriana* Schott in Oest. Bot. Zeitschr. (1858) 387, Prodr. 328. — *D. Wendlandii* Schott in Oest. Bot. Zeitschr. (1858) 179, Prodr. (1860) 328. — *D. neglecta* Schott in Bonplandia VII. (1859) 30, Prodr. 333. — Planta in statu juvenili et adulta caudicorum et foliorum magnitudine valde diversa, sed viva semper facile recognoscenda petiolo quam lamina paullum breviorē, dorso teretiusculo, supra plano, lamina ad basin in toto rotundata, imo tantum late cuneata. Stirpis adultae caudex usque 1,5 dm longus, internodiis 5 cm longis et 4—5 cm crassis. Foliorum maximorum petiolus ultra 4 dm longus, vagina circ. 1,8 dm longa, inferne utrinque 1 cm lata instructus, supra vaginam circ. 1,2 cm crassus, latere superiore plano 8 mm lato, lamina oblonga ultra 4 dm longa et 2,2 dm lata, supra obscure viridis, subtus pallidior, utrinque nitidula immaculata. Spathae usque 2,7 dm longae pars inferior clausa 1,5 dm longa, 3 cm ampla, pars superior aperta cum cuspidē 2 cm longa circ. 1 dm longa, 3 cm lata. Spadicis pars infima 2 cm longa nuda, inflorescentia feminea densiflora 9 cm longa a mascula densiflora 9 cm metiente interstitio 2 cm longo, floribus paucis sterilibus obsesso separata. In stirpe juvencula omnes hae partes minores atque petiolus longius ultra medium vaginatus. Florum femineorum staminodia linearia superne incrassata 4 mm longa. — Fig. 20 *U, C', D, D'*.

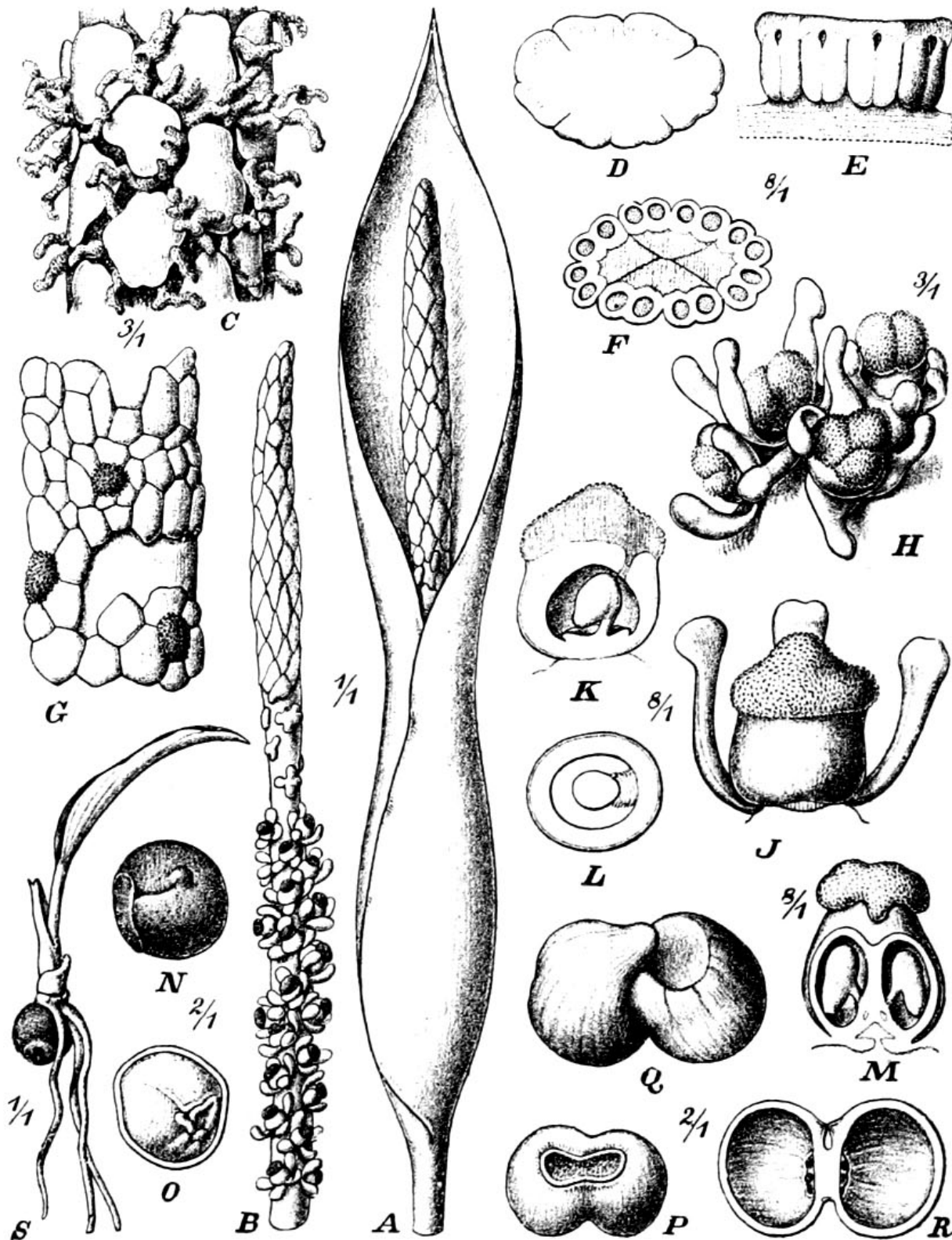


Fig. 20. *A—M* *Dieffenbachia seguina* (L.) Schott var. *liturata* (Schott) Engl. *A* Inflorescentia. *B* Spadix. *C* Pars inflorescentiae masculae cum farcimynulis granorum pollinis. *D* Flos masculus desuper visus. *E* Idem a latere visus. *F* Idem transversaliter sectus. *G* Flores masculi steriles. *H* Flores feminei. *J* Flos femineus. *K* Pistillum monogynum longitudinaliter sectum. *L* Idem transversaliter sectum. *M* Pistillum digynum. — *N—S* *D. picta* (Lodd.) Schott. *N* Bacca monosperma. *O* Embryo. *P* Bacca disperma immatura. *Q* Bacca disperma matura. *R* Eadem longitudinaliter secta. *S* Planta germinans. — Icon. origin.

Westindische Provinz: Jamaica (Distin — Herb. Kew); Portorico (»rabano cimarron«), auf Sumpfwiesen (Moritz n. 157, Sintenis n. 2793. — Herb. Berlin), bei Mayaguez (L. Krug n. 1172. — Herb. Krug und Urban), in Sümpfen bei Corozal um 100 m (Eggers, Fl. Ind. occ. n. 2427); St. Domingo (Mayerhoff n. 67. — Herb. Berlin), bei Sanchez (Rose in Westindien Exploration [1913] n. 4375); Guadeloupe (Duchassaing. — Herb. Berlin); Martinique (Père Duss n. 2149 b. — Herb. Krug und Urban, Berlin; Hahn n. 945. — Herb. Berlin); St. Vincent (H. H. und W. G. Smith. — Blühend im Sept. 1885. — Herb. Berlin); Grenada (Broadway n. 1407. — Herb. Berlin), in Wäldern des Mt. Felix, um 500 m (Eggers n. 6099. — Blühend Nov. 1889. — Herb. Berlin).

Subäquatoriale andine Provinz: Ecuador: in schattigen Wäldern bei Elkerrer (Eggers n. 15095. — Herb. Berlin), Nanegal-Gualea (Sodiolo. — Herb. Berlin).

Tropisches Zentralamerika: San Salvador, bei St. Anna (Wendland nach Schott); Honduras, La Piemento, um 50 m ü. M. (G. Niederlein. — Herb. Berlin); Nicaragua, Dep. Matagalpa, im feuchten Tal um 850 m ü. M. (Rothschuh n. 232. — Herb. Berlin. — Dasselbst Hoja de puerco = Schweinsblatt genannt).

Cisäquatoriale Savannenprovinz: Venezuela, Quebrada des Flusses Carutche bei Caracas (Gollmer. — Fruchtend im März 1856. — Herb. Berlin). — Französisch Guayana: Acarouang (Sagot n. 613. — Blühend im Mai 1858). — Holländisch Guayana (Weigelt. — Herb. Berlin). — Britisch Guayana: Suddie (W. Bartlett n. 7957. — Herb. Berlin).

Hylaea: Prov. do Alto Amazonas, bei Ega in Sumpfwäldern (Poeppig), Fortaleza am unteren Juruá (E. Ule. — Herb. Berlin), am Rio Negro (v. Martius. — Herb. München), Prov. Matto Grosso, Palmerinas, in schattigen Sümpfen des Cupim (M. Lindman n. A. 2407. — Blühend im Mai 1894. — Herb. Stockholm, Berlin).

Var. *nobilis* (Hort. Verschaffelt) Engl. in Fl. bras. III. 2. (1878) 174, in DC. Mon. Phan. II. (1879) 446 et in Engler's Bot. Jahrb. XXVI. (1899) 568. — *D. nobilis* Hort. Verschaffelt. — Foliorum lamina elliptica, acuta, obscure viridis maculis smaragdinis notata.

Hylaea: Prov. Para (Barraquin).

Var. *decora* (Hort. Verschaffelt) Engl. in Fl. bras. III. 2. (1878) 175, in DC. Mon. Phan. II. (1879) 446. — *D. decorata* Hort. Verschaffelt. — Foliorum lamina viridis, maculis argenteis et pallide viridibus notata.

Var. *liturata* (Schott) Engl. in Fl. bras. III. 2. (1878) 175 t. 39, f. 2 et in DC. Mon. Phan. II. (1879) 446. — *D. liturata* Schott in Oest. Bot. Wochenbl. (1852) 68, Syn. Ar. (1856) 129, Icon. Aroid. t. 28—30. — Lamina saturate viridis, supra secus costam vitta latiuscula ex albo flavida, margine lacerato-erosa notata. Spatha glaucescente-viridis.

Subvar. *Wallisii* (Lind.) Engl. — *D. Wallisii* Linden in Ill. hortic. (1870) t. 11. — *D. variegata* Hort. — Foliorum lamina supra saturate viridis, secus costam late argenteo vittata atque maculis longis passim interruptis adpersa.

Var. *robusta* (C. Koch) Engl. in Engler's Bot. Jahrb. XXVI. (1899) 568. — *D. robusta* C. Koch in Ind. sem. hort. Berol. (1853) et in Ann. sc. nat. 4. sér. I. (1854) 344. — *D. robusta* Schott in Oest. Bot. Wochenbl. (1854) 65. — Herba robusta. Foliorum petiolus laminae dimidium aequans vel brevior viridis, ultra medium vaginatus supra canaliculatus, lamina viridis ovato-oblonga vel oblonga, basi rarius acuta, saepius rotunda vel emarginata, acuminata, 3—4 dm longa, 1,5—2 dm lata, nervis laterilibus I. utrinque 12—15 arcuatim patentibus prope marginem adscendentibus. Spathae flavo-virentis elongatae ultra 2 dm longae cuspidate 5—6 mm longo instructae pars inferior clausa circ. 1,3 dm longa, 2 cm ampla, pars superior oblonga circ. 7 cm longa, 3 cm lata. Spadicis pars infima nuda 1,5—2 cm longa, inflorescentia feminea 1 dm longa a mascula 7 cm longa interstitio 2 cm longo floribus abortivis paucis obsesso separata.

Heimat nicht bekannt. Seit 1853 im Bot. Garten zu Berlin kultiviert. Original-exemplare von Karl Koch im Herbar Berlin.

Var. **Ventenatiana** (Schott) Engl. in Engler's Bot. Jahrb. XXVI. (1899) 568. — *D. Ventenatiana* Schott in Bonplandia VII. (1859) 30. — Foliorum lamina basi magis cordata.

Cisäquatoriale Savannenprovinz: Holländisch Guayana, Orellonakreek bei Jandreg (Focke n. 723. — Herb. Utrecht), ohne Standortsangabe (Hostmann n. 53).

Var. **lineata** (C. Koch et Bouché) Engl. in Fl. bras. III. 2. (1878) 175, in DC. Mon. Phan. II. (1879) 446 et in Engler's Bot. Jahrb. XXVI. (1899) 569. — *D. lineata* C. Koch et Bouché in Ind. sem. Hort. Berol. (1853) App. p. 4; Schott, Syn. (1856) 128, Prodr. (1860) 33. — Foliorum petiolus teretiusculus, supra anguste canaliculatus ut costae pars inferior viridis, lineis albis dense striatus, lamina oblonga basin versus rotundata, attamen juxta petiolum altero latere breviter cuneata, apice breviter cuspidata, 2—3,5 dm longa, 1,5—2 dm lata, nervis lateralibus I. utrinque 9—12 angulo circ. 45° patentibus prope marginem adscendentibus. Spathae cum cuspidate 5 mm longa circ. 1,8 dm longae pars inferior 1 dm longa 2 cm ampla, pars superior oblonga obtusa 8 cm longa, 4 cm lata. Spadicis pars infima nuda 1,5 cm longa, inflorescentia feminea 5—6 cm longa a mascula 4—5 cm longa interstitio 2 cm longo floribus abortivis sparse obsito separata. — Fig. 20 E, E'.

Cisäquatoriale Savannenprovinz: Venezuela, bei Caracas (Moritz. — Herb. Berlin).

Var. **lingulata** (Mart.) Engl. in Fl. bras. III. 2. (1878) 175, in DC. Mon. Phan. II. (1879) 446 et in Engler's Bot. Jahrb. XXVI. (1899) 568. — *D. lingulata* Mart. Schott, Prodr. (1860) 334. — *D. cognata* Schott, Syn. (1856) 130, Prodr. (1860) 334. — *D. grandis* Hort. — Foliorum petiolus viridis, ut caudex albido-irroratus, superiorum longe vaginatus lamina viridis oblonga vel oblongo-lanceolata, basi obtusa vel subcordata.

Cisäquatoriale Savannenprovinz: Holländisch Guayana: bei Beckhuizen (Regel n. 919), Paramaribo (Wullschlägel n. 494. — Herb. München). — Hylaea: in Urwäldern (Glaziou n. 18591. — Herb. Berlin), Prov. Para, bei Hurutucú (v. Martius, Barraquin).

Subvar. **irrorata** (Mart.) Engl. in Fl. bras. III. 2. (1878) 175, in DC. Mon. Phan. II. (1879) 447 et in Engler's Bot. Jahrb. XXVI. (1899) 569. — *D. irrorata* Mart. Schott, Prodr. (1860) 334. — *D. conspurcata* Schott in Seemann, Journ. of bot. (1864) 52. — *D. seguine* β . *lingulata* forma δ . *conspurcata* Engl. in Fl. bras. III. 2. (1878) 175 et in DC. Mon. Phan. II. (1879) 447. — Foliorum petiolus minute albo-maculatus, lamina maculis flavis paucis notata.

Hylaea: Prov. Para, in Wäldern bei Tagury (v. Martius. — Herb. München).

Nota. *D. irrorata* et *D. conspurcata* separari non possunt; *D. Bowmannii* autem prius a me cum illis conjuncta melius species propria consideratur.

12. Typus polymorphus **D. picta** (Lodd.) Schott in Oest. Bot. Wochenbl. (1852) 68, Syn. Ar. (1856) 129, Icon. Aroid. t. 24—26, Prodr. (1860) 332; Engl. in Fl. bras. III. 2. (1878) 176 t. 39, f. 3, in DC. Mon. Phan. II. (1879) 447, in Engler's Bot. Jahrb. XXVI. (1899) 569 et in Arac. exs. et illustr. n. 242. — *Caladium pictum* Lodd. Bot. Cab. (1822) t. 608. — *D. brasiliensis* Veitch, Cat. (1875) 12. — Caudiculus usque 1 m longus, circ. 1,5—2,5 cm crassus, internodiis 2—4 cm longis. Foliorum infimorum petiolus longe, mediorum ad medium usque vel brevius, summorum longius, fere ad apicem usque vaginatus, late canaliculatus, marginibus obtusis, lamina oblonga vel oblongo-elliptica vel oblongo-lanceolata, latitudine sua $2\frac{1}{2}$ —4-plo longior, basi rotundata vel acuta, apicem versus sensim leviterque angustata, exitu longe acuminato-cuspidata, obscure viridis et nitida maculis oblongis vel lineari-oblongis majoribus atque minoribus, albis vel flavoviridibus numerosis irregulariter inter nervos notata, nervis lateralibus I. utrinque numerosis (15—20) adscendentibus. Pedunculi breves. Spatha oblongo-lanceolata, longius atque anguste cuspidata. Spadicis inflorescentia feminea spadicis medium attingens ab inflorescentia mascula circ. tertiam partem spadicis totius aequante interstitio brevi floribus paucis obsperso sejuncta. Ovaria didyma vel tridyma, stigmatibus subdistinctis. Baccae didymae vel tridymae, aurantiaco-coccineae.

Hylaea: Prov. Para? Seit langer Zeit in europäischen Gärten kultiviert.

Nota. Viva haec species facile a *Dieffenbachia seguina* et ejus varietatibus distinguitur lamina obscurius viridi et magis nitida, etiam petiolo late canaliculato.

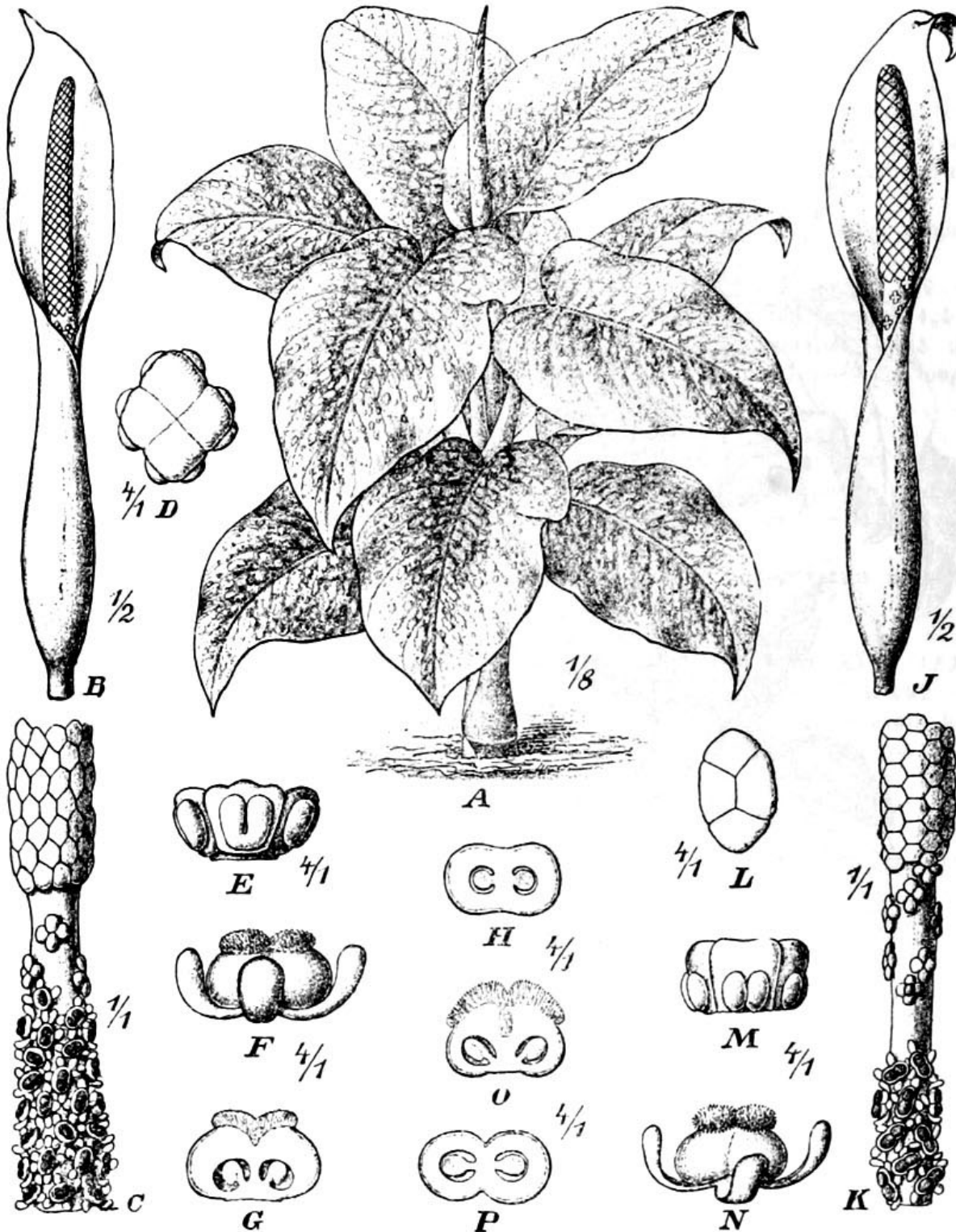


Fig. 21. A—H *Dieffenbachia picta* (Lodd.) Schott var. *latior* Engl. subvar. *magnifica* Linden et Rodigas. A Habitus. B Spatha. C Inflorescentiae pars media. D Flos masculus desuper visus. E Idem a latere visus. F Flos femineus. G Pistillum longitudinaliter sectum. H Idem transversaliter visus. — J—P *D. picta* (Lodd.) Schott var. *typica* Engl. J Inflorescentia. K Spadicis pars media. L Flos masculus desuper visus. M Idem a latere visus. N Flos femineus. O Idem longitudinaliter sectus. P Idem transversaliter sectus. — Icon. origin.

Var. **typica** Engl. — Foliorum petiolus circ. 4—4,5 dm longus, mediorum circ. ad dimidium usque vaginatus, lamina a dimidio inferiore latiore sursum sensim angustata, 2—3,5 dm longa, inferne 1—1,2 dm lata, basi obtusa vel leviter cordata. Spathae circ. 1,5—1,8 dm longae pars inferior circ. 9 cm longa, convoluta 1,5—2 cm ampla, pars superior anguste oblonga 8 cm longa, superne 2,5 cm lata, cusptide 6—8 cm

longa instructa. Spadicis pars infima nuda 1,5 cm longa, inflorescentia feminea 5—6 cm longa a mascula 4 cm longa interstitio 4 cm longo floribus paucis abortivis obsessa separata. — Fig. 21.

Seit langer Zeit in europäischen Gärten kultiviert.

Var. **Barraquiniana** (Verschaffelt et Lemaire) Engl. — *D. Barraquiniana* Verschaffelt et Lemaire in Ill. hort. (1864) t. 387. — *D. sequina* (L.) Schott var. *Barraquiniana* (Verschaffelt et Lemaire) Engl. in Fl. bras. III. 2. (1878) 174, t. 39, f. 1, in DC. Mon. Phan. II. (1879) 446 et in Engler's Bot. Jahrb. XXVI. (1899) 568. — Foliorum petioli atque costa subtilis fere omnino albi, petiolus ultra medium vaginatus, supra vaginam canaliculatus, marginibus obtusis, lamina oblongo-lanceolata hinc inde maculis albis notata. — Fig. 22.

Nota. Haec planta foliorum forma et colore intermedia inter *D. sequinam* et *D. pictam*, ut pro hybrida duarum specierum haberi posset, si duae species in eadem regione occurrerent.

In europäischen Gärten kultiviert.

Var. **angustior** Engl. in Engler's Bot. Jahrb. XXVI.



Fig. 22. *Dieffenbachia picta* var. *Barraquiniana* (Verschaffelt et Lemaire) Engl. — Icon. origin.

(1899) 569. — Foliorum petiolus 0,6—2 dm longus, mediorum circ. ad dimidium usque anguste vaginatus, lamina angusta, lanceolata utrinque subaequaliter angustata.

Subvar. **angustifolia** Engl. in Engler's Bot. Jahrb. XXVI. (1899) 569. — *D. eburnea* Hort. — Foliorum petiolus usque 2 dm longus, lamina maculis permultis pallide viridibus saepe confluentibus notata, 2,3—2,6 dm longa, medio circ. 5 cm lata.

Subvar. **lancifolia** (Lind. et André) Engl. in Fl. bras. III. 2. (1878) 176; DC. Mon. Phan. II. (1879) 448, in Engler's Bot. Jahrb. XXVI. (1899) 569. — *D. lancifolia* Linden et André in Ill. hort. (1874) t. 167 — Foliorum petiolus 2 dm longus,

ad tertiam partem usque vaginatus, lamina maculis permultis luteolis sparsis aliisque paucis niveis minutis conspersa, circ. 2,5 dm longa, medio circ. 5 cm lata.

Subvar. **Shuttleworthiana** (Hort. Bull) Engl. in DC. Mon. Phan. II. (1879) 448 et in Engler's Bot. Jahrb. XXVI. (1899) 570. — *D. Shuttleworthiana* Hort. Bull, Regel in Gartenfl. (1878) 313 c. fig. — Foliorum lamina secus costam pallida.

In Gärten kultiviert.

Subvar. **Jenmannii** (Veitch) Engl. in Engler's Bot. Jahrb. XXVI. (1899) 569. — *D. Jenmannii* Veitch ex Regel, Gartenfl. (1884) 365. — Foliorum petiolus 1,5—2 dm longus, ad tertiam partem vel ad medium usque vaginatus, lamina secus nervos laterales I. maculis aut late albis aut minoribus albis notata a medio utrinque linea arcuata minus quam in subvarietatibus prioribus angustata, circ. 2,5 dm longa, medio 6 cm lata. — Fig. 17 F, F'.

Var. **latior** Engl. in Engler's Bot. Jahrb. XXVI. (1899) 569. — Folia majora ovato-lanceolata vel oblongo-lanceolata.

Subvar. **gigantea** (Verschaffelt) Engl. in Engler's Bot. Jahrb. XXVI. (1899) 569. — *D. gigantea* Verschaffelt in Illustr. hort. (1866) t. 470, 471. — Caudex usque 1,4 m altus tere 8 cm crassus. Foliorum petiolus dense pallide viridi-maculatus, 4—5 dm longus, ultra medium vaginatus, lamina maculis albis notata, oblonga, 7,5—9 dm longa, 2,8—3 dm lata.

Hylaea: Prov. Para (Barraquin nach Verschaffelt).

Subvar. **amoena** Hort. Bull Catal. 37 c. fig. — Caudex circ. 1 m altus, 2 cm crassus. Foliorum petiolus 2—2,5 dm longus, ad medium usque vaginatus, lamina dense irregulariter albo-maculata ovata, latitudine sua duplo longior, 2—2,5 dm longa, 1—1,2 dm lata.

Herkunft unbekannt (Bot. Garten Berlin-Dahlem 1911).

Subvar. **Carderi** Hort. Bull Catal. 38 c. fig. — Foliorum lamina versus margines maculis latis albis confluentibus notata, ovato-oblonga.

Herkunft unbekannt.

Subvar. **magnifica** (Linden et Rodigas) Engl. in Engler's Bot. Jahrb. XXVI. (1899) 570. — *D. magnifica* Linden et Rodigas in Illustr. hort. (1883) 57 t. 482. — *D. rex* Hort. — Foliorum petiolus minute albo-punctulatus, lamina oblongo-ovata basi leviter cordata, acuminata, viridis, secundum nervos laterales II. maculis flavo-viridibus, subtus albis juxta costam saepe confluentibus notata, 2,7—3 dm longa, 1,3—1,5 dm lata.

Cisäquatoriale Savannenprovinz: Venezuela.

? Subvar. **memoria** (Corsi Salviati) Engl. in Engler's Bot. Jahrb. XXVI. (1899) 570. — *D. memoria* Corsi Salviati. — Foliorum lamina oblongo-lanceolata, juxta costam atque inter nervos laterales I. maculis longitudinalibus cinereo-viridibus confluentibus vel venis viridibus transversis separatis valde irregularibus notata, circ. 3 dm longa et 1,2—1,3 dm lata.

Kultiviert im Bot. Garten Berlin und Buitenzorg 1897.

Subvar. **mirabilis** (Verschaffelt) Engl. in Fl. bras. III. 2. (1878) 176 et in DC. Mon. Phan. II. (1879) 448 et in Engler's Bot. Jahrb. XXVI. (1899) 570. — *D. mirabilis* Hort. Verschaffelt. — Foliorum lamina saturate viridis, maculis flavis magnis notata.

In Gärten kultiviert.

Subvar. **picturata** (L. Linden et Rodigas) Engl. in Engler's Bot. Jahrb. XXVI. (1899) 570. — *D. picturata* L. Linden et Rodigas in Illustr. hort. (1892) 101 t. 163. — Foliorum lamina ovato-oblonga basi cordata atroviridis, inter nervos laterales I. maculis albis majoribus venis viridibus multoties interruptis notata.

Cisäquatoriale Savannenprovinz: Venezuela.

? Subvar. **meleagris** (L. Linden et Rodigas) Engl. in Engler's Bot. Jahrb. XXVI. (1899) 570. — *D. meleagris* L. Linden et Rodigas in Illustr. hort. (1892) 89 t. 159. — Foliorum petiolus longus, atroviridis et albo-maculatus, lamina supra atroviridis, maculis albis sparsis utrinque variegata.

Subäquatoriale andine Provinz: Ecuador.

13. **D. Bowmannii** Carr. in *Revue hortic.* (1872) 199; Engl. in *Engler's Bot. Jahrb.* XXVI. (1899) 570. — *D. Baumannii* Hort. — *D. reginae* Hort. — *D. sequine* B. *lingulata* forma ϵ . *irrorata* pr. p. Engl. in *Fl. bras.* III. 2. (1878) 165, in DC. *Mon. Phan.* II. (1879) 147 et in *Arac. exs. et illustr.* n. 227. — Herba robusta e basi ramosa caudiculis 1 m altis, 1,5—4 cm crassis. Foliorum petiolus laminae dimidium vix aequans, interdum 4—5-plo brevior, inferne vaginatus, superne profunde canaliculatus marginibus acutis, lamina membranacea supra maculis pallidioribus exceptis obscure viridis, opaca, subtus glaucescenti-viridis, opaca, oblongo-ovata, 3—4 dm longa, 1,5—2 dm lata, basi obtusa vel leviter emarginata, apice breviter et acute acuminata, costa inferne 2 mm lata, nervis lateralibus I. utrinque circ. 14—16 angulo circ. 45° a costa abeuntibus prope marginem adscendentibus, subtus distincte prominentibus. Pedunculi plures cataphyllis aequilongi, 0,8—1 dm longi. Spathae pallide viridis 1,5—1,8 dm longae, convolutae, medio leviter constrictae tubus circ. 1,5 cm amplus, pars superior aperta lanceolata acuminata. Spadicis haud stipitati inflorescentia feminea 5—6 cm longa a mascula 5—6 cm longa interstitio tenui floribus sterilibus sparse obsessa separata. Florum femineorum ovaria depressa, bilocularia, stigmatibus crasso bilobo coronata, staminodiis claviformibus 4—6 flavis 2 mm longis cincta. Flores steriles staminodiis 3—5 brevibus obovatis \pm cohaerentibus instructa. Florum masculorum syndria flavescens 2,5 mm diametentia. — Fig. 20 H, H'.

Subäquatoriale andine Provinz: Columbia, Tolima, in Sümpfen am Rio de la Plata um 1000—1300 m (F. C. Lehmann n. 2239, 6011. — Blühend im Dez. — Herb. Berlin).

Hylaea: am Juruá Miry (E. Ule, Amazonasexpedition n. 5725. — Blühend im August 1901. — Herb. Berlin).

14. **D. olbia** L. Linden et Rodigas in *Illustr. hortic.* (1892) 31 t. 148; Engl. in *Engler's Bot. Jahrb.* XXVI. (1899) 570. — Planta robusta, caudice brevi. Foliorum petiolus laminae dimidium circ. aequans, usque 1,5 dm longus, ad medium usque vaginatus, supra late canaliculatus, roseo-brunneus, lamina maxima, viridis, maculis numerosis luteolis, nonnullis albidis, secundum costam atque marginem punctis albis lineatim conspersa, ovato-lanceolata basi rotundata, 4,5—6 dm longa, 1,5—3 dm lata, apice acuminata, costa inferne 1 cm lata, nervis lateralibus I. utrinque circ. 16 angulo circ. 40° a costa abeuntibus arcuatim adscendentibus. Inflorescentia ignota.

Subäquatoriale andine Provinz: Peru (1890 eingeführt).

15. **D. Enderi** Engl. in *Engler's Bot. Jahrb.* VI. (1885) 284 et *Arac. exs. et illustr.* n. 213. — Caudex usque 1,3 m altus, 8—9 cm crassus. Foliorum petiolus quam lamina 4-plo brevior 12 cm longus, ultra medium vaginatus, lamina oblongo-lanceolata inaequilatera, 5 dm longa, 1,8 dm lata, apice obtusiuscula, a medio basin versus cuneatim angustata, nervis lateralibus I. utrinque circ. 24 inter se 1,5—2 cm distantibus, tenuibus, arcuatis prope marginem sursum versis, costa crassula. Pedunculus brevis. Spatha elongato-lanceolata acuta, adulta 3,5 dm longa, e basi apicem versus angustata, convoluta, tubo inferiore circ. 3,5 cm amplo. Spadicis inferne 4 cm nudi inflorescentia feminea densiflora masculae contigua eique subaequilonga, 1,5 dm longa, 1,5 cm lata. Pistillorum ovaria depressa, plerumque 2-locularia, 2,5 mm alta, 5 mm crassa, stigmatibus crasso capitato coronata; staminodia pistillum circumdantia 4—6 late linearia obtusa, 5 mm longa, 1,5 mm lata. Flores nonnulli steriles e staminodiis liberis tantum compositi inter inflorescentiam masculam et femineam interjecti. Syndria plerumque 4-andra, brevia, 4 mm diametentia. Baccae cinnabarinae. — Fig. 23.

Subäquatoriale andine Provinz: Columbia, Cauca, an schattigen Sümpfen des Tales Cauca um 800—1000 m (F. C. Lehmann n. 3030. — Blühend August 1883. — Herb. Berlin).

Nota. Eadem planta a cl. peregrinatore Wallis in Columbia pr. Bonaventuram lecta est. Vidi specimen nondum floriferum in horto imperiali Petropolitano cultum a hortulano Aracearum bene perito Ender, cujus in honorem hanc plantam nominavi.

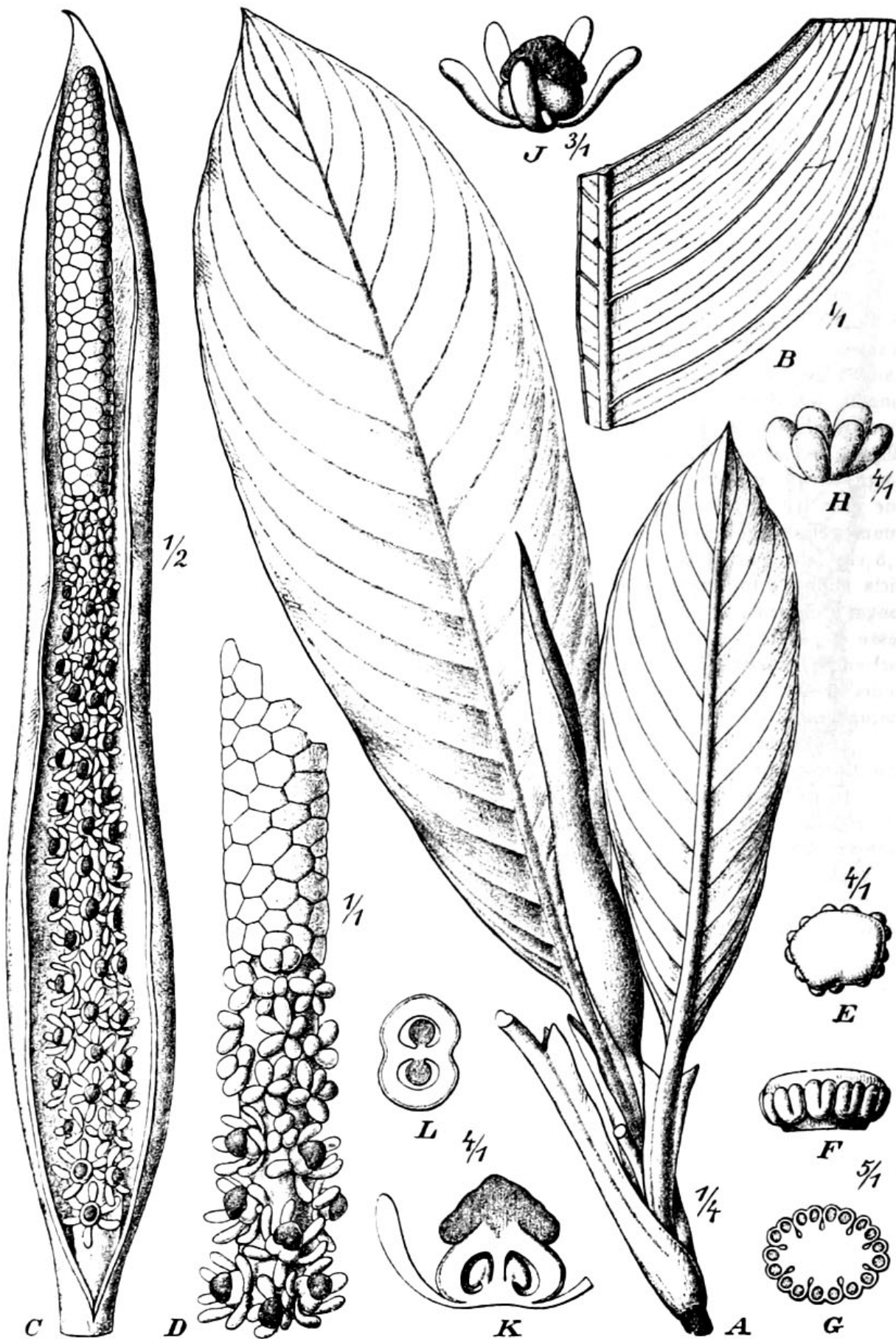


Fig. 23. *Dieffenbachia Enderi* Engl. A Plantae pars superior. B Folii pars. C Inflorescentia. D Spadicis pars media. E Flos masculus desuper visus. F Idem a latere visus. G Idem transversaliter sectus. H Flos masculus sterilis staminodiis compositus. I Flos femineus. J Floris feminei sectio longitudinalis. K Ovarii sectio transversalis. — Icon. origin.

16. **D. imperialis** Linden et André in Ill. hort. (1874) t. 85; Engl. in DC. Mon. Phan. II. (1879) 450 et in Engler's Bot. Jahrb. XXVI. (1899) 570. — Caudex robustus, crassus, erectus, circ. 3 cm crassus, internodiis usque 4 cm longis. Foliorum petiolus usque 6 dm longus, 1 cm crassus, ad medium usque latiuscule vaginatus, vagina albo-marginata rugosa, supra late et profunde canaliculatus biacietatus, lamina crassa, coriacea, costa semitereti pallida excepta atroviridis, nitida, maculis irregularibus luteis obspersa, subtus glaucescenti-viridis, ovato-oblonga, basi obtusa vel subcordata, breviter acuminata, mucronata, usque 6 dm longa, 3 dm lata, nervis lateralibus I. utrinque 14—15 patentibus. — Fig. 17 J, J', K, K'.

Subäquatoriale andine Provinz: Peru (Barraquin).

17. **D. Weirii** Berkl. in Roy. Hort. Soc. Transact. (1867) Vol. I, pars 4; Engl. in Engler's Bot. Jahrb. XXVI. (1899) 571. — *D. picta* forma *α. Weirii* Engl. in Fl. bras. III. 2. (1878) 175 et in DC. Mon. Phan. II. (1879) 448. — *D. Pearcei* Hort. — Caudiculus circ. 6 dm longus. Foliorum petiolus dimidium laminae superans, circ. 4 dm longus, ad dimidium usque vaginatus, lamina supra obscure viridis subtus pallidior, maculis albidis vel flavis majoribus et minoribus valde irregularibus conspersa, oblongo-elliptica vel oblongo-lanceolata, basi acuta vel obtusa, apice acuminata acuta, 2—2,5 dm longa, 6—8 cm lata, costa basi 2,5—3 mm crassa pallida, nervis lateralibus I. utrinque circ. 10 angulo circ. 60° a costa abeuntibus arcuatim adscendentibus. Pedunculi quam petioli breviores. Spathae pallide viridis pars inferior convoluta circ. 7 cm longa, 1,5 cm lata, pars superior oblonga 3 cm lata cuspidate 6—8 mm longa instructa. Spadicis stipite 4 mm tantum longo spathae adnato suffulti inflorescentia feminea 5—6 cm longa a mascula 4—5,5 cm longa interstitio 2 cm longo, floribus sterilibus sparse obesso separata. Florum femineorum ovaria depressa 1—2-locularia circ. 3 mm diametentia, staminodiis 4—5 linearibus apice capitatis cincta. Florum sterilium staminodia 3—4 breviter obovata vel suborbiculata. Florum masculorum synandria 3 mm diametentia. — Fig. 24 A—H.

Subäquatoriale andine Provinz: Buonaventura (Wallis. — Nach den Gärten von Europa eingeführt 1867).

17a. **D. picta** × **Weirii** Engl. in Engler's Bot. Jahrb. XXVI. (1899) 571. — *D. Bausei* Hort. Chiswick; Regel in Gartenflora (1873) 49, 50. — *D. picta* forma *Bausei* Engl. in Fl. bras. III. 2. (1878) 176, in DC. Mon. Phan. II. (1879) 448 et in Arac. exs. et illustr. n. 226. — Herba robusta. Foliorum petiolus quam lamina brevior, 1—2 dm longus, brevior ad dimidium usque, longior vix ad tertiam partem usque vaginatus, superne canaliculatus, lamina supra maxima parte flavoviridis et maculis minoribus albis atque majoribus atroviridibus notata, juxta marginem atroviridis, subtus glaucescens, ovato-oblonga vel ovato-lanceolata, basi obtusa vel emarginata, apice longe acuminata, 1,5—3 dm longa, 0,8—1,5 dm lata, nervis lateralibus I. utrinque 12—15 arcuatim adscendentibus. Pedunculus circ. 6—8 cm longus. Spathae pallide viridis circ. 1,2 dm longae pars inferior clausa 6 cm longa, 2 cm ampla, pars superior oblonga expansa 3 cm lata, acumine 1,5 cm longo instructa. Spadicis omnino sessilis inflorescentia feminea circ. 6 cm longa a mascula fere aequilonga interstitio 1,5 cm longo floribus paucis sterilibus obsito separata. Florum femineorum pistilla didyma vel tridyma, stigmatibus 2—3-lobo coronata staminodiis 3—4 claviformibus cincta.

In Gärten entstanden.

18. **D. antioquiensis** Lind. et André in Ill. hort. (1876) t. 192; Engl. in Engler's Bot. Jahrb. XXVI. (1899) 571. — *D. picta* (Lodd.) Schott var. *antioquiensis* Engl. in Fl. bras. III. 2. (1878) 176 et in DC. Mon. Phan. II. (1878) 448. — *D. triumphans* Hort. — Caudiculus usque 1 m altus, circ. 1,5—2 cm crassus. Foliorum petiolus quam lamina paullum brevior ultra medium vel ad tertiam partem usque late vaginatus, supra canaliculatus, 2—4 dm longus, lamina supra nitida atroviridis, maculis permultis primum luteolis, mox viridi-luteis conspersa, oblique oblonga, breviter vel vix acuminata acuta, 2—3 dm longa, 1 dm lata, nervis lateralibus I. utrinque 9—

10 angulo 60° a costa abeuntibus leviter, versus marginem magis arcuatis adscendentibus subtus prominentibus. Pedunculus fere 4 dm longus. Spathae pars inferior convoluta circ. 6 cm longa, 1,5 cm ampla, pars superior oblongo-lanceolata, 6 cm longa, 2,5 cm lata, cusptide 6—7 mm longa instructa. Spadicis haud stipitati inflorescentia feminea circ. 7 cm longa a mascula 5 cm longa interstitio brevi floribus sterilibus obesso separata. Florum femineorum ovaria depressa, staminodiis claviformibus longioribus cincta. Florum masculorum synandria circ. 3 mm diametentia.

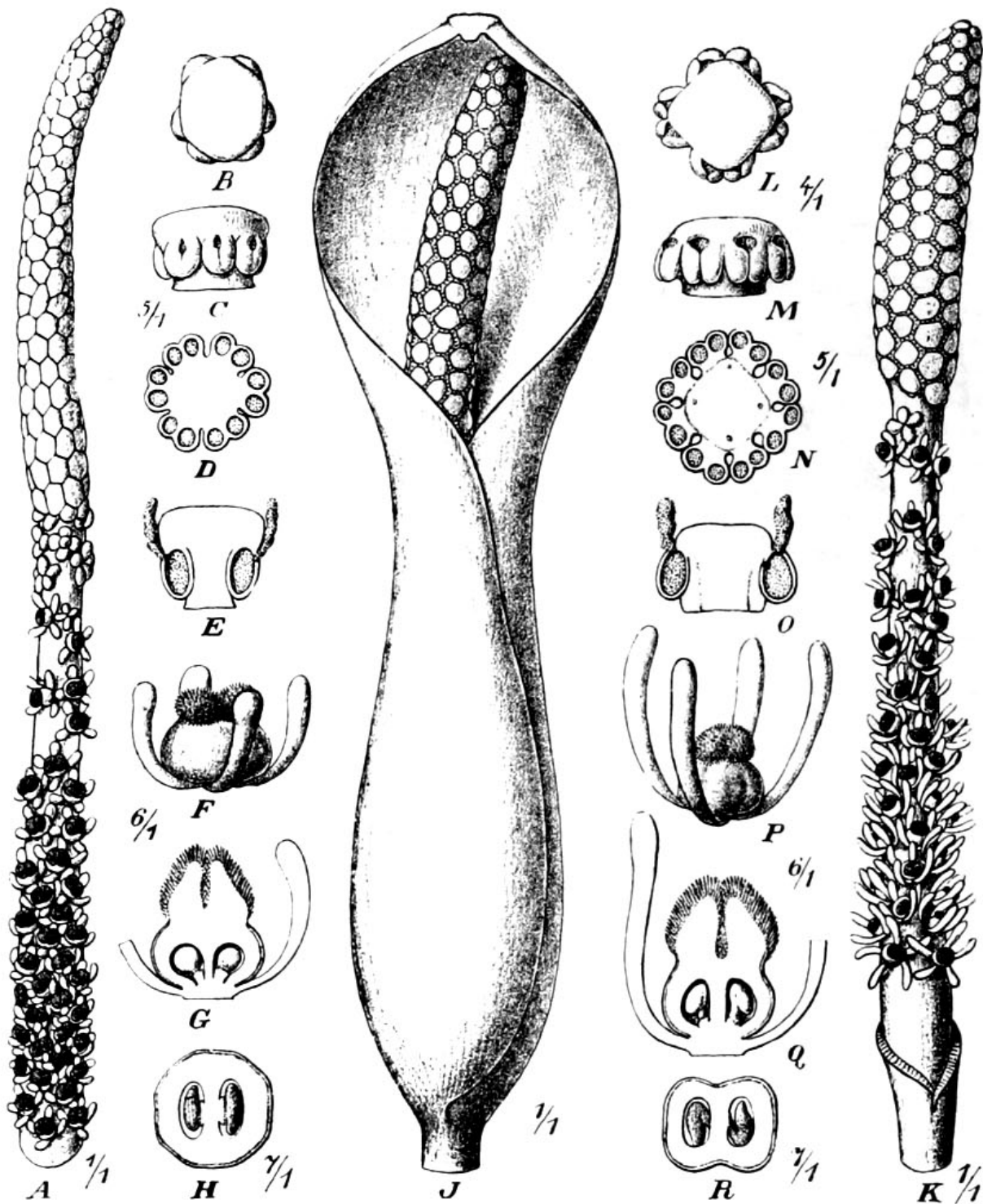


Fig. 24. A—H *Dieffenbachia Weirii* Berkl. A Spadix. B Flos masculus desuper visus. C Idem a latere visus. D Idem transversaliter sectus. E Idem longitudinaliter sectus. F Flos femineus. G Idem longitudinaliter sectus. H Idem transversaliter sectus. — J—R *D. Leopoldii* Bull. J Inflorescentia. K Spadix. L Flos masculus. M Idem a latere visus. N Idem transversaliter sectus. O Idem longitudinaliter sectus. P Flos femineus. Q Idem longitudinaliter sectus. R Pistillum transversaliter sectum. — Icon. origin.

Subäquatoriale andine Provinz: Columbia, Prov. Antioquia; Prov. Cauca, an feuchten Plätzen um Magdalena oberhalb Buga um 1400 m ü. M. (F. C. Lehmann n. 3110. — Blühend im August).

19. *D. latimaculata* Lind. et André in Ill. hortie. (1873) 8 t. 112; Engl. in Engler's Bot. Jahrb. XXVI. (1899) 571. — Herba robusta caudice brevi et foliis pa-

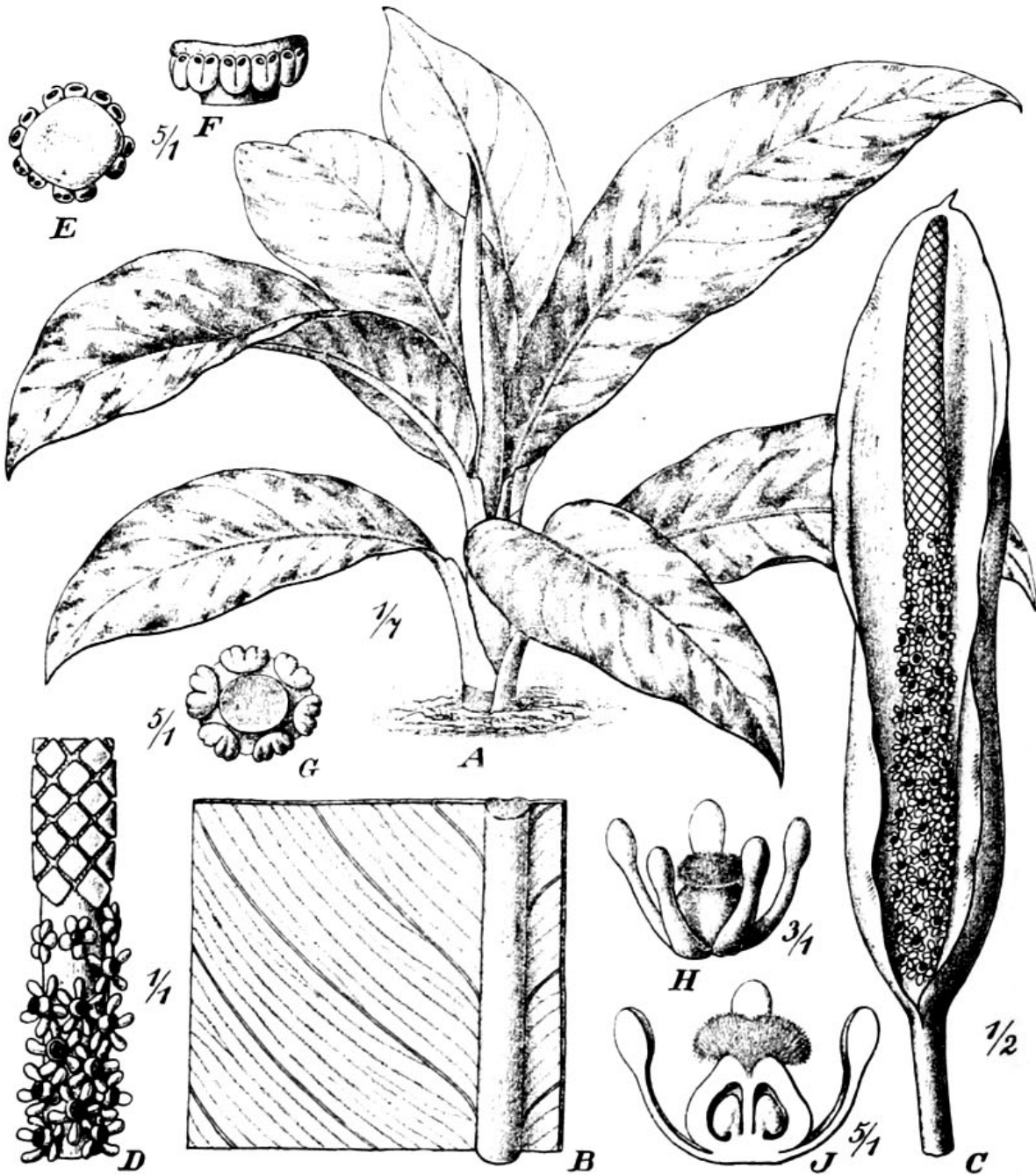


Fig. 25. *Dieffenbachia latimaculata* Lind. et André. A Habitus. B Folii pars. C Inflorescentia. D Spadicis pars media. E Flos masculus thecis apertis desuper visus. F Idem a latere visus. G Idem thecis clausis. H Flos femineus. J Idem longitudinaliter sectus. — Icon. origin.

tentibus. Foliorum petiolus quam lamina 3—4-plo brevior 4—4,5 dm longus, longe usque ad 1,5—3 cm infra apicem vaginatus, supra canaliculatus, lamina supra obscure viridis maculis majoribus albis saepius confluentibus atque numerosis minoribus inter nervos tertiarios situs conspurcata, subtus glaucescens, lanceolata, 3—4 dm longa, medio 1,5 dm lata, basi rotundata, apice late acuminata acuta, costa inferne 5—6 mm lata,

nervis lateralibus I. utrinque circ. 15 arcuatim adscendentibus subtus prominentibus, etiam nervis secundariis distinctis. Pedunculus brevis circ. 5—6 cm longus. Spathae pallide viridis pars inferior convoluta 6—7 cm longa, 1,5 cm ampla, pars superior oblonga 6—7 cm longa, 3 cm lata, acute cuspidato-acuminata. Spadicis e basi floriferi inflorescentia feminea circ. 6—7 cm longa, superne laxiflora, a mascula 5 cm longa, 6 mm crassa interstitio brevi separata. Florum femineorum pistillum depressum stigmatem orbiculari minore coronatum, staminodiis 4—5 late clavatis 2—3 mm longis (florum superiorum obovatis vel suborbicularibus 1,5—2 mm longis) cinctum. Florum sterilium paucorum synandrodia pauca. Florum masculorum synandria 2,5 mm diametentia. — Fig. 25.

Subäquatoriale andine Provinz: ?Columbia.

Die Pflanze ist nach Angabe von Ed. André aus Brasilien eingeführt; da sie aber nur mit columbischen Arten verwandt ist, möchte ich vermuten, daß eine Verwechslung vorliegt und daß diese Art auch aus Columbien stammt.

Var. *illustris* Fournier in Ill. hortic. (1876) 41 t. 234. — Foliorum lamina supra transversim albo-vittata et maculata.

20. **D. Weberbaueri** Engl. in Engler's Bot. Jahrb. XXXVII. (1905) 135. — Caudex circ. 1,5 cm crassus, internodiis brevibus. Foliorum petiolus quam lamina longior, ima quarta parte vaginatus, circ. 3,5 dm longus, lamina supra opaca, subtus paullum glaucescens, oblonga, basi obtusa, supra acuta, circ. 2,5—3 dm longa, 0,9—1,2 dm lata, nervis lateralibus I. utrinque circ. 15 patentibus arcuatis prope marginem sursum versis, longe juxta marginem procurrentibus, deinde in margine exeuntibus. Pedunculus 1 dm longus. Spatha elongato-lanceolata, circ. 1,6 dm longa, acumine 1 cm longo instructa, convoluta inferne vix 1 cm, superne 8 mm diametens, medio leviter constricta. Spadicis stipite 1,2 cm longo suffulti inflorescentia feminea densiflora circ. 6 cm longa, mascula a feminea interstitio brevi separata claviformis, 6 cm longa, 5 mm crassa.

Subäquatoriale andine Provinz: Peru, Dep. Huanuco, Prov. Huamalies, im lichten Wald in der Nähe des Monzon-Flusses (Weberbauer n. 3634. — Blühend im August 1903).

21. **D. Leopoldii** Bull. Catal. (1878) 4; Engl. in Engler's Bot. Jahrb. XXVI. (1899) 574. — Caudiculus usque 5 cm longus, 1,5—2 cm crassus, internodiis 2,5—3 cm longis. Foliorum stirpis juvenilis petiolus pallide viridis, maculis lilacinis irroratus quam lamina 3—4-plo brevior et ad medium usque vel ultra vaginatus, lamina supra costa alba excepta obscure viridis holosericeo-nitida, stirpis adultae petiolus quam lamina oblongo-lanceolata 2,5 dm longa 5—6 cm lata duplo brevior vel dimidium superans, ad dimidium usque vaginatus, lamina late elliptica breviter et acute acuminata, 2,5—3,5 dm longa, 1—1,9 dm lata, stirpis florentis folia suprema petiolo brevi ad medium usque vaginato et lamina ovata basi subcordata instructa; folia majora nervis lateralibus I. utrinque circ. 18—20 angulo circ. 70° a costa abeuntibus, prope marginem adscendentibus. Spathae albae 1,7 dm longae pars inferior clausa circ. 1,2 dm longa, inferne 2 cm ampla, pars superior oblongo-ovata 5—6 cm longa, 4 cm lata, breviter acuminata. Spadicis inflorescentia feminea omnino sessilis circ. 9 cm longa superne laxiflora a mascula 5 cm longa interstitio 2 cm longo floribus sterilibus paucis obsito sejuncta. Florum femineorum ovaria depressa 1—2-locularia, stigmatem orbiculari vel bilobo coronata, staminodiis claviformibus 5 mm longis cincta. — Fig. 24 J—R.

Subäquatoriale andine Provinz: Costarica, in geschlossenen feuchten Wäldern bei Siquirras (F. C. Lehmann n. 1052. — Jungdliches Exemplar Dez. 1884. — Herb. Berlin).

21a. **D. Leopoldii** × *picta* Engl. in Engler's Bot. Jahrb. XXVI. (1899) 574. — *D. splendens* Hort. Bull. Catal. (1878) 4. — Caudex usque 6 dm longus. Foliorum petiolus viridis quam lamina 3—5-plo longior, longe ultra medium vaginatus, superne late canaliculatus, biacietatus, lamina supra costa alba et maculis numerosis minoribus et majoribus inter costam et marginem sparsis exceptis atroviridis subtus glaucescens,

oblongo-lanceolata basi obtusa usque ovato-oblonga basi subcordata, apice longe acuminata, usque 2 dm longa et 0,6—1,2 dm lata. Spatha et spadix ut in *D. Leopoldii*. Kultiviert.

22. *D. cordata* Engl. in Engler's Bot. Jahrb. XXXVII. (1905) 435. — Foliorum petiolus laminae subaequilongus ultra medium vaginatus, lamina supra opaca, subtus

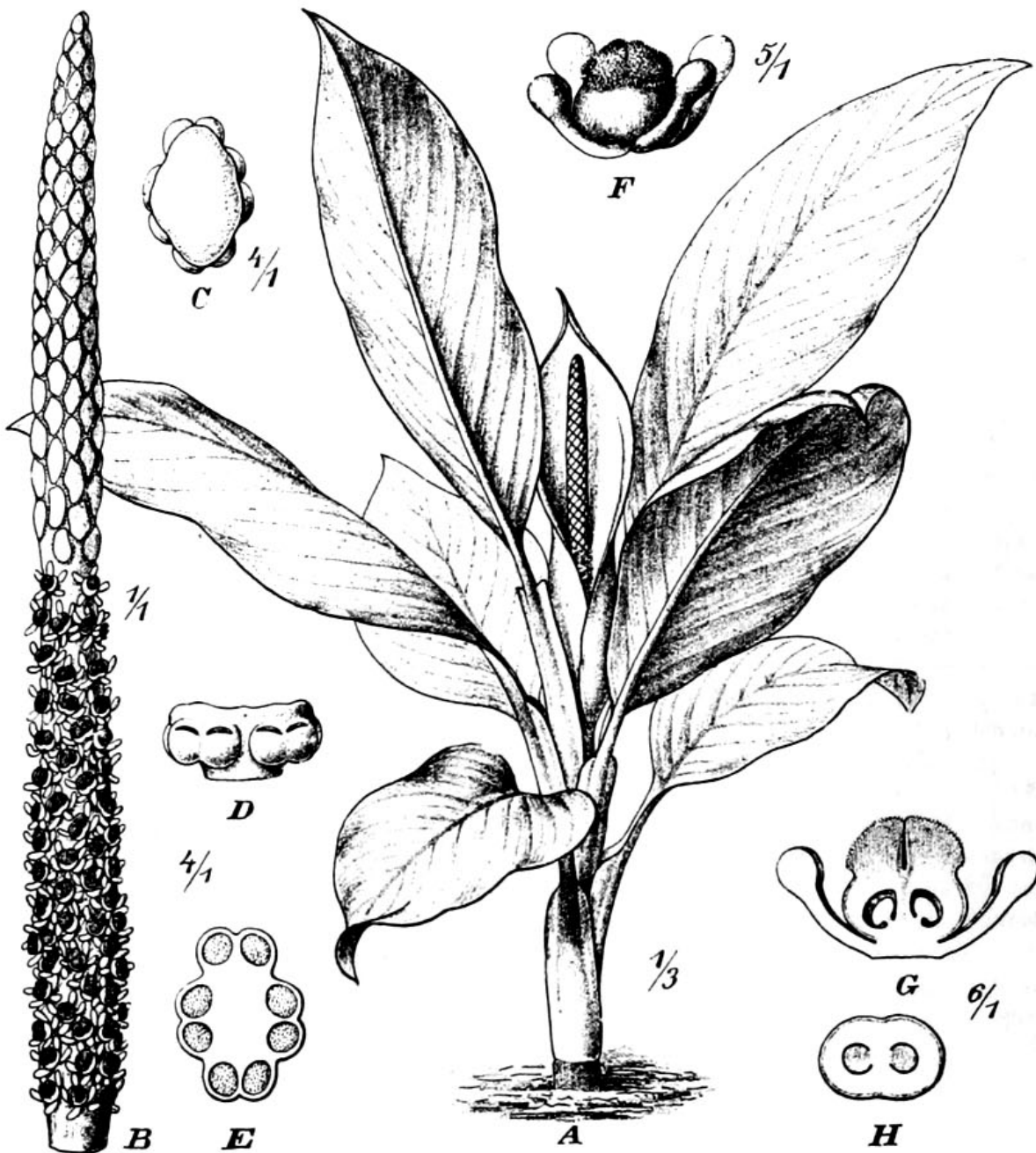


Fig. 26. *Dieffenbachia humilis* Poepp. A Habitus. B Spadix. C Flos masculus desuper visus. D Idem a latere visus. E Idem transversaliter sectus. F Flos femineus. G Idem longitudinaliter sectus. H Ovarium transversaliter sectum. — Icon. origin.

pallida, oblonga, basi profunde cordata, apice acuminata acuta, fere 4 dm longa, 2 dm lata, costa basi 5 mm lata, sursum attenuata, nervis lateralibus I. horizontaliter utrinque 20—25, infimis 2—3 leviter recurvis, sequentibus patentibus, superioribus paulum erecto-patentibus, omnibus prope marginem sursum versis. Pedunculi circ. 2 dm longi. Spatha elongato-lanceolata, 2,3 dm longa, convoluta inferne 1,5 cm diametens, haud constricta. Spadicis breviter stipitati inflorescentia feminea circ. 4 dm longa, mascula a feminea interstitio brevi nudo separata circ. 8 cm longa, 5 mm crassa.

Subäquatoriale andine Provinz: Peru, Dep. Junin, Prov. Tarma, La Merced im Chanchamayotal, im Wald um 1000 m ü. M. (Weberbauer n. 1807. — Blühend im Dez. 1902).

23. *D. humilis* Poepp. Nov. gen. et spec. III. (1845) 90; Schott, Prodr. (1860) 333; Engl. in DC. Mon. Phan. II. (1879) 448, in Engler's Bot. Jahrb. XXVI. (1899) 571 et Arac. exs. et illustr. n. 289. — *D. Spruceana* Schott in Bonplandia VII. (1859) 30; Schott, Prodr. 332. — *D. alliodora* (Linden) Regel in Gartenfl. (1870) t. 672. — Caudiculus brevis vix 1 dm longus. Foliorum petioli 2,5—3 dm longi, vix ad medium usque vaginati, ex viridi et albo variegati, lamina lanceolato-oblonga, basi acuta, apicem versus sensim angustata, longe acuminata, 2—2,5 dm longa, 8—9 cm lata, nervis lateralibus I. utrinque pluribus angulo acuto adscendentibus, cum secundariis subtus prominentibus. Pedunculus circ. 0,75 dm longus. Spatha 1,2—1,5 dm longa, viridescens, vix cuspidata, acuta. Spadicis inflorescentia feminea plerumque sessilis circ. 6 cm longa a mascula aequilonga vel etiam paulum longiore interstitio interdum brevior floribus sterilibus densiuscule obsito separata. Florum femineorum ovaria depressa 1—2-locularia, staminodiis 4—5 clavatis 3 mm longis et ultra 1 mm latis cincta — Fig. 26.

Brasilien: Alto Amazonas bei Panuré am Rio Uaupes (Spruce n. 2625). — Peru: Maynas, Yurimaguas (Poeppig n. 2401. — Herb. Wien).

24. *D. parvifolia* Engl. n. sp. — Caudiculus erectus circ. 3 dm longus, internodiis 2—3 cm longis. Foliorum petiolus quam lamina 4-plo brevior circ. 5 cm longus, ultra medium vagina late amplectente 3 cm longa et latere antico 1 cm lata instructus, lamina lanceolata valde inaequilatera, a medio utrinque angustata, basi subacuta, apice subfalcatum in acumen angustata, circ. 2 dm longa, 3,5—5 cm lata, nervis lateralibus I. utrinque circ. 7 a costa tenui angulo circ. 40° abeuntibus, arcuatim adscendentibus subtus leviter prominentibus. Pedunculi plures 5—6 cm longi. Spathae circ. 8—9 cm longae pars inferior 4 cm longa, 1 cm ampla, pars superior lanceolata circ. 5 cm longa, 1,5 cm lata, longe acuminata. Spadicis haud stipitati inflorescentia feminea circ. 4 cm longa a mascula circ. 3,5 cm longa interstitio inferne nudo superne floribus paucis sterilibus obsesso separata. Florum femineorum ovaria depressa, 2-locularia, staminodiis 4 late cuneatis obtusis cincta. Florum sterilium synandrodia 3—4-loba. Florum masculorum synandria plerumque leviter 4-loba. Baccae subglobosae 1—2-spermae circ. 5 mm diametentes. — Fig. 27.

Hylaea: Flores bei Manãos in der Prov. Rio Negro (E. Ule n. 5002. — Blühend im Dez. 1901. — Herb. Berlin).

25. *D. gracilis* Huber in Bol. Mus. Para IV. (1906) 540. — Caudex gracilis ascendens, foliorum vaginis dense obtectus. Foliorum petiolus quam lamina circ. duplo brevior 5—8 cm longus, vagina 2—3 cm longa apice rotundato-auriculata instructus, lamina tenuis oblongo-lanceolata vel obovato-oblonga, basi acuta, apice longiuscule falcato-acuminata, circ. 1,5 dm longa, 3,5—4 cm lata, nervis lateralibus I. utrinque circ. 10. Pedunculus fructifer deflexus. Spatha pallide viridis. — Reliqua ignota.

Hylaea: Prov. Para, Pampa del Sacramento (Leche. — Herb. Mus. Para).

Nota. Species priori certe valde affinis et fortasse cum ea conjungenda. Notas essentielles hanc speciem a priore distinguentes in diagnosi cli. Huber invenire non possum; attamen plantam non vidi itaque sub titulo speciei numero.

Species bene distinctae, at incertae sedis.

26. *D. Brittonii* Engl. n. sp. — Foliorum petiolus laminae dimidium superans, lamina oblongo-lanceolata basi subobtusata ab infima tertia parte sursum longe angustata et cuspidato-acuminata, 4,5 dm longa, inferne 1,4 dm lata, costa inferne 8 mm crassa, superne evanescente, nervis lateralibus I. utrinque circ. 18 angulo circ. 30° a costa abeuntibus prope marginem adscendentibus. Spathae cum acumine 2 cm longo 3,5 dm longae 4 cm amplae pars inferior convoluta 2 dm longa, 4 cm ampla, pars superior aperta oblongo-lanceolata, 1,5 dm longa, 4 cm lata. Spadicis pars infima nuda circ.

2 cm longa, inflorescentia feminea circ. 1,6 dm longa a mascula 1 dm longa densiflora interstitio brevi floribus paucis sterilibus obsito separata. Florum femineorum pistilla depressa staminodiis 4—5 claviformibus cincta.

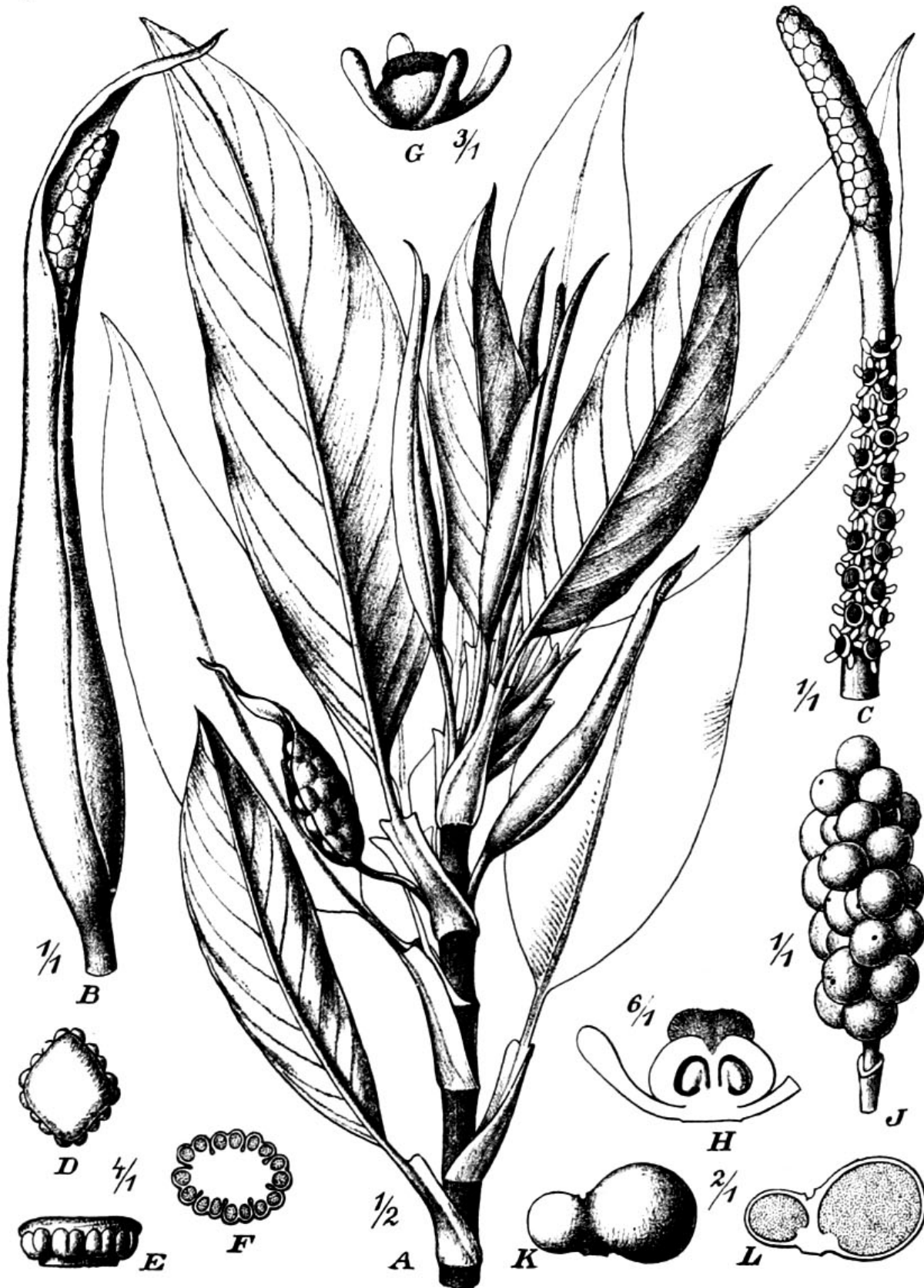


Fig. 27. *Dieffenbachia parvifolia* Engler. A Habitus. B Inflorescentia. C Spadix. D Flos masculus desuper visus. E Idem a latere visus. F Idem transversaliter sectus. G Flos femineus. H Idem longitudinaliter sectus. J Spadix fructifer. K Fructus. L Idem longitudinaliter sectus. — Icon. origin.

Subäquatoriale andine Provinz: Columbia, Santa Marta, um 80 m ü. M. (Herb. H. Smith n. 2764 als *D. Wendlandii*. — Blühend Juni).

Nota. Haec planta minime eadem ac *Dieffenbachia Wendlandii* Schott, quae foliis multo latioribus praedita ad *Dieffenbachiam sequinam* pertinet.

27. *D. aglaonematifolia* Engl. n. sp. — Caudex 1—1,5 m altus. Foliorum petiolus laminam subaequans circ. 3 dm longus, ad medium usque late vaginatus, lamina oblongo-lanceolata, utrinque fere aequaliter angustata, 3,7 dm longa, medio 1,3 dm lata, costa 8 mm crassa, nervis lateralibus I. utrinque circ. 13 angulo circ. 45° arcuatim adscendentibus inter se 1,5—2 cm remotis. Spathae viridis 3 dm longae pars inferior clausa circ. 1,8 dm longa, pars superior aperta 1,2 dm longa et inferne 8 cm lata. Spadicis inferne vix nudi et 2 cm lati inflorescentia feminea 1,3 dm longa a mascula fertili 7 cm longa 1,2 cm crassa interstitio 3 cm longo floribus sterilibus sparse obsito separata. Florum femineorum ovaria depressa staminodiis 3—4 claviformibus cincta.

Südbrasilianische Provinz: Paraguay, in Sümpfen der Cordillera de Altos (Hassler, Pl. paraguens. n. 2129. — Blühend Dezemb. 1904. — Herb. Universität Genf).

Plantae mihi omnino dubiae et verisimiliter ad species descriptas supra enumeratas pertinentes.

- D. membranulifera* Regel in Ind. sem. Hort. Petrop. (1861) 37. — Nomen.
- D. longifolia* Hort. ex Gentil, Pl. cult. serres Jard. bot. Brux. (1907) 75. — Nomen.
- D. Chelsoni* Hort. ex Gentil, Pl. cult. serres Jard. bot. Brux. (1907) 75. — Nomen.
- D. Fournieri* Hort. ex Gardn. Chron. (1890) II. 70. — Nomen.
- D. Leoncae* Hort. ex Rev. Hort. (1894) 251. — Nomen.
- D. Makoyana* Hort. ex Gardn. Chron. (1890) II. 70. — Nomen.

Tribus V. *Zantedeschieae* Engl.

Zantedeschieae Engl. in Engl. u. Prantl, Pflanzenfam. II. 3. (1887) 136 excl. *Typhonodorum* in Engl. Pflanzenreich IV. 23 Da. (1912) 25. — Trib. *Richardieae* Schott, Syn. Ar. (1856) 131, Prodr. Ar. (1860) 324; Engl. in DC. Mon. Phan. II. (1879) 69. — Characterem vide in Engl. Pflanzenreich IV. 23 Da. p. 25.

58. *Zantedeschia* Spreng.

*Zantedeschia**) Spreng. Syst. III. (1826) 765; Baillon in Bull. Soc. Linn. Paris I. (1880) 254; Engl. in Engler's Bot. Jahrb. IV. (1883) 64 et in Engl. u. Prantl, Pflanzenfam. II. 3. (1894) 135. — *Richardia* Kunth in Mém. Mus. Paris IV. (1815) 437 t. 20, Enum. III. (1841) 58; Schott, Syn. (1856) 131, Gen. Ar. (1858) t. 62, Prodr. Ar. (1860) 324; Endl. Gen. (1840) n. 1696, p. 238; Engl. in DC. Mon. Phan. II. (1879) 326; Benth. et Hook. f. Gen. III. (1883) 982, non L. — *Calla* L. Syst. ed. 1. (1735), Spec. ed. 1. (1753) 968, pr. p. (Commel. Hort. 1, t. 50). — ? *Otosma* Raf. Fl. Tellur. IV. (1836) 8 (ex Ind. Kew.). — *Arodes* O. Ktze. Rev. gen. II. (1891) 739. — De ramificatione confer Engler in Nova Acta Acad. Nat. Cur. XXXIX. n. 3. (1876) 183, 184, t. 6.

Flores unisexuales nudi. Flores masculi 2—3-andri: Staminum antherae cuneato-quadratae, compressulae, sessiles, connectivo crasso apice truncato, thecis oblongis basin fere attingentibus extrorsis poro verticali aperientibus, pollen in farciminulis emittentibus. Flores feminei 4—5-gyni: Raro staminodia 3 spathulata apice incrassata pistillum circumdantia, plerumque nulla. Ovarium breviter ovoideum in stilum brevem attenuatum, vel stilo destitutum, 4—5-loculare; ovula in loculis plerumque 4, biseriata, anatropa, funiculo brevi placentae angulari affixa; stigma hemisphaerico-discoideum.

*) Nomen in honorem botanici Francesco Zantedeschi, qui anno 1825 commentarium de plantis raris apium Brescianorum et Bergamascorum edidit.

Baccae obovoideae vel subglobosae, 4—5-loculares, loculis 1—2-spermis. Semen ovoideum, anatropum, funiculo brevi affixum, rhaphe elevata in strophium parvum desinente, testa longitudinaliter elevato-striata, tegmine tenui laevi. Embryo axilis in albumine copioso. — Herbae austro-africanae rhizomate crasso folia plura longe petiolata atque pedunculos nonnullos eodem anno emittente. Foliorum petiolus spongiosus, interdum inferne setosus, lamina lanceolata vel sagittata vel hastata, raro cordato-sagittata, nervis lateralibus I. et II. numerosis in marginem excurrentibus. Pedunculus longus, folia aequans vel superans. Spatha majuscula alba vel ± lutea vel flava vel sulfurea, raro rosea, interdum in fundo atropurpurea, tubo vegeto-persistente, brevior vel longior, fauce aperta, lamina explanata, apice recurva atque cuspidata.

Clavis specierum.

- A. Florum femineorum plurimorum pistilla staminodiis circumdata. Foliorum lamina immaculata cordato-sagittata. . . 1. *Z. aethiopica*.
- B. Florum femineorum omnium aut mediorum et supremorum pistilla staminodiis haud circumdata. Foliorum lamina immaculata vel maculata raro lanceolata, saepius sagittata vel hastata, raro cordata.
 - a. Foliorum lamina anguste lanceolata, basi acuta. Spatha rosacea 2. *Z. Rehmannii*.
 - b. Foliorum lamina sagittata, hastata vel cordata. Spatha flava vel lutea aut alba.
 - α. Foliorum lobus anticus elongato-triangularis vel oblongus, supra lobos posticos latitudine sua duplo vel magis longior.
 - I. Foliorum lamina immaculata. Spatha flava.
 - 1. Herba valde robusta. Foliorum lobus anticus 2—5 dm longus, lobi postici 0,6—1,5 dm longi. Pedunculus superne 4 cm crassus . . 3. *Z. angustiloba*.
 - 2. Herba robusta. Foliorum lobus anticus 1,8—2 dm longus, lobi postici 2—3,5 cm longi . . 4. *Z. macrocarpa*.
 - II. Foliorum lamina albo-maculata. Spatha alba . . 5. *Z. albo-maculata*.
 - β. Foliorum lobus anticus late ovato-oblongus vel late triangularis latitudine sua haud vel circ. 1½-plo longior. Spatha flava vel lutea.
 - I. Foliorum petiolus subtus minute setulosus, lamina hastata vel sagittata. Spathae viridi-luteae vel stramineae fundus intus atropurpureus.
 - 1. Foliorum lamina albo-maculata 6. *Z. melanoleuca*.
 - 2. Foliorum lamina immaculata 7. *Z. oculata*.
 - II. Foliorum petiolus haud setulosus, lamina ovata vel orbiculari-ovata, cordata 8. *Z. Elliottiana*.

Plantae hybridae.

Z. albo-maculata × *hastata*. — *Z. melanoleuca-Rehmannii*. — *Z. Rehmannii* × *Elliottiana*.

Species incertae.

Richardia nilotica W. Wats. — *R. Rossii* Chalwin.

1. *Z. aethiopica* (L.) Spreng. Syst. Veg. III. (1826) 715; Baill. in Bull. Soc. Linn. Paris I. (1880) 254; Engl. in Engler's Bot. Jahrb. IV. (1883) 64. — *Callia aethiopica* L. Spec. ed. 1. (1753) 968; Bot. Mag. t. 832; Jacq. Fragm. 29, t. 32, fig. 3. — *Colocasias aethiopica* Spreng. in Link, Handb. I. (1829) 267. — *Richardia*

africana Kunth in Mém. Mus. Hist. nat. Paris IV. (1815) 433 t. 20, Enum. III. (1841) 58; Schott, Syn. (1856) 131, Gen. Aroid. (1858) t. 62, Prodr. (1860) 324; Engl. in DC. Mon. Phan. II. (1879) 327; N. E. Brown in Djer, Fl. cap. VII. (1897) 38. — Herba robusta, succosa laete viridis. Foliorum petiolus laevis 0,4—1 m et ultra (1,5 m) longus, lamina crassiuscula, viridis, cordato-sagittata vel sagittata, apice obtuso vel subacuto cuspidata, 1,5—4,5 dm longa, 1—2,5 dm lata, lobus anticus latitudine sua $1\frac{1}{2}$ — $1\frac{3}{4}$ -plo longior, lobis posticis semiovatis quam anticus 3—4-plo brevioribus. Pedunculus longus. Spathae 1—2,5 dm longae tubus brevis in fundo flavens, lamina leviter recurva, subrepentino in cuspidem subulatam angustata, candida, interdum viridescens. Spadicis inflorescentia feminea masculae circ. quartam partem longitudine aequans. Florum femineorum ovaria 3—5-locularia, stilo brevi instructa, staminodiis plerumque tribus cincta. Baccae breviter ovoideae, stili vestigio apiculatae, flavescentes, circ. 1—1,2 cm diametientes; semina obovoideo-subglobosa, 3 mm diametientia. — Fig. 28.

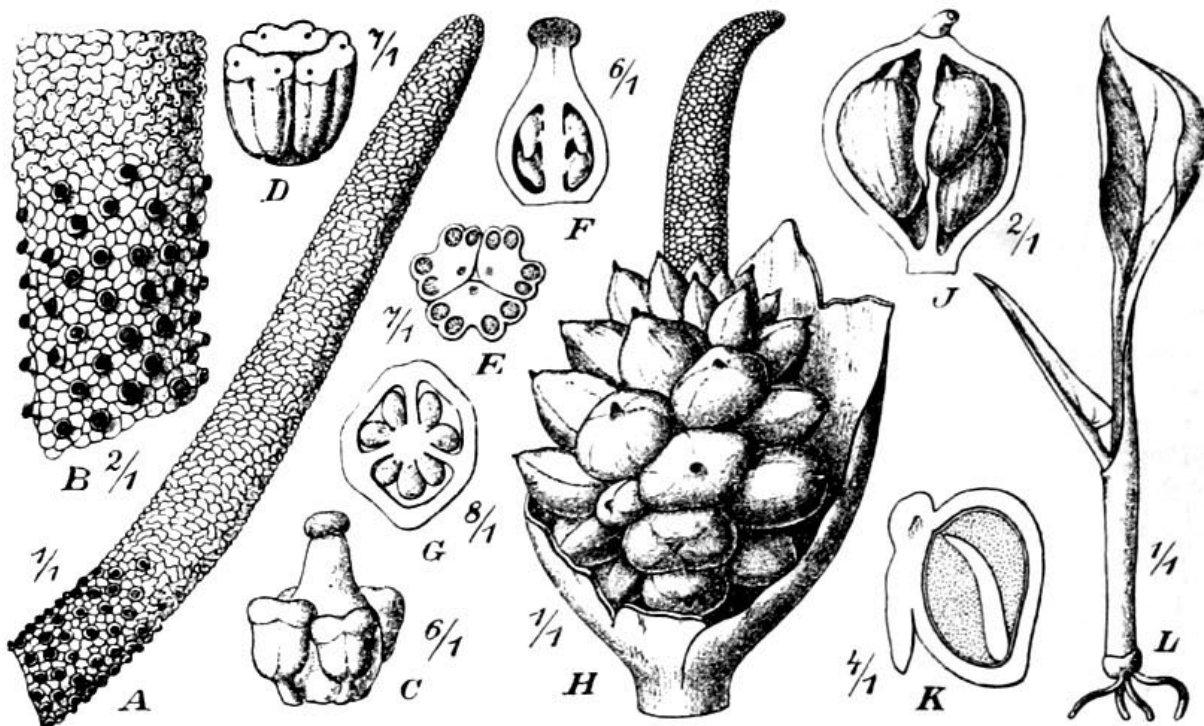


Fig. 28. *Zantedeschia aethiopica* (L.) Spreng. A Spadix. B Ejusdem pars flores masculos et femineos gerens. C Flos femineus cum staminodiis. D Flos masculus. E Ejusdem sectio transversalis. F Pistilli sectio longitudinalis. G Ejusdem sectio transversalis. H Spadix fructifer. J Bacca aperta. K Semen. L Planta germinans. — Icon. origin.

Südwestliches Kapland: Sehr häufig zu vielen Tausenden auf sumpfigen Wiesen und an Ufern um Kapstadt (Pappe — Herb. Kew; Drège, Wawra — Herb. Hofmus. Wien; Mac Owan, Herb. austro-afric. n. 1045, 1735 — Herb. Berlin u. a.; Wilms n. 3782 — Herb. Berlin; A. Engler im Jahr 1902 und 1905. — Blühend Juli, Aug., Sept.); am Paekhuisberg, um 460 m (R. Schlechter n. 10810. — Herb. Berlin); am Tyger Berg unter 330 m (Drège — Herb. Kew); Riversdale Bezirk, Zoetemelko River (Gill — Herb. Kew).

Südostafrikanisches Küstenland: Baziya: Shiloh; Gatuanazana (R. Baur, Flora transkeiana et ciskeiana n. 1167. — Herb. Berlin). Pondoland (Bachmann — Herb. Berlin; C. Beyrich n. 355 — Herb. Berlin). Natal: Alexandra County, Friedenau, um 600 m (Rudatis n. 699. — Herb. Berlin); Inanda (Wood n. 286. — Herb. Kew).

Var. *minor* Engl. — Tota planta florens 3—4 dm alta, foliis et spatha minoribus. Als »Little Gem« in englischen Gärten 1894 oder 1895 kultiviert.

Var. *umganiensis* Leichtlin et Engl. in litt. — Foliorum lamina ovato-cordata a medio sursum angustata, cuspidate 2 cm longa subuliformi instructa, tota circ. 2,5 dm

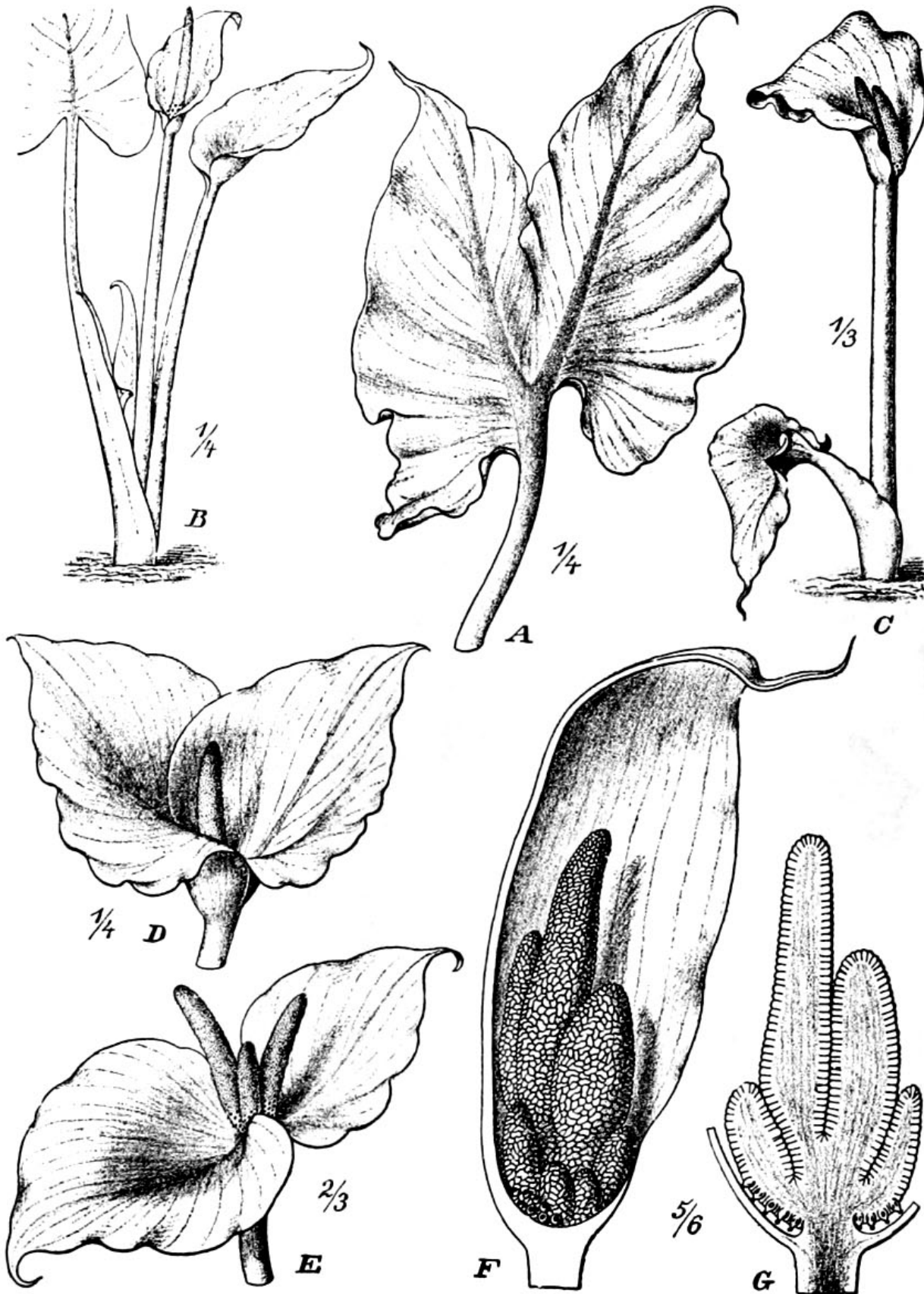


Fig. 29. *Zantedeschia aethiopica* (L.) Spreng. A *Lusus bifida* Engl. B *Lusus luxurians* Engl.; C—E *Lusus duplicata* Engl.; F, G *Lusus ramosa* Engl. — Icon. origin. praeter F, G (quae ex Gardn. Chron. 1893).

longa, 1,2 dm lata, lobis posticis semiovatis quam anticus triplo brevioribus. Spathae lamina lata.

Südostafrikanisches Hochland: Natal, bei den Howick Wasserfällen von W. Nelson 1899 gefunden.

Lusus **bifida** Engl. — Foliorum lamina ab infima quarta parte lobi antici bifida, costa bicruri. — Fig. 29 A.

Im Bot. Garten zu München 1877 beobachtet. — Herb. Berlin.

Lusus **luxurians** Engl. — Folii spathae antecedentis rite petiolati lamina in spatham albam mutata. Interdum spatha secunda spadices 2 includens. — Fig. 29 B.

Im Bot. Garten zu Heidelberg entstanden — Herb. Al. Braun — Berlin.

Lusus **duplicata** Engl. — Spathae duae ad basin spadicis simplicis, interdum ad basin spadicum duorum. — Fig. 29 C—E.

Tritt nicht selten in Gartenkulturen auf.

Lusus **ramosa** Engl. — Spatha simplex, sed spadix e basi pluriramosus digitatus, ramis 5—6 longitudine valde diversis. — Fig. 29 F, G.

Beschrieben in Gardn. Chron. (1895) XVII. 135, fig. 19, 20.

2. **Z. Rehmannii** Engl. in Engler's Bot. Jahrb. IV. (1883) 63. — *Richardia Rehmannii* N. E. Brown ex Harrow in Gard. Chron. (1888) IV. 570 (lapsu *Lehmannii*); Watson in Gard. Chron. (1892) XII. 124, (1893) XIV. 770 et (1894) XVI. 364; Krelage in Gartenfl. (1894) 12 et 15, fig. 7; Bot. Mag. (1895) t. 7436; Rev. Hort. (1895) 38 (lapsu *Rhemanni*); N. E. Brown in Dyer, Fl. cap. VII. (1897) 36. — *R. Lehmannii* (lapsu Krelage in Gard. Chron. (1893) XIV. 564, fig. 94. — Foliorum petiolus laevis 1,5—2 dm longus, longe spathae antecedentium ad laminam usque vaginatus, lamina utrinque laete viridis, maculis linearibus pellucidis notata, elongato-lanceolata, valde inaequilatera, petiolo longo decurrens atque apicem versus longe angustata, 2—3 dm longa, medio vix 3 cm lata, latere altero 4 cm tantum lato, nervis lateralibus angulo circ. 45° a costa semitereti abeuntibus. Pedunculus cum spatha folium fere aequans. Spathae circ. 0,7—1,4 dm longae tubus circ. dimidium aequans, limbus obliquus, recurvus, sensim in cuspidem subulatam angustatus, rosaceo-purpureus, intus basin versus purpureus vel albus vel basin versus ex albo viridescens, margine tantum roseus. Spadicis breviter stipitati spathae dimidium haud attingentis inflorescentia feminea quam mascula brevior. Florum femineorum pistilla stilo brevi instructa. Baccae obovoideae vel depressae obtusae 4—2-loculares, 6 mm longae, 5—8 mm crassae, oculis monospermis. Semen circ. 5 mm longum. — Fig. 30 A—D.

Natal: auf steinigem Hügeln im Weenen Distrikt, um 1300—1600 m (Wood n. 5204. — Herb. Berlin), unweit Standerton (Rehmann n. 80. — Herb. Berlin), Heidelberg (Vandefleur — Herb. Kew).

3. **Z. angustiloba** (Schott) Engl. in Engler's Bot. Jahrb. IV. (1883) 64; Durand et Schinz, Consp. Fl. Afr. V. (1895) 477. — *Richardia angustiloba* Schott in Journ. of bot. (1865) 35; Engl. in DC. Mon. Phan. II. (1879) 329; N. E. Brown in Fl. trop. Afr. VIII. (1901) 169 excl. syn. *R. macrocarpa* et *R. Pentlandii*. — *Richardia hastata* Engl. in DC. Mon. Phan. II. (1879) 328 quoad specimen angolense. — *Aroides angustilobum* O. Ktze. Rev. gen. I. (1891) 740. — *Aroides hastatum* Rendle et *A. angustilobum* Rendle in Cat. Afr. Pl. Welw. II. (1899) 90, 91. — *Zantedeschia chloroleuca* Engl. et Gilg in Warburg, Kunene-Sambesi Exped. (1903) 180. — Herba usque 1 m longa, valde robusta. Folia usque 1,6 dm longa; petiolus laevis 6—7 dm longus, breviter vaginatus, superne teres, lamina crassiuscula, supra viridis, demum subtus glaucescens, hastata, lobus anticus lanceolatus apicem versus sensim rectiuscule angustatus vel lineari-lanceolatus 2—5 dm longus, basi 6—8 cm latus, lobi postici 0,6—1,5 dm longi, basi 4 cm tantum lati sensim angustati exitu obtusulo subsursum curvi, sinu lato triangulari profundiusculo distantes retro-extrorsi. Pedunculus circ. 1 m longus, 1 cm crassus. Spatha 1 dm longa, 6 cm lata, sulfurea, basi intus sanguinea. Spadicis stipite 1 cm longo suffulti inflorescentia feminea circ. 2,5 cm longa, circ. 8 mm

crassa, inflorescentia mascula 2.5 cm longa, 5 mm crassa. Pistillorum ovaria subglobosa, stilo brevissimo et stigmate 1 mm diametiente instructa.

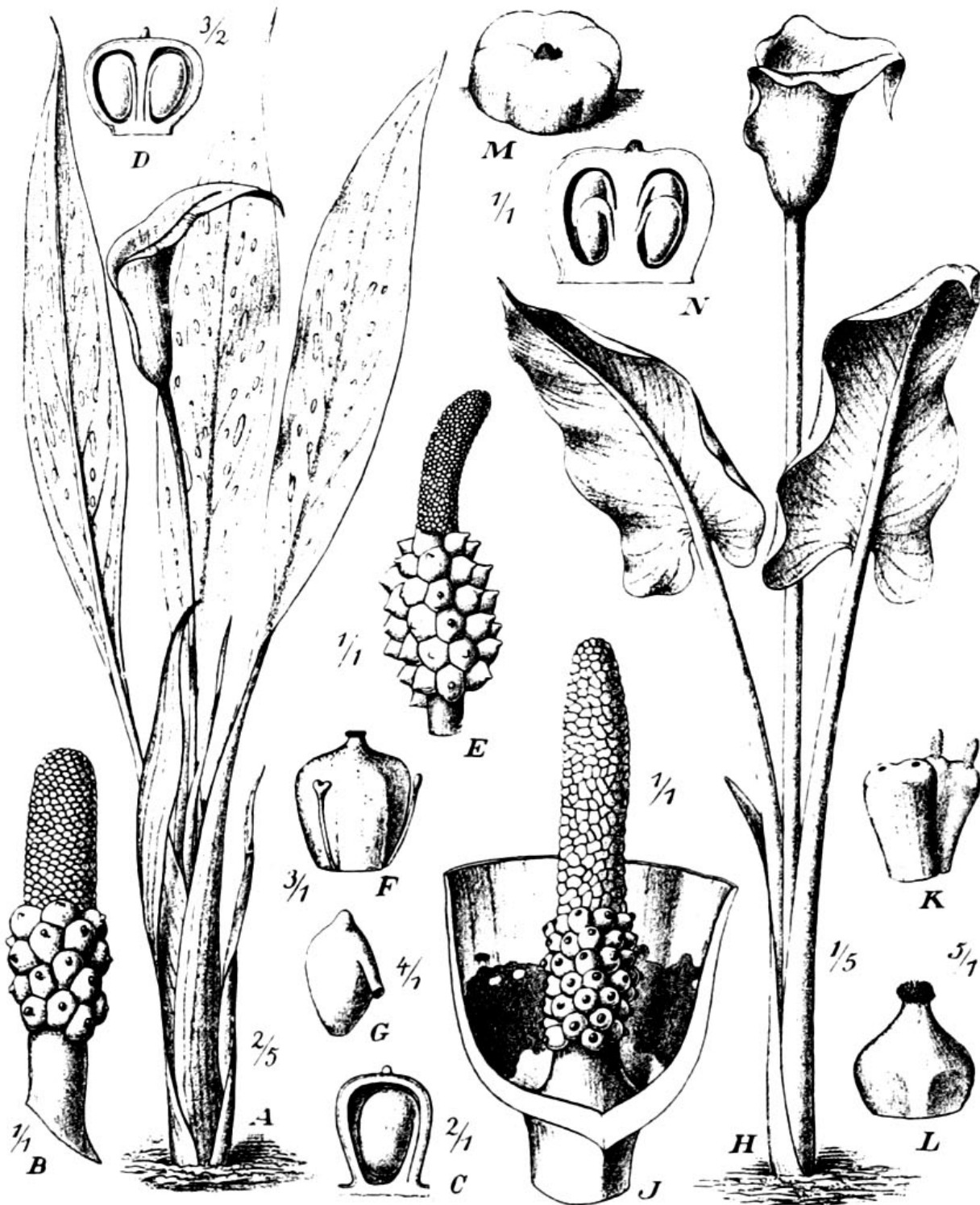


Fig. 30. A—D *Zantedeschia Rehmannii* Engl. A Habitus. B Spadix. C Pistillum monomerum longitudinaliter sectum. D Pistillum dimerum longitudinaliter sectum. — E—G *Z. albo-maculata* (Hook. f.) Engl. E Spadix fructifer. F Bacca cum staminodiis. G Semen. — H—M *Z. macrocarpa* Engl. H Habitus. J Spathae pars inferior et spadix. K Stamina. L Pistillum. M Bacca desuper visa. N Eadem longitudinaliter secta. — Icon. origin.

Westafrikanische Waldprovinz: Angola, im Distrikt Pungo Andongo, am rechten Ufer des Cuanza, in tiefen Sümpfen zwischen den Inseln Calemba und Quisonde um 680—1260 m (Welwitsch, it. angol. n. 230. — Herb. De Candolle). — Süd-

Angola: im Distrikt Huilla bei Lopollo, häufig in Ufersümpfen, um 1680 m (Welwitsch n. 232 — Herb. Berlin, Kew; n. 232/2 — Herb. Kew), Sümpfe am Ivantala-See (Welwitsch n. 232 3 — Herb. Kew); am linken Kubango-Ufer unterhalb Kueio, 1120 m ü. M., an sumpfigen Stellen des Flußufers (Baum n. 398).

4. **Z. macrocarpa** Engl. in Engler's Bot. Jahrb. IV. (1883) 64 et Arac. exs. et illustr. n. 27; Durand et Schinz, Consp. Fl. Afr. V. (1895) 477. — *Richardia macrocarpa* Watson in Gard. Chron. (1892) XII. 124. — *Calla Pentlandii* Whyte ex Watson in Gard. Chron. (1892) XII. 124. — *Richardia Pentlandii* Whyte ex Watson in Gard. Chron. (1894) XV. 590, Bot. Mag. (1895) t. 7397. — *Zantedeschia Pentlandii* in Gartenflora (1898) t. 1456. — *Richardia angustiloba* N. E. Brown (non Schott) in Dyer, Fl. cap. VII. (1897) 37. — Herba robusta. Foliorum petiolus elongatus 3—4 dm et ultra longus, laevis, breviter vaginatus, lamina crassiuscula, utrinque viridis, elongato-triangularis vel elongato-oblonga sagittata vel hastata, lobus anticus e basi apicem versus sensim angustatus, 1,8—2 dm longus, 5—7 cm latus, lobi postici subtriangulares obtusi retrorsi vel interdum extrorsi quam anticus septies vel magis breviores, 2—3,5 cm longi, circ. 3 cm lati, nervis lateralibus mediis atque superioribus angulo circ. 30—40° a costa abeuntibus. Pedunculus folia aequans, superne 5—6 mm crassus, obovoideus, cuspidate 1 cm longa instructus. Spathae sulfureae intus basi atropurpureae extus pallidioris 1—1,4 dm longae limbus obliquus. Spadicis breviter stipitati dimidium vel tertiam partem spathae aequantis inflorescentia feminea quam mascula triplo brevior. Florum femineorum ovaria stigmatibus sessilibus coronata. Baccae 1,5 cm diametientes subglobosae 3—6-loculares, loculis 1—3-spermis. Semina varia, subovoidea vel hinc inde compressione angulata, 3 mm longa, 4—5 mm crassa. — Fig. 30 H—N.

Südstafrikanisches Hochland: Transvaal: Trigards Fontein (Rehmann n. 82, 83. — Herb. De Candolle), Mapoch Bezirk, im Westen von Lydenburg (E. G. Galpin — nach N. E. Brown), im Fluß bei Lydenburg (Wilms n. 1574. — Herb. Berlin).

5. **Z. albo-maculata** (Hook. f.) Baill. in Bull. Soc. Linn. de Paris (1880) 254; Engl. in Engler's Bot. Jahrb. IV. (1883) 64. — *Richardia albo-maculata* Hook. f. in Bot. Mag. (1859) t. 5140; Schott, Prodr. (1860) 325; Lem. in Ill. Hort. (1860) t. 255; Regel, Gartenfl. (1865) t. 462; Fl. des serr. et jard. XXI. t. 2258; Engl. in DC. Mon. Phan. II. (1879) 327; N. E. Brown in Dyer, Fl. cap. VII. (1897) 37. — Foliorum petiolus usque 1 m longus, 1—2 cm crassus, lamina usque 4 dm longa, subflaccida ubique albomaculata, elongato-hastata, apice cuspidato-apiculata, lobo antico 3 dm longo, inferne 0,75—1 dm lato, lobis posticis triangularibus obtusis vel acutis patentibus sinu aperto divaricatis, 0,75—1 dm longis, nervis lateralibus supra vix conspicuis. Spathae circ. 4 dm longae tubus quam lamina sesquibrevior, infundibuliformis, in fundo purpurascens, lamina sensim in cuspidem subulatam angustata, candida, interdum viridescens. Spadicis inflorescentia feminea circ. 1,5—2 cm longa, 4—5 mm crassa, mascula aequilonga, paullum tenuior. Ovaria 4—5-locularia, stigmatibus discoideo sessilibus coronata. — Fig. 30 E—G.

Südstafrikanisches Hochland, im Übergang zum Hochland: Natal, Alexandra County, Friedenau, Ellesmere, an mit hohem Gras und Gebüsch bewachsenen Abhängen, um 600 m (Rudatis n. 488, 1237. — Blühend im Nov. — Herb. Berlin). — Transvaal: Houtbosch (Rehmann n. 94. — Herb. Berlin).

Östliches Kapland: Bazeia, um 660—800 m (Baur n. 433. — Herb. Kew, Berlin), Griqualand East, an steinigten Abhängen um Kokstad bei 1500 m ü. M. (Tyson n. 1590. — Herb. Kew). — Zentrales Kapland: Aliwal North-Bezirk; Witte Bergen, um 1600—1900 m (Drège n. 3572. — Herb. Kew).

6. **Z. melanoleuca** (Hook. f.) Engl. in Engler's Bot. Jahrb. IV. (1883) 64. — *Richardia melanoleuca* Hook. f. in Bot. Mag. (1869) t. 5765; Engl. in DC. Mon. Phan. II. (1879) 328; N. E. Brown in Dyer, Fl. cap. VII. (1897) 38. — *Richardia Sprengeri* Comes in Atti R. Ist. Incorr. Napoli 5. Ser. III. Mem. 7. (1902, con tav.); Bot. Centralbl. LXXXIX. (1902) 660. — Herba robusta. Foliorum petiolus inferne minute setulosus,

lamina crassiuscula, maculis pellucidis albis notata, hastata, lobus anticus deltoideus vel ovato-deltoideus acutus, circ. 1,5—1,75 dm longus, 1—1,5 dm latus, lobi postici obtusiusculi sinu angusto vel amplo sejuncti, patentes, latitudine variables, nervis lateralibus tenuibus. Pedunculus tenuis inferne setis nigris obsitus circ. 4—6 dm longus. Spatha oblonga, apice recurva, pallide straminea, in fundo plaga ampla atropurpurea notata, 8—9 cm longa, 6—7 cm lata, cuspidate 0,5—1 cm longa instructa. Spadicis brevis tertiam partem spathae paullum superantis inflorescentia feminea 1,25—2 cm longa, mascula 1,5—2 cm aequans, aurantiaca. Ovaria subglobosa, viridia, 2—3-locularia, stilo brevi vel subnullo stigmate aurantiaco discoideo coronata.

Südostafrikanisches Hochland: Natal: Inanda (Wood n. 431. — Herb. Kew), an anderen Orten (Buchanan, Gerrard n. 1525, Sanderson n. 209. — Herb. Kew). — Griqualand (*Richardia Sprengeri* Comes).

Var. *tropicalis* N. E. Brown. — *Richardia melanoleuca* var. *tropicalis* N. E. Brown in Fl. trop. Afr. VIII. (1901) 168. — Foliorum petiolus haud setulosus, lamina juvenula immaculata, adulta maculata, hastata vel sagittata, 2—3,5 dm longa, 1,1—3,5 dm lata, lobis posticis obtusis. Spatha usque 1,3 dm longa, citrina, intus basi purpurea.

Nyassaland: Namasi (Cameron — Herb. Kew); Maschonaland: Six mile Spruit bei Salisbury (Mrs. Evelyn Cecil n. 149 — Herb. Kew).

7. *Z. oculata* (Lindl.) Engl. — *Calla oculata* Lindl. in Gard. Chron. (1859) 788. — *Zantedeschia hastata* (Hook. f.) Engl. in Engler's Bot. Jahrb. IV. (1882) 4. — *Zantedeschia Lutwychei* Durand et Schinz, Consp. Fl. Afr. V. (1895) 477; Engl. Pflz.welt. Ostaf. C. (1895) 132. — *Richardia hastata* Hook. f. in Bot. Mag. (1860) t. 5176; Schott, Prodr. (1860) 325; Engl. in DC. Mon. Phan. II. (1879) 328; Garden, Dec. (1889); N. E. Brown in Dyer, Fl. cap. VII. (1897) 38 et in Fl. trop. Afr. VIII. (1901) 168. — *Richardia Lutwychei* N. E. Brown in Gard. Chron. (1893) XIII. 568; Rev. Hort. (1896) 60 cum tab. fide autoris; Rev. Hort. (1895) 249. — *Richardia Pride of Congo* Rev. Hort. (1893) 27. — Foliorum petiolus inferne setulosus, lamina immaculata subflaccida hastato-ovata, latitudine longitudinis circ. $\frac{1}{2}$ aequans, apice cuspidato-apiculata, 1,7—2,5 dm longa, lobo antico latitudine sua vix duplo longiore, lobis posticis sinu angusto sejunctis. Spathae viridi-luteae circ. 1,25 dm longae (cum cuspidate 2,5 cm longae) tubus campanulatus, in fundo atropurpureus, laminae subabrupte atque longe cuspidatae aequilongus, nervis lateralibus supra paullum prominulis. Spadicis inflorescentia feminea 2,5 cm longa, mascula 4 cm aequans, vix 1 cm crassa. Ovaria subglobosa, stilo sessili coronata.

Südostafrikanisches Hochland: Transvaal: Lomati-Tal bei Barberton um 1300 m (Galpin n. 1360. — Herb. Kew); Basutoland (Cooper n. 3327. — Herb. Kew); Natal: ohne Standortsangabe (Sanderson — Herb. Kew; Wood n. 2. — Herb. Kew), Alexandra County, Friedenau, an moorigen, sumpfigen Plätzen um 600 m (Rudatis n. 453. — Herb. Berlin).

8. *Z. Elliottiana* (Knight) Engl. — *Richardia Elliottiana* (Knight) W. Watson in Garden and Forest (1892) 330; Duren in Rev. Hort. Belge (1897) 13 cum tab.; Bot. Mag. (1898) t. 7577; N. E. Brown in Fl. trop. Afr. VIII. (1901) 167. — *Calla Elliottiana* Knight in Journ. Roy. Hort. Soc. (1890) XII, Proc. LVIII; W. Watson in Gard. Chron. (1892) XII. 124. — Herba majuscula. Foliorum petiolus laevis circ. 6 dm longus vel longior, superne sulcatus, lamina laete viridis maculis albis elongatis numerosis notata, ovata vel orbiculari-ovata, basi cordata, apice obtuso subulata, circ. 2,2 dm longa et 1,8 dm lata, lobis posticis semiorbicularibus quam anticus circ. triplo brevioribus marginibus sese obtegentibus. Pedunculus quam folia longior. Spathae circ. 1,2—1,5 dm longae extus viridiflavae, intus pulcherrime luteae inferne haud purpureae tubus infundibuliformis circ. 8 cm longus, superne circ. 5 cm amplus, lamina oblique subhorizontaliter expansa in cuspidem viridem 1,5 cm longam exiens. Spadicis sessilis spathae tubum aequantis inflorescentia feminea viridis circ. 3 cm longa, 1,7 cm crassa, inflorescentia mascula cylindrica 4 cm longa, 8 mm crassa aurantiaca. Baccae obovoideae, subglobosae circ. 1,8 cm diametientes, virides.

Südestafrikanisches Hochland: Wahrscheinlich aus dem nördlichen Transvaal stammend, von Knight, dem Gärtner des Kapitäns Elliott im Farnboro-Park zu Hants, aus südafrikanischem Samen erzogen 1890.

Z. albo-maculata × **hastata** Engl. — *Richardia aurata* Hort. ex Rev. Hort. (1893) 27; Mottet in Rev. Hort. (1895) 38.

Diese Hybride wurde in Marseille von J. B. M. Deleuil künstlich erzogen.

Z. melanoleuca × **Rehmannii** Engl. — *Richardia* (Mrs. Roosevelt) *melanoleuca* × *R. Rehmannii* (*violacea*) Gard. Chron. Foliorum lamina medio tantum maculata. Spatha supra basin violaceam flava, violaceo-tincta. — *R. cantabrigiensis* Lynch in Gardn. Chron. (1904) I. 226 est altera forma hybrida, insignis spatha eburneo-flava, inferne intus purpurascens, extus purpurea.

Z. Rehmannii × **Elliottiana** Engl. — »Un *Richardia* hybride à spathe rose« Bois in Rev. hortic. nouv. sér. IX. (1909) 349. — *Richardia* Madame Fosca Ragionieri. — Foliorum lamina atroviridis, maculis albis longis notata, subtriangularis, 4,5 dm longa, 2 dm lata, costa crassa instructa. Spathae juvenulae roseo-violaceae adultae 12 cm longae 6 cm latae tubus ad infimam tertiam partem usque viridescens superne ut lamina alba nervis roseo-violaceo-tinctus, lamina intus pallide fulvescens, marginibus leviter rosaceo-violaceo-tincta.

Diese interessante Hybride wurde von Dr. A. Ragionieri zu Castello bei Florenz erzogen.

Nota. Variat spatha infra supremam tertiam partem emarginata itaque triloba.

Species incertae.

Richardia nilotica (nomen tantum) commemorata a cl. W. Watson in Garden et Forest (1892) 618, spathis albis et roseis, est planta dubia, certe non nilotica; verisimiliter, ut cl. N. E. Brown in Fl. trop. Afr. VIII. p. 169 dixit, pertinet ad *Zantedeschiam Rehmannii*.

Richardia Rossii Chalwin ex W. L. Lewis et Co. in Gardn. Chron. (1897) I. 259, imperfecte descripta a Donald Ross in Gardn. Chron. (1897) I. 58, est planta spontanea, robusta, foliis albo-maculatis, insignis spatha magna aurea.

Tribus VI. Typhonodoreae Engl.

Typhonodoreae Engl. in Nov. Acta Acad. nat. cur. XXXIX. n. 3 (1876) 146 (114), in DC. Mon. Phan. II. (1879) 69 et in Pflanzenreich IV. 23 Da. (1912) 25. — *Zantedeschiae* Engl. in Engl. u. Prantl, Pflzfam. II. 3. (1887) 136 excl. *Zantedeschia*. — Characterem vide in Engl. Pflanzenreich IV. 23 Da. p. 25.

59. Typhonodorum Schott.

Typhonodorum *) Schott in Öst. Bot. Wochenbl. VII. (1857) 69, Gen. Ar. (1858) t. 43, Prodr. (1860) 164; Engl. in DC. Mon. Phan. II. (1879) 331 et in Engler's Bot. Jahrb. I. (1881) 188, in Engl. u. Prantl, Pflzfam. II. 3. (1887) 136; in Pflanzenwelt Ostafri. C (1895) 132, in Engler's Bot. Jahrb. XXXVI. (1905) 235 et in Pflanzenwelt Afrikas II. (1908) 252, 253, Fig. 169, 170; Benth. et Hook. f. Gen. III. (1883) 977; N. E. Brown in Fl. trop. Afr. VIII. (1904) 166. — *Arodendron* Werth in Mitt. d. Sem. f. orient. Sprachen (1904) Abt. III. 54.

Flores masculi fertiles 4—6—8-andri: Stamina in synandrium breve obpyramidatum truncatum connata; antherae connectivo communi appositae, thecis juxtapositis linearibus apicem atque basin synandrii attingentibus, rimula brevi apice aperientibus, pollen in farciminulis emittentibus. Flores masculi steriles inferiores: Staminodia in synandrodium depressum et compressum, subhexagonum, vertice truncatum connata.

*) Nomen compositum ex τυφών (ventus procellosus) et δῶρον (donum).

Flores masculi steriles superiores: Staminodia 3—6 obpyramidata, truncata, irregulariter connata vel tantum conferta. Flores feminei 3—6-gyni: Staminodia cuneiformia supra truncata hinc inde juxta pistilla irregulariter disposita. Pistillum breviter ovoideum, stigmatibus sessilibus discoideo, 3—6-lobis et 3—6-sulcato rubello coronatum, 1—2-ovulatum; ovula 1—2 anatropa, breviter ovoidea, funiculo brevi placentae basilari affixa, micropyle fundum spectantia. Baccae magnae obovoideae, biconvexae, monospermae. Semen obovoideum leviter compressum, testa succosa instructum, exalbuminosum. Embryo macropodus, in semine plumula magna evoluta 2—3-phylla vertice seminis semicirculariter curvata instructus, in aquam dejectum longe natans, ad basin plumulae accrescentis radices emittens et post folia pauca lineari-subulata folia petiolata lamina lanceolata, deinde alia lamina sagittata instructa producens. — Herba maxima, 3—4 m alta, tubere oblongo horizontali, uno latere folia emittente atque ad eorum basin ra-



Fig. 31. *Typhonodorum Lindleyanum* Schott in palude dicta Mwera-Pond insulae Sansibar. In fronte ad sinistrum et dextrum specimen fructiferum, in medio specimen floriferum. — Icon. ex libro Engler, Pflanzenwelt Afrikas, Bd. II reproducta.

dices numerosas crassiusculas producente. Foliorum petioli crassi valde succosi, 6—9 dm longi, late vaginati, vaginis sese includentibus, lamina subtriangularis, basi subtruncata, plerumque sagittata, lobis posticis semiovatis vel triangularibus lobi antici acuti $\frac{1}{4}$ — $\frac{1}{3}$ aequantibus, in specimine adulto 0,75—1,3 m longa, costa basi 1—1,5 cm crassa instructa, nervis lateralibus I. plerumque 3 basalibus, 2 reversis, uno patente, costalibus utrinque circ. 5 erecto-patentibus crassis, nervis lateralibus II. numerosissimis tenuissimis, densissimis, inter se subparallelis in margine exeuntibus. Pedunculus crassus, supra foliorum vaginas 2,5—3,5 dm eminens. Spathae usque 5—8 dm longae tubus oblongus, utrinque attenuatus, fauce constrictus, viridis lamina oblongo-lanceolata, longe acuminata, explanato-concava, quam tubus triplo longior, 5—6 dm longa, 1—1,5 dm lata, albido-viridescens. Spadicis 3,5—5,5 dm longi inflorescentia feminea subconoidea circ. $\frac{1}{6}$ longitudinis aequans, inflorescentia mascula tenuior, infima parte sterilis, fertilis sterili inferiori aequilonga, sterilis superior claviformis medio circ. 1,7—2,2 cm crassa conice attenuata, quam fertilis triplo longior, ad apicem usque synandrodiis instructa.

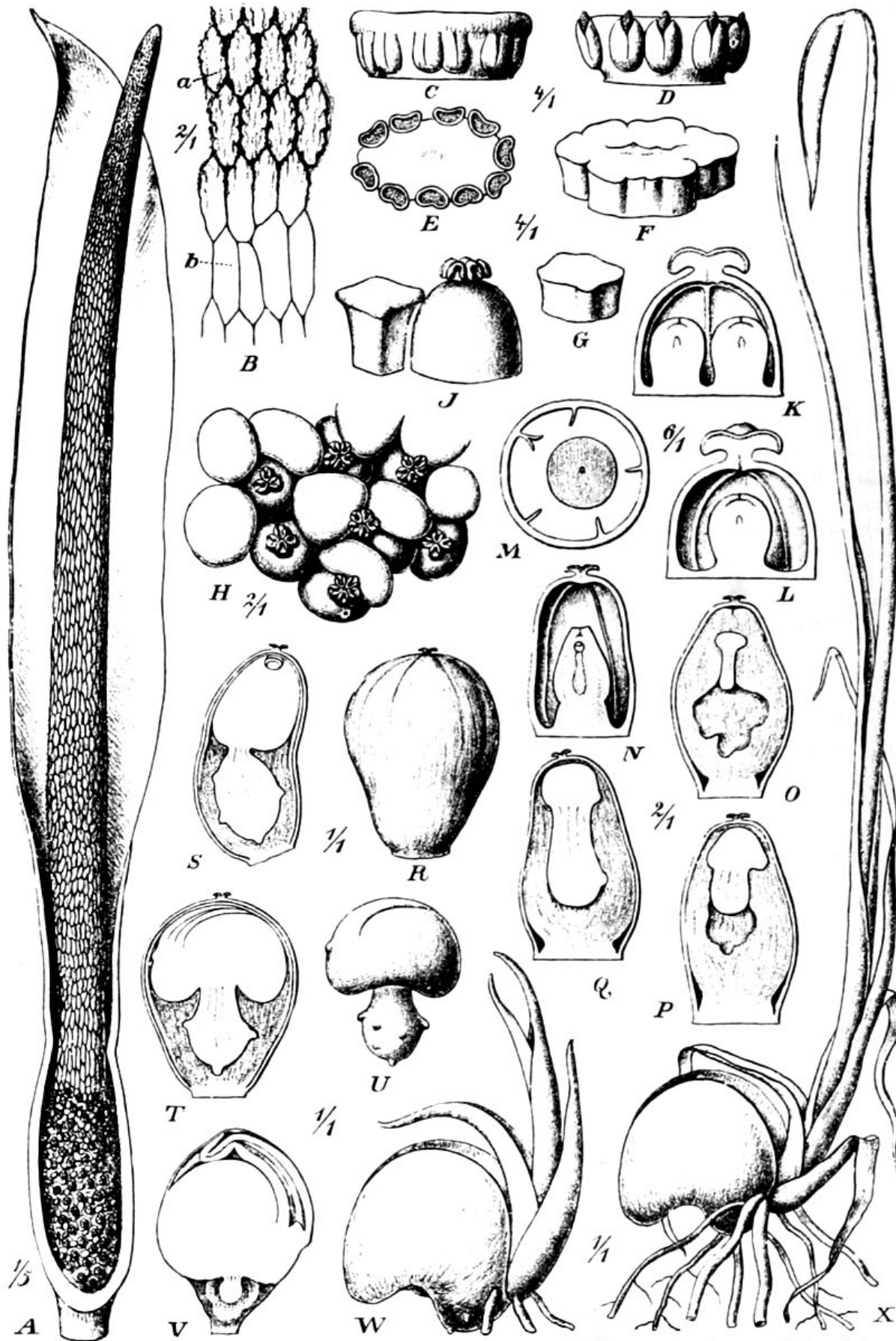


Fig. 32. *Typhonodorum Lindleyanum* Schott. A Inflorescentia spathae dimidio remoto, $\frac{1}{3}$ m. n. B Pars inflorescentiae masculae fertilis et sterilis. C Flos masculus (synandrium) a latere visus. D Idem thecis apertis. E Idem transversaliter sectus. F Idem desuper visus. G Synandrodium ex inflorescentiae parte apicali. H Flores feminei cum staminodiis. J Pistillum cum staminodio. K, L Pistilla longitudinaliter secta. M Pistillum transversaliter sectum. N Pistillum cum ovulo foecundato. O, P Pistilla cum embryo crescente et endospermum comedente. Q Pistillum cum semine exalbuminoso. R Bacca. S, T Eadem longitudinaliter secta, sectio T angulo 90° a sectione S divergens. U Embryo. V Embryo cum processu haustoriali minus evoluto nucelli parte tenuissima circumdato. W, X Plantae germinantes. — Icon. origin.

Species unica.

T. Lindleyanum Schott l. c.; Engl. in DC. Mon. Phan. II. (1879) 332. — *T. madagascariense* Engl. in Engler's Bot. Jahrb. I. (1884) 188 et in Araceae exsicc. et illustr. n. 154. — *Arodendron Engleri* Werth l. c.

Madagassisches Gebiet: Madagaskar: Nossi-bé, »im Waldschatten« (J. M. Hildebrandt n. 3162. — Blühend im Sept. 1879 — Herb. Berlin). — Zentral-Madagaskar (Baron n. 2728. — Herb. Kew). — Mauritius (Philip B. Ayres, Horne im August 1882. — Herb. Kew). — Comoren: Insel Johanna (Kirk im April 1861. »Introduced by the malagash people«).

Ostafrikanisches Wald- und Steppengebiet: Sansibar: in den meisten Bächen der Insel, z. B. am Mwera-Fluß (Stuhlmann n. 1124, Werth, Uhlig. — Einheim. Name: »mgomba y madja baride«. — Herb. Berlin).

Die Pflanze wächst auf Sansibar in großen Massen in den Flüssen; der untere Teil des Stammes befindet sich unter Wasser. »Sie erfüllt in dicht geschlossenen Beständen das Bett der Bäche und läßt daher im offenen Gelände weithin den Verlauf der letzteren erkennen« (Werth). Nach dem Verblühen welkt der obere Teil des Kolbens und der Spatha, während der untere, die weiblichen Blüten umschließende Teil bis zur Reife der zweimarkgroßen bikonvexen Samen grün bleibt. Letztere gelangen, nachdem der Blütenstandstiel sich inzwischen herabgebogen hat, nach endgültigem Abfaulen der Spatha ins Wasser, wo sie sich lange Zeit schwimmend erhalten. Bei der Keimung entwickelt das Pflänzchen zunächst einige schmale, pfriemenförmige Blätter, die allmählich in solche übergehen, welche eine lanzettliche Spreite tragen, bis endlich, ebenso allmählich, die pfeilförmige Blattform zur Ausbildung gelangt« (Werth).

Nota. Teste cl. Kirk semina in insulis Comorensibus comeduntur.

Tribus VII. **Peltandreae** Engl.

Peltandreae Engl. in Nov. Act. Acad. nat. cur. XXXIX. n. 3 (1876) 116 (114), in DC. Mon. Phan. II. (1879) 69, in Engl. u. Prantl, Pflzfam. II. 3. (1887) 136 et in Pflanzenreich IV. 23 Da. (1912) 25. — Characterem vide Engl. Pflanzenreich IV. 23 Da. (1912) 25.

60. **Peltandra** Raf.

*Peltandra**) Raf. in Journ. Phys. et Chem. par Blainville LXXXIX. (1819) 102; Schott, Melet. I. (1832) 19, Syn. Ar. (1856) 50, Gen. Ar. (1858) t. 41, Prodr. Ar. (1860) 157; Endl. Gen. (1840) n. 1685, p. 237; Kunth, Enum. III. (1841) 43; Engl. in DC. Mon. Phan. II. (1879) 334 et in Engl. u. Prantl, Pflzfam. II. 3. (1887) 136; Britton et Brown, Illustr. Fl. North. Un. St. I. (1896) 362. — *Arum* L. Spec. ed. 1. (1758) 966 et autor. — *Calla* Michx. Fl. bor. am. II. (1803) 187. — *Caladium* Hook. Exot. Fl. (1827) 182. — *Lecontia* W. Cooper ex Torr. Comp. (1826) 358. — *Rensselaeria* Beck, Bot. North. and Midl. St. (1833) 382; Darlington Cest. 530.

Flores unisexuales nudi. Flores masculi: Stamina 4—5 florum inferiorum cum ovarii rudimento in synandrium prismaticum vertice umbonatum, superiorum in synandrium vertice truncatum connata; antherae ad basin synandrii usque productae, fere totam altitudinem illius attingentes, thecis juxtapositis lineari-oblongis, vertice rimula brevissima aperientibus. Flores feminei: Staminodia 4—5 in urceolum truncatum 4—5-gonum, ovarium cingentem connata. Ovarium ovoideum, uniloculare, 1—pauciovulatum; ovula orthotropa vel hemiorthotropa, funiculo brevi placentae parietali elevatae prope basin affixa, 1—2-seriata; stilus brevis conicus; stigmatum depresso-capitato vel subhemisphaerico instructus. Baccae subglobosae, 1—paucispermae. Semina ovoidea. — Herbae e rhizomate folia longe petiolata atque pedunculum coetaneum emittentes. Foliorum petiolus longus, longe vaginatus, lamina hastata, nervis lateralibus I., II. et III. tenuibus subparallelis prope marginem nervo colectivo intimo conjunctis, nervis collectivis secundo et tertio proxime juxta marginem procurrentibus. Pedunculus longus.

*) Nomen compositum ex πέλτη (pelta) et ἀνήρ (vir) propter stamina peltiformia.

Spathae flavo-virentis vel albae tubus convolutus, fauce leviter constrictus, lamina concava lanceolata in fructu decidua. Spadicis cylindroidi inflorescentia feminea masculae $\frac{2}{3}$ vel $\frac{1}{4}$ aequans, inflorescentia mascula cum feminea arcte contigua inferne interdum sterilis, pars suprema brevis nuda.

1. *P. sagittifolia* (Michx.) Morong in Mem. Torr. Bot. Club V. (1894) 102; Britton et Brown, Illustr. Fl. North. Un. St. I. (1896) 362 c. fig. — *Calla sagittifolia* Michx. Fl. bor. am. II. (1803) 187. — *Xanthosoma sagittifolia* Chapm. Fl. South. Stat.

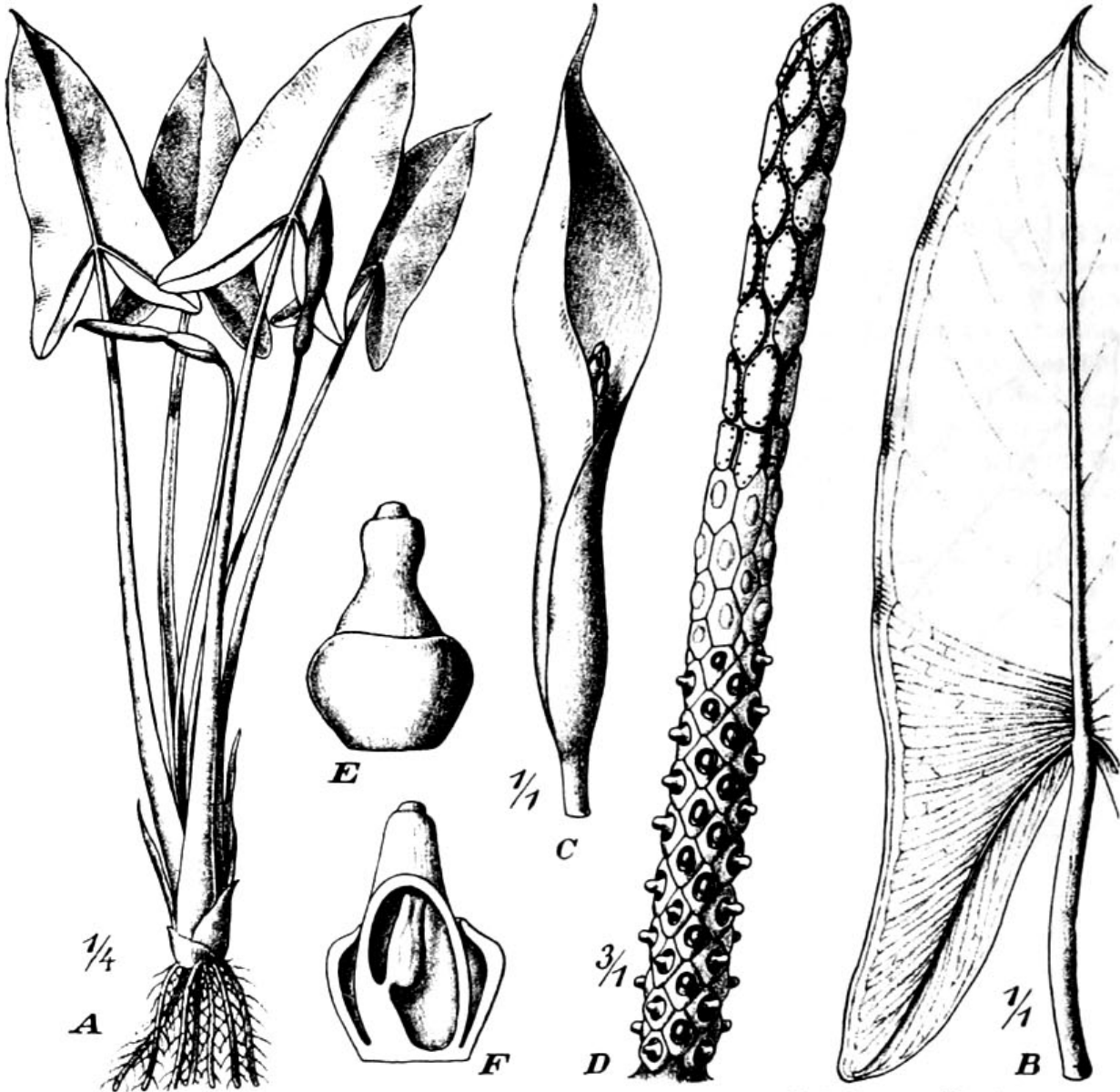


Fig. 33. *Peltandra sagittifolia* (Michx.) Morong. A Habitus. B Folium. C Inflorescentia. D Spadix. E Flos femineus cum urceolo staminodiali. F Idem longitudinaliter sectus. — Icon. origin.

(1860) 441, non Schott. — *Peltandra alba* Raf. New Fl. N. Am. I. (1836) 88. — *P. virginica* Schott, Gen. Ar. (1858) t. 41, f. 16—25, Prodr. (1860) 158 nec Synops.; Engl. in DC. Mon. Phan. II. (1879) 330. — *Lecontia virginica* W. Cooper ex Torr. Comp. (1826) 358. — *Peltandra undulata* Schott, Melet. I. (1832) 19, Syn. (1856) 50 nec Gen. Ar. nec Prodr. — Foliorum petioli circ. 3 dm longi, ad medium vel ad infimam tertiam partem usque vaginati, lamina sagittata, cuspidata, 4—4,5 dm longa, ad lobi anterioris basin 5—6 cm lata, lobis posterioribus anterioribus circiter $\frac{1}{3}$ — $\frac{2}{3}$ aequantibus, sinu triangulari sejunctis, obtusiusculis, nervo colectivo intimo margini approximato. Pedunculus 3—3,5 dm longus. Spathae tubus 2,5—3 cm longus, 1 cm amplus, sub-

fusiformis, viridis, crassiusculus, lamina lanceolata, tenuis, albida, 5—6 cm longa, 2 cm lata. Spadicis 5—6 cm longi inflorescentia feminea 2 cm longa, mascula 3 cm longa. Ovaria ovoidea uniovulata, ovulo supra basin affixo. Staminodiorum urceolus vix angulosus. — Fig. 33.

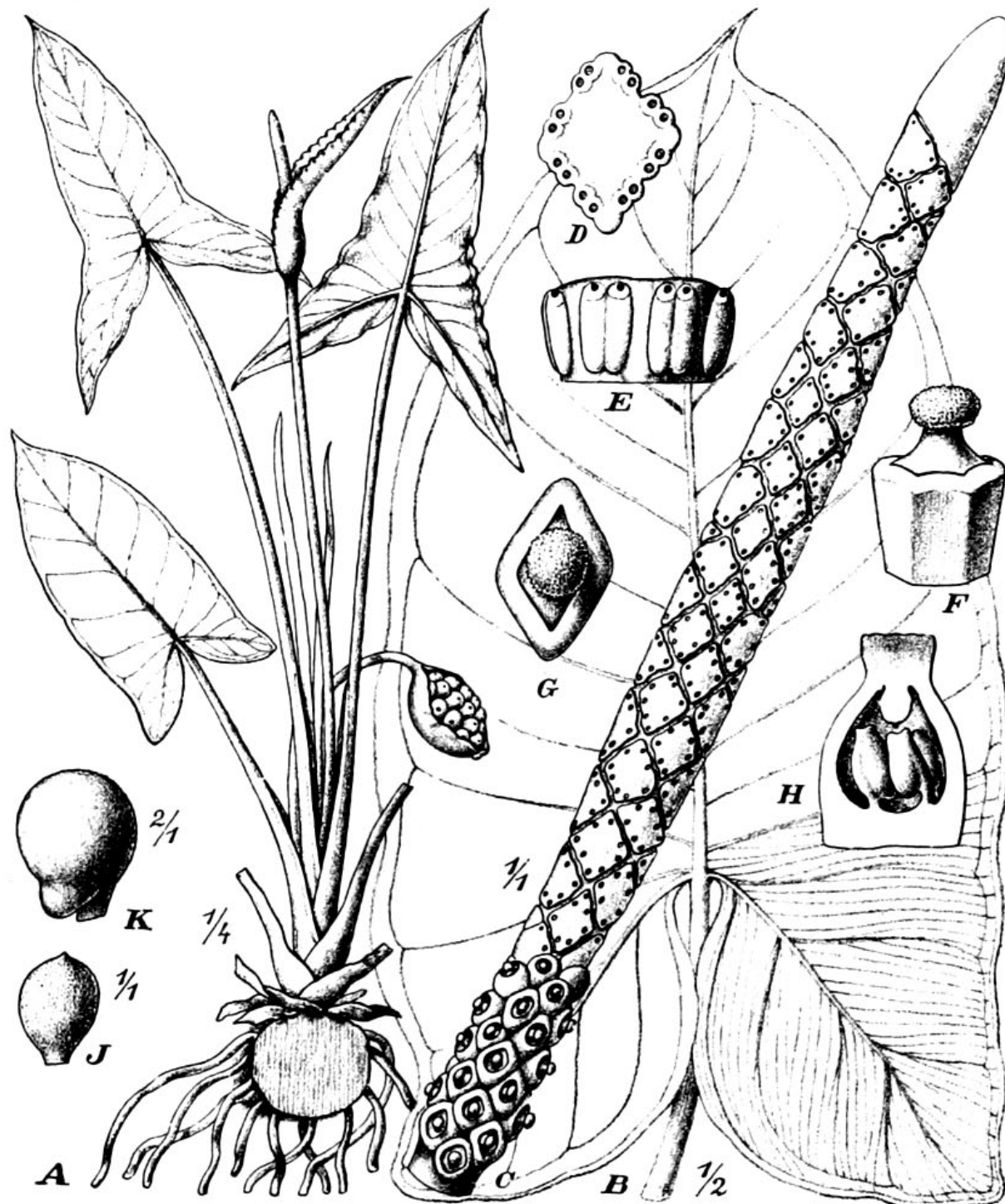


Fig. 34. *Peltandra virginica* (L.) Kunth. A Habitus. B Folium. C Spadicis. D Flos masculus desuper visus. E Idem a latere visus. F Flos femineus cum urceolo staminodiali. G Idem desuper visus. H Pistillum longitudinaliter sectum. J Bacca. K Semen. — Icon. origin.

Atlantisches Nordamerika: in Sümpfen und an Quellen vom südlichen Virginiens bis Florida.

Dismal-Swamp-Region der Küstenebene des südöstlichen Virginiens und des nordöstlichen Carolina, z. B. Virginia Beach und Elisabeth City in N. C. (Kearney, Report on a bot. Survey of the Dismal Swamp Region in Contrib. U. S. Nat. Herb. V.

[1901] 6). — Georgia, in feuchten Hainen (Beyrich — Herb. Berlin), Coffee County (Rob. M. Harper, Georgia Plants n. 1449. — Blühend Juli. — Herb. Berlin). — Florida: Eustis, Lake County (Geo V. Nash, Plants of Central Peninsula Florida n. 1015. — Blühend Juni. — Herb. Berlin).

2. *P. virginica* (L.) Kunth, Enum. III. (1841) 43; Schott, Syn. (1856) 50 nec Gen. Ar. nec Prodr.; Macoun, Catal. Canadian Pl. IV. (1888) 72; Britton et Brown, Illustr. Fl. North. Un. St. I. (1896) 362 c. fig. — *Arum virginicum* L. Spec. ed. 1. (1753) 966; Willd. Spec. IV. (1805) 484; Spreng. Syst. IV. (1826) 768; Pursh, Fl. Amer. sept. II. (1814) 187; Blume in Rumphia I. (1835) 120. — *Calla virginica* Michx. Fl. bor. amer. II. (1803) 187. — *Caladium virginicum* Hook. Exot. Fl. (1827) t. 182. — *Peltandra undulata* Raf. Journ. Phys. LXXXIX. (1819) 103; Kunth, Enum. III. (1841) 44; Schott, Gen. Ar. (1858) t. 41, f. 1—15; Engl. in DC. Mon. Phan. II. (1879) 331. — *P. virginica* Raf. in Journ. Phys. LXXXIX. (1819) 103. — *P. angustifolia* Raf. New Fl. Am. I. (1836) 89. — *P. canadensis* Raf. l. c. 87. — *P. hastata* Raf. l. c. 88. — *P. heterophylla* Raf. l. c. 88. — *P. latifolia* Raf. l. c. 87. — *P. Walteri* Raf. l. c. 88. — *Rensselaeria virginica* Beck, Bot. North. and Midl. St. (1833) 382. — Foliorum petioli ultra tertiam partem vaginati, quam lamina triplo longiores, lamina sagittata, cuspidata, interdum 3 dm longa, ad basin lobi antici 1,5 dm lata, lobis posticis antici circ. $\frac{1}{2}$ — $\frac{1}{3}$ aequantibus, sinu late triangulari sejunctis, obtusiusculis, nervo colectivo intimo a margine magis remoto. Pedunculus petiolum superans. Spathae tubus oblongus 2,5—3 cm longus, 1,5 cm amplus, lamina 1,3—1,5 dm longa, 3 cm lata, virens. Spadicis inflorescentia feminea 1,5—2 cm longa, mascula 7—8 cm longa, sursum attenuata, appendix nuda circ. 0,5 cm longa. Spatha fructifera dependens. Ovaria pauciovulata, raro uniovulata. Staminodiorum urceolus angulosus. — Fig. 34.

Atlantisches Nordamerika: von Maine bis Michigan und südlich bis Florida.

Seenprovinz: Ontario, sehr häufig in einem Sumpf unterhalb »The Ferry«, Prince Edward Co., bei Belleville (Macoun). — Maine; Massachusetts, z. B. Boston (Boott — Herb. Berlin); Rhode Island, z. B. Providence (Congdon — Herb. Berlin); New York, z. B. Southbeach (Heuser — Herb. Berlin).

Provinz des sommergrünen Waldes: A) Mississippi-Ohio-Tennessee-Zone: Ohio, sehr verbreitet an den Flußufern (Dachnowski in Peat Deposits of Ohio (1912) 64, 67, 88, 92, 227, 239), Illinois (Brendel — Herb. Berlin). — B) Alleghani-Zone: Pennsylvania (Schweinitz — Herb. München). Carolina, am Fuß der Black Mountains (Rugel n. 1842). — C) Zone der Pine barrens: New Jersey, sehr häufig an den Ufern des Delaware und in den Creeks unterhalb Philadelphia, auch an den kleineren Bächen aufwärts bis in die Cedar Swamps der Pine Barrens (W. Stone, the Plants of South. New Jersey [1911] 315).

Immergrüne Provinz der südatlantischen Staaten: Florida, Eustis, Lake County (Nash, Pl. of Central Penins. Florida n. 453. — Herb. Berlin).

Nota. Priori valde similis et saepe cum ea commutata, at foliorum nervo colectivo a margine magis remoto et inflorescentia bene diversa.

Register

für A. Engler-Araceae-Philodendroideae-Anubiadeae, Aglaonemateae, Dieffenbachieae, Zantedeschieae, Typhonodoreae, Peltandreae.

Die angenommene Gattung ist **fett** gedruckt, die angenommenen Arten sind mit einem Stern(*) bezeichnet.

- Aglaodorum** Schott 34 n. 56. (10).
 *Griffithii Schott 34, 35 Fig. 16.
 Aglaonema Hook. f. 34.
Aglaonema Schott 10, n. 55. 9).
 acutispathum N. E. Brown 29, n. 31.
 angustifolium N. E. Brown 20, n. 15.
 *birmanicum Hook. f. 25, n. 24. (12).
 *borneense Engl. 22, n. 17. (11).
 *brevispathum Engl. 32, n. 36 Fig. 15. (12).
 *Clarkei Hook. f. 16, n. 6. (11).
 *cochinchinense Engl. 16, n. 5. (11).
 *commutatum Schott 27, n. 27. (12, 26 Fig. 10, 28).
 *cordifolium Engl. 29, n. 33. (12, 31 Fig. 14).
 *costatum N. E. Brown 17, n. 9. (11).
 var. Foxii Engl. 17, n. 9.
 var. lineatum Engl. 17, n. 9.
 var. maculatum Engl. 17, n. 9.
 var. virescens Ridley 17, n. 9.
 var. viride Engl. 17, n. 9.
 *densinervium Engl. 13, n. 1. (10).
 discolor Hort. 34.
 *elegans Engl. 28, n. 28. (12, 27 Fig. 11).
 fallax Schott 22, n. 18.
 gracile Schott 22, n. 18.
 Griffithii Schott 10, 34.
 *Haenkei (Presl) Schott 17, n. 10. (11).
 *Helferi Hook. f. 16, n. 4. (11).
 *Hookerianum Schott 25, n. 23. (12).
 *hospitum Williams 29, n. 30. (12).
 var. obtusatum Engl. 29, n. 30.
 *immaculatum Hort. 33, n. 40. (13).
 integrifolium Schott 14, n. 3.
 latifolium Engl. 29, n. 32.
 longecuspidatum Schott 20, n. 15.
 maculatum Blume 34.
 malaccense Schott 21, n. 15.
 *marantifolium Blume 27, n. 26. (12, 26 Fig. 10, 34).
 β. commutatum Engl. 27, n. 27.
 var. maculatum Hook. 27, n. 27.
 marantifolium Engl. 29, n. 31.
 *marmoratum Engl. 17, n. 8. (11).
 *minus Hook. f. 32, n. 37. (13).
 *modestum Schott 29, n. 31. (12, 30 Fig. 13).
 *nanum Hook. f. 24, n. 22, Fig. 9. (12).
 *nebulosum N. E. Brown 19, n. 12. (11).
 *nicobaricum Hook. f. 34, n. 34. (12).
 nitidum Kunth 14, n. 3.
 *novoguineense Engl. 13, n. 2. (10, 14 Fig. 3).
 *oblongifolium (Roxb.) Kunth. 13, n. 3. (11, 13, 15 Fig. 4).
 *ovatum Engl. 31, n. 35 Fig. 14. (12).
 palustre Teijsm. et Binnend. 34.
 *philippinense Engl. 29, n. 32. (12).
 *pictum (Roxb.) Kunth 33, n. 38. (13).
 var. tricolor N. E. Brown 33, n. 38.
 *Pierreanum Engl. 24, n. 20. (12, 23 Fig. 8).
 princeps Kunth 22, n. 18.
 propinquum Schott 20, n. 15.
 *pumilum Hook. f. 17, n. 7. (11).
 *Ridleyanum Engl. 28, n. 29 Fig. 12. (12).
 *Robelinii (Lind.) Gentil 19, n. 13. (11).
 lusus pseudobracteosum Engl. 19, n. 13. (19 Fig. 6).
 *rotundum N. E. Brown 33, n. 41. (13).
 *Schottianum Miq. 20, n. 15. (11).
 var. genuinum Engl. 20, n. 15.
 f. angustifolium (N. E. Br.) Engl. 20, n. 15.
 var. Brownii (Prain) Engl. 21, n. 15.
 var. malaccense (Schott) Engl. 21, n. 15.
 var. Winkleri Engl. 21, n. 15. (21 Fig. 7).
 *Scortechinii Hook. f. 24, n. 21. (12).
 *siamense Engl. 21, n. 16. (11).
 siamense Ridley 29.
 *simplex Blume 22, n. 18. (25).
 f. macrophyllum Engl. 22, n. 18. (12).
 *subfalcatum Engl. 23, n. 19. (12).
 subundulatum Zollinger 34.
 *tenuipes Engl. 25, n. 25. (12).
 *Treubii Engl. 19, n. 11. (11, 18 Fig. 5).
 versicolor Hort. 33, n. 38.
 *vittatum Ridley 33, n. 39. (13).
 *Warburgii Engl. 20, n. 14. (11).
 Aglaonemateae Engl. (Trib.) 9.

- Aglonomeae Engl. (Trib.) 9, 36.
 Aglonemoideae Engl. (Subf.) 9, 36.
- Amauriella** Rendle 1, n. 54a.
 *obanensis Rendle 1.
- Anubiadeae Engl. (Trib.) 1.
 Anubiadinae Schott (Subtrib.) 1.
- Anubias** Schott 2, n. 54b. (4).
 *affinis De Wild. 3, n. 1. (2).
 Afzelii Engl. 5, n. 7.
 *Afzelii Schott 3, n. 2. (2).
 Afzelii Th. Dur. et De Wild. 4, n. 3.
 *auriculata Engl. 7, n. 9. (3, 8 Fig. 2).
 *Barteri Schott 4, n. 6. (3, 7).
 var. caladiifolia Engl. 5, n. 6.
 var. glabra N. E. Br. 4, n. 4.
 *congensis N. E. Brown 7, n. 8. (3, 6 Fig. 1).
 var. crassispadix Engl. 7, n. 8. (2, 6 Fig. 1).
 *Engleri De Wild. 4, n. 3. (2).
 *Gilletii De Wild. et Th. Dur. 8, n. 11. (3).
 *hastifolia Engl. 9, n. 12. (2, 3, 8 Fig. 2).
 var. robusta Engl. 9, n. 12.
 var. sublobata Engl. 9, n. 12.
 *Haullevilleana De Wild. et Th. Dur. 7, n. 10. (3).
 *heterophylla Engl. 5, n. 7. (3, 7).
 heterophylla N. E. Brown 7, n. 8.
 *lanceolata N. E. Brown 4, n. 4. (3).
 f. angustifolia Engl. 4, n. 4.
 *nana Engl. 4, n. 5. (3).
- Arodendron Werth 69.
 Engleri Werth 72.
- Arodes O. Ktze. 61.
 angustilobum O. Ktze. 65.
- Aroides angustilobum Rendle 65.
 hastatum Rendle 65.
- Arum L. 72.
 alliaceum Ruiz 41.
 caulescens, Cannae indicae foliis Plum. 45.
 integrifolium Link 14.
 Seguine Jacq. 45.
 seguinum L. 45.
 virginicum L. 75.
- Caladium Auct. 36.
 pictum Lodd. 48.
 seguinum Hook. 45.
 seguinum Vent. 45.
 simplex Blume 22.
 virginicum Hook. 75.
- Calla L. 61.
 aethiopica L. 62.
 Elliottiana Knight 68.
 nitida W. Jack 14.
 oblongifolia Roxb. 14.
 oculata Lindl. 68.
 Pentlandii Whyte 67.
 picta Roxb. 33.
 sagittaeifolia Michx. 73.
 virginica Michx. 75.
- Colocasia aethiopica Spreng. 62.
 Cylindranubias Engl. (sect.) 2.
- Dieffenbachia** Schott 36, n. 57. (9).
 *aglaonematifolia Engl. 61, n. 27. (39).
 alliadora (Linden) Regel 59, n. 23.
 *antioquensis Lind. et André 54, n. 18. (39).
 *aurantiaca Engl. 40, n. 2. (38).
 Barraquiniana Versch. et Lemaire 50, n. 12.
 Baumannii Hort. 52, n. 13.
 Bausei Hort. Chiswick 39, 54, n. 17a.
 *Bowmannii Carr. 52, n. 13. (37, 38, 48).
 brasiliensis Veitch 48, n. 12.
 *Brittonii Engl. 59, n. 26. (39).
 *cannifolia Engl. 40, n. 3. (38, 41 Fig. 18).
 Chelsoni Hort. 61.
 cognata Schott 48, n. 11.
 consobrina Schott 45, n. 11.
 conspurcata Schott 48, n. 11.
 *cordata Engl. 58, n. 22. (39).
 *costata Klotzsch 44, n. 9. (37 Fig. 17, 38).
 *daguensis Engl. 42, n. 7. (38, 43 Fig. 19).
 decora Hort. Verschaff. 47, n. 11.
 eburnea Hort. 50, n. 12.
 *Enderi Engl. 52, n. 15. (39, 53 Fig. 23).
 Fournieri Hort. 61.
 gigantea Verschaff. 51, n. 12.
 Gollmeriana Schott 45, n. 11.
 *gracilis Huber 59, n. 25. (39).
 grandis Hort. 48, n. 11.
 *humilis Poepp. 59, n. 23. (39, 58 Fig. 26).
 *imperialis Linden et André 54, n. 16. (37 Fig. 17, 39).
 irrorata >Mart.< Schott 48, n. 11.
 Jenmannii Veitch 51, n. 12.
 lancifolia Linden et André 50, n. 12.
 *latimaculata Linden et André 56, n. 19. (39, 56 Fig. 25).
 var. illustris Fournier 57, n. 19.
 Leoncae Hort. 61.
 *Leopoldii Bull 57, n. 24. (39, 55 Fig. 24).
 Leopoldii × picta Engl. 57, n. 21a. (39).
 lineata C. Koch et Bouché 48n. 11.
 lingulata >Mart.< Schott 48, n. 11.
 liturata Schott 47, n. 11.
 longifolia Hort. 61.
 *longispatha Engl. et Krause 44, n. 10. (38).
 macrophylla Engl. 44, n. 9.
 *macrophylla Poepp. 42, n. 8. (38).
 var. obliqua (Poepp.) Endl. 42, n. 5.
 magnifica Linden et Rodigas 51, n. 12.
 Makoyana Hort. 61.
 meleagris L. Linden et Rodigas 51, n. 12.
 membranulifera Regel 61.
 memoria Corsi Salviati 51, n. 12.
 mirabilis Hort. Verschaffelt 51, n. 12.
 neglecta Schott 45, n. 11.
 nobilis Hort. Verschaff. 47, n. 11.
 *obliqua Poepp. 42, n. 5. (38).
 *Oerstedii Schott 40, n. 4. (38).
 *olbia L. Linden et Rodigas 52, n. 14. (39).
 *Parlatorei Linden et André 40, n. 4. (37 Fig. 17, 38).
 var. marmorea Linden et André 42, n. 4.
 *parvifolia Engl. 59, n. 24. (39, 60 Fig. 27).
 Pearcei Hort. 54, n. 17.
 *picta (Lodd.) Schott 48, n. 12. (38, 46 Fig. 20, 50).
 subvar. amoena Hort. Bull 51, n. 12.
 subvar. angustifolia Engl. 50, n. 12.
 var. angustior Engl. 50, n. 12.
 var. antioquensis Engl. 54, n. 18.
 var. Barraquiniana (Verschaff. et Lem.) Engl. 50, n. 12. (49, 50 Fig. 22).
 f. Bausei Engl. 54, n. 17a.
 subvar. Carderi Hort. Bull 51, n. 12.
 subvar. gigantea (Verschaffelt) Engl. 51, n. 12.
 subvar. Jenmannii (Veitch) Engl. 51, n. 12. (37 Fig. 17).
 subvar. lancifolia (Lind. et André) Engl. 50, n. 12.
 var. latior Engl. 51, n. 12.
 subvar. magnifica (Linden et Rodig.) Engl. 51, n. 12. (49 Fig. 24).
 subvar. meleagris (L. Linden et Rodig.) Engler 51, n. 12.
 subvar. memoria (Corsi Salviati) Engl. 51, n. 12.

- subvar. *mirabilis* (Verschaff.) Engl. 54, n. 42.
 subvar. *picturata* (L. Linden et Rodig.) Engl. 51, n. 42.
 subvar. *Shuttleworthiana* (Hort.) Bull. Engl. 54, n. 42.
 var. *typica* Engl. 50, n. 42. (37 Fig. 17, 49 Fig. 21).
 f. *α. Weirii* Engl. 54, n. 47.
picta × *Weirii* Engl. 54, n. 17a. (39).
picturata L. Linden et Rodigas 54, n. 42.
 **Pittieri* Engler et Krause 42, n. 6. (38).
Plumieri Schott 45, n. 44.
Poeppigii Schott 45, n. 44.
pothiformis Linden 40, n. 4.
reginae Hort. 52, n. 13.
rex Hort. 51, n. 42.
robusta C. Koch 47, n. 41.
robusta Schott 47, n. 41.
 **seguina* (L.) Schott 45, n. 14. (37, 38, 49, 50, 61).
 var. *Barraquiniana* Versch. et Lem.) Engl. 50, n. 42.
 f. *J. conspurcata* Engl. 48, n. 44.
 var. *decora* (Hort. Versch.) Engl. 47, n. 44.
 subvar. *irrorata* (Mart.) Engl. 48, n. 44.
 var. *lineata* (C. Koch et Bouché) Engl. 48, n. 44. (37 Fig. 17).
 B. *lingulata* f. *ε. irrorata* Engl. 52, n. 43.
 var. *lingulata* (Mart.) Engl. 48, n. 44.
 var. *litturata* (Schott) Engl. 47, n. 44. (46 Fig. 20).
 var. *nobilis* (Hort. Verschaff.) Engl. 47, n. 44.
 var. *robusta* (C. Koch) Engl. 47, n. 44.
 var. *Ventenatiana* (Schott) Engl. 48, n. 44.
 var. *viridis* Engl. 45, n. 44. (37 Fig. 17).
 subvar. *Wallisii* (Lind.) Engl. 47, n. 44.
Shuttleworthiana Hort. Bull. 54, n. 42.
splendens Hort. Bull. 39, 57, n. 21a.
Spruceana Schott 59, n. 23.
triumphans Hort. 54, n. 48.
variegata Hort. 47, n. 44.
Ventenatiana Schott 48, n. 44.
Wallisii Linden 47, n. 44.
 **Weberbaueri* Engl. 57, n. 20. (39).
- **Weirii* Berkl. 54, n. 47. (39, 55 Fig. 24).
Wendlandii Schott 45, n. 44; 61, n. 26.
 Dieffenbachieae Engl. (trib.) 36.
Hoja de puerco 47.
Homalomena brevispatha Engl. 32.
Leontia W. Cooper 72.
virginica W. Cooper 73.
ngomba y madja baride 70.
Little Gem 63.
Otosma Raf. 61.
patquina 44.
Peltandra Raf. 72, n. 60.
alba Raf. 73, n. 4.
angustifolia Raf. 75, n. 2.
canadensis Raf. 75, n. 2.
hastata Raf. 75, n. 2.
heterophylla Raf. 75, n. 2.
latifolia Raf. 75, n. 2.
 **sagittifolia* (Michx.) Morong 73, n. 4 Fig. 33.
undulata Raf. 75, n. 2.
undulata Schott 73, n. 4.
 **virginica* (L.) Kunth 75, n. 2. (74 Fig. 34).
virginica Raf. 75, n. 2.
virginica Schott 73, n. 4.
Walteri Raf. 75, n. 2.
 Peltandreae Engl. (trib.) 72.
rabano cimarron 47.
Rensselaeria Beck 72.
virginica Beck 75.
Richardia Kunth 61.
africana Kunth 62, 63.
albo-maculata Hook. 67.
angustiloba N. E. Brown 67.
angustiloba Schott 65.
aurata Hort. 69.
cantabrigiensis Lynch 69.
Elliottiana (Knight) W. Watson 68.
hastata Engl. 65.
hastata Hook. f. 68.
Lehmannii Krelage 65.
Lutwychei N. E. Brown 68.
macrocarpa Watson 65, 67.
Madame Fosca Ragionieri 69.
melanoleuca Hook. f. 67.
 var. *tropicalis* N. E. Brown 68.
 (Mrs. Roosevelt) *melanoleuca* × *Rehmannii* (violacea) Gard. Chron. 69.
nilotica W. Wats. 62, 69.
Pentlandii Whyte 65, 67.
Pride of Congo Rev. Hort. 68.
Rehmannii N. E. Brown 65.
Rhemannii auct. 65.
Rossii Chalwin 62, 69.
Sprengeri Comes 67.
- Richardieae* Schott (trib.) 64.
Schismatoglottis Robelinii Linden 49.
Schweinsblatt 47.
Scindapsus erectus Presl 27.
Haenkei Presl 47.
Seguinum Raf. 36.
Synanubias Engl. (sect.) 2.
Typhonodorea Engl. (trib.) 69.
Typhonodorum Schott 69, n. 59. (64).
 **Lindleyanum* Schott 72 Fig. 31. (74 Fig. 32).
madagascariense Engl. 72.
Xanthosoma sagittaeifolia Chapm. n. 73.
Zantedeschia Spreng. 64, n. 58. (69).
 **aethiopica* (L.) Spreng. 62, n. 4. (62, 63 Fig. 28).
lus. bifida Engl. 65, n. 4. (64 Fig. 29).
lus. duplicata Engl. 65, n. 4. (64 Fig. 29).
lus. luxurians Engl. 65, n. 4. (64 Fig. 29).
 var. *minor* Engl. 63, n. 4.
lus. ramosa Engl. 65, n. 4. (64 Fig. 29).
 var. *umganiensis* Leichtlin et Engl. 64, n. 4.
 **albo-maculata* (Hook. f.) Baill. 67, n. 5. (62, 66 Fig. 30).
albo-maculata × *hastata* Engl. 62, 69.
 **angustiloba* (Schott) Engl. 65, n. 3. (62).
chloroleuca Engl. et Gilg 65, n. 3.
 **Elliottiana* (Knight) Engl. 68, n. 8. (62).
hastata (Hook. f.) Engl. 68, n. 7.
Lutwychei Durand et Schinz 68, n. 7.
 **macrocarpa* Engl. 67, n. 4. (62, 66 Fig. 30).
 **melanoleuca* Hook. f.) Engl. 67, n. 6. (62).
 var. *tropicalis* N. E. Brown 65, n. 6.
melanoleuca × *Rehmannii* Engl. 62, 69.
 **oculata* (Lindl.) Engl. 68, n. 7. (62).
Pentlandii Gartenfl. 67, n. 4.
 **Rehmannii* Engl. 65, n. 2. (62, 66 Fig. 30).
Rehmannii × *Elliottiana* Engl. 62, 69.
Zantedeschieae Engl. (trib.) 64, 69.

GNU Free Documentation License

Version 1.2, November 2002

Copyright (C) 2000,2001,2002 Free Software Foundation, Inc.

51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

0. PREAMBLE

The purpose of this License is to make a manual, textbook, or other functional and useful document "free" in the sense of freedom: to assure everyone the effective freedom to copy and redistribute it, with or without modifying it, either commercially or noncommercially. Secondly, this License preserves for the author and publisher a way to get credit for their work, while not being considered responsible for modifications made by others.

This License is a kind of "copyleft", which means that derivative works of the document must themselves be free in the same sense. It complements the GNU General Public License, which is a copyleft license designed for free software.

We have designed this License in order to use it for manuals for free software, because free software needs free documentation: a free program should come with manuals providing the same freedoms that the software does. But this License is not limited to software manuals; it can be used for any textual work, regardless of subject matter or whether it is published as a printed book. We recommend this License principally for works whose purpose is instruction or reference.

1. APPLICABILITY AND DEFINITIONS

This License applies to any manual or other work, in any medium, that contains a notice placed by the copyright holder saying it can be distributed under the terms of this License. Such a notice grants a world-wide, royalty-free license, unlimited in duration, to use that work under the conditions stated herein. The "Document", below, refers to any such manual or work. Any member of the public is a licensee, and is addressed as "you". You accept the license if you copy, modify or distribute the work in a way requiring permission under copyright law.

A "Modified Version" of the Document means any work containing the Document or a portion of it, either copied verbatim, or with modifications and/or translated into another language.

A "Secondary Section" is a named appendix or a front-matter section of the Document that deals exclusively with the relationship of the publishers or authors of the Document to the Document's overall subject

(or to related matters) and contains nothing that could fall directly within that overall subject. (Thus, if the Document is in part a textbook of mathematics, a Secondary Section may not explain any mathematics.) The relationship could be a matter of historical connection with the subject or with related matters, or of legal, commercial, philosophical, ethical or political position regarding them.

The "Invariant Sections" are certain Secondary Sections whose titles are designated, as being those of Invariant Sections, in the notice that says that the Document is released under this License. If a section does not fit the above definition of Secondary then it is not allowed to be designated as Invariant. The Document may contain zero Invariant Sections. If the Document does not identify any Invariant Sections then there are none.

The "Cover Texts" are certain short passages of text that are listed, as Front-Cover Texts or Back-Cover Texts, in the notice that says that the Document is released under this License. A Front-Cover Text may be at most 5 words, and a Back-Cover Text may be at most 25 words.

A "Transparent" copy of the Document means a machine-readable copy, represented in a format whose specification is available to the general public, that is suitable for revising the document straightforwardly with generic text editors or (for images composed of pixels) generic paint programs or (for drawings) some widely available drawing editor, and that is suitable for input to text formatters or for automatic translation to a variety of formats suitable for input to text formatters. A copy made in an otherwise Transparent file format whose markup, or absence of markup, has been arranged to thwart or discourage subsequent modification by readers is not Transparent. An image format is not Transparent if used for any substantial amount of text. A copy that is not "Transparent" is called "Opaque".

Examples of suitable formats for Transparent copies include plain ASCII without markup, Texinfo input format, LaTeX input format, SGML or XML using a publicly available DTD, and standard-conforming simple HTML, PostScript or PDF designed for human modification. Examples of transparent image formats include PNG, XCF and JPG. Opaque formats include proprietary formats that can be read and edited only by proprietary word processors, SGML or XML for which the DTD and/or processing tools are not generally available, and the machine-generated HTML, PostScript or PDF produced by some word processors for output purposes only.

The "Title Page" means, for a printed book, the title page itself, plus such following pages as are needed to hold, legibly, the material this License requires to appear in the title page. For works in formats which do not have any title page as such, "Title Page" means the text near the most prominent appearance of the work's title, preceding the beginning of the body of the text.

A section "Entitled XYZ" means a named subunit of the Document whose

title either is precisely XYZ or contains XYZ in parentheses following text that translates XYZ in another language. (Here XYZ stands for a specific section name mentioned below, such as "Acknowledgements", "Dedications", "Endorsements", or "History".) To "Preserve the Title" of such a section when you modify the Document means that it remains a section "Entitled XYZ" according to this definition.

The Document may include Warranty Disclaimers next to the notice which states that this License applies to the Document. These Warranty Disclaimers are considered to be included by reference in this License, but only as regards disclaiming warranties: any other implication that these Warranty Disclaimers may have is void and has no effect on the meaning of this License.

2. VERBATIM COPYING

You may copy and distribute the Document in any medium, either commercially or noncommercially, provided that this License, the copyright notices, and the license notice saying this License applies to the Document are reproduced in all copies, and that you add no other conditions whatsoever to those of this License. You may not use technical measures to obstruct or control the reading or further copying of the copies you make or distribute. However, you may accept compensation in exchange for copies. If you distribute a large enough number of copies you must also follow the conditions in section 3.

You may also lend copies, under the same conditions stated above, and you may publicly display copies.

3. COPYING IN QUANTITY

If you publish printed copies (or copies in media that commonly have printed covers) of the Document, numbering more than 100, and the Document's license notice requires Cover Texts, you must enclose the copies in covers that carry, clearly and legibly, all these Cover Texts: Front-Cover Texts on the front cover, and Back-Cover Texts on the back cover. Both covers must also clearly and legibly identify you as the publisher of these copies. The front cover must present the full title with all words of the title equally prominent and visible. You may add other material on the covers in addition.

Copying with changes limited to the covers, as long as they preserve the title of the Document and satisfy these conditions, can be treated as verbatim copying in other respects.

If the required texts for either cover are too voluminous to fit legibly, you should put the first ones listed (as many as fit reasonably) on the actual cover, and continue the rest onto adjacent pages.

If you publish or distribute Opaque copies of the Document numbering more than 100, you must either include a machine-readable Transparent

copy along with each Opaque copy, or state in or with each Opaque copy a computer-network location from which the general network-using public has access to download using public-standard network protocols a complete Transparent copy of the Document, free of added material. If you use the latter option, you must take reasonably prudent steps, when you begin distribution of Opaque copies in quantity, to ensure that this Transparent copy will remain thus accessible at the stated location until at least one year after the last time you distribute an Opaque copy (directly or through your agents or retailers) of that edition to the public.

It is requested, but not required, that you contact the authors of the Document well before redistributing any large number of copies, to give them a chance to provide you with an updated version of the Document.

4. MODIFICATIONS

You may copy and distribute a Modified Version of the Document under the conditions of sections 2 and 3 above, provided that you release the Modified Version under precisely this License, with the Modified Version filling the role of the Document, thus licensing distribution and modification of the Modified Version to whoever possesses a copy of it. In addition, you must do these things in the Modified Version:

- A. Use in the Title Page (and on the covers, if any) a title distinct from that of the Document, and from those of previous versions (which should, if there were any, be listed in the History section of the Document). You may use the same title as a previous version if the original publisher of that version gives permission.
- B. List on the Title Page, as authors, one or more persons or entities responsible for authorship of the modifications in the Modified Version, together with at least five of the principal authors of the Document (all of its principal authors, if it has fewer than five), unless they release you from this requirement.
- C. State on the Title page the name of the publisher of the Modified Version, as the publisher.
- D. Preserve all the copyright notices of the Document.
- E. Add an appropriate copyright notice for your modifications adjacent to the other copyright notices.
- F. Include, immediately after the copyright notices, a license notice giving the public permission to use the Modified Version under the terms of this License, in the form shown in the Addendum below.
- G. Preserve in that license notice the full lists of Invariant Sections and required Cover Texts given in the Document's license notice.
- H. Include an unaltered copy of this License.
- I. Preserve the section Entitled "History", Preserve its Title, and add to it an item stating at least the title, year, new authors, and publisher of the Modified Version as given on the Title Page. If there is no section Entitled "History" in the Document, create one stating the title, year, authors, and publisher of the Document as given on its Title Page, then add an item describing the Modified Version as stated in the previous sentence.

- J. Preserve the network location, if any, given in the Document for public access to a Transparent copy of the Document, and likewise the network locations given in the Document for previous versions it was based on. These may be placed in the "History" section. You may omit a network location for a work that was published at least four years before the Document itself, or if the original publisher of the version it refers to gives permission.
- K. For any section Entitled "Acknowledgements" or "Dedications", Preserve the Title of the section, and preserve in the section all the substance and tone of each of the contributor acknowledgements and/or dedications given therein.
- L. Preserve all the Invariant Sections of the Document, unaltered in their text and in their titles. Section numbers or the equivalent are not considered part of the section titles.
- M. Delete any section Entitled "Endorsements". Such a section may not be included in the Modified Version.
- N. Do not retitle any existing section to be Entitled "Endorsements" or to conflict in title with any Invariant Section.
- O. Preserve any Warranty Disclaimers.

If the Modified Version includes new front-matter sections or appendices that qualify as Secondary Sections and contain no material copied from the Document, you may at your option designate some or all of these sections as invariant. To do this, add their titles to the list of Invariant Sections in the Modified Version's license notice. These titles must be distinct from any other section titles.

You may add a section Entitled "Endorsements", provided it contains nothing but endorsements of your Modified Version by various parties--for example, statements of peer review or that the text has been approved by an organization as the authoritative definition of a standard.

You may add a passage of up to five words as a Front-Cover Text, and a passage of up to 25 words as a Back-Cover Text, to the end of the list of Cover Texts in the Modified Version. Only one passage of Front-Cover Text and one of Back-Cover Text may be added by (or through arrangements made by) any one entity. If the Document already includes a cover text for the same cover, previously added by you or by arrangement made by the same entity you are acting on behalf of, you may not add another; but you may replace the old one, on explicit permission from the previous publisher that added the old one.

The author(s) and publisher(s) of the Document do not by this License give permission to use their names for publicity for or to assert or imply endorsement of any Modified Version.

5. COMBINING DOCUMENTS

You may combine the Document with other documents released under this License, under the terms defined in section 4 above for modified versions, provided that you include in the combination all of the

Invariant Sections of all of the original documents, unmodified, and list them all as Invariant Sections of your combined work in its license notice, and that you preserve all their Warranty Disclaimers.

The combined work need only contain one copy of this License, and multiple identical Invariant Sections may be replaced with a single copy. If there are multiple Invariant Sections with the same name but different contents, make the title of each such section unique by adding at the end of it, in parentheses, the name of the original author or publisher of that section if known, or else a unique number. Make the same adjustment to the section titles in the list of Invariant Sections in the license notice of the combined work.

In the combination, you must combine any sections Entitled "History" in the various original documents, forming one section Entitled "History"; likewise combine any sections Entitled "Acknowledgements", and any sections Entitled "Dedications". You must delete all sections Entitled "Endorsements".

6. COLLECTIONS OF DOCUMENTS

You may make a collection consisting of the Document and other documents released under this License, and replace the individual copies of this License in the various documents with a single copy that is included in the collection, provided that you follow the rules of this License for verbatim copying of each of the documents in all other respects.

You may extract a single document from such a collection, and distribute it individually under this License, provided you insert a copy of this License into the extracted document, and follow this License in all other respects regarding verbatim copying of that document.

7. AGGREGATION WITH INDEPENDENT WORKS

A compilation of the Document or its derivatives with other separate and independent documents or works, in or on a volume of a storage or distribution medium, is called an "aggregate" if the copyright resulting from the compilation is not used to limit the legal rights of the compilation's users beyond what the individual works permit. When the Document is included in an aggregate, this License does not apply to the other works in the aggregate which are not themselves derivative works of the Document.

If the Cover Text requirement of section 3 is applicable to these copies of the Document, then if the Document is less than one half of the entire aggregate, the Document's Cover Texts may be placed on covers that bracket the Document within the aggregate, or the electronic equivalent of covers if the Document is in electronic form. Otherwise they must appear on printed covers that bracket the whole aggregate.

8. TRANSLATION

Translation is considered a kind of modification, so you may distribute translations of the Document under the terms of section 4. Replacing Invariant Sections with translations requires special permission from their copyright holders, but you may include translations of some or all Invariant Sections in addition to the original versions of these Invariant Sections. You may include a translation of this License, and all the license notices in the Document, and any Warranty Disclaimers, provided that you also include the original English version of this License and the original versions of those notices and disclaimers. In case of a disagreement between the translation and the original version of this License or a notice or disclaimer, the original version will prevail.

If a section in the Document is Entitled "Acknowledgements", "Dedications", or "History", the requirement (section 4) to Preserve its Title (section 1) will typically require changing the actual title.

9. TERMINATION

You may not copy, modify, sublicense, or distribute the Document except as expressly provided for under this License. Any other attempt to copy, modify, sublicense or distribute the Document is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

10. FUTURE REVISIONS OF THIS LICENSE

The Free Software Foundation may publish new, revised versions of the GNU Free Documentation License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns. See <http://www.gnu.org/copyleft/>.

Each version of the License is given a distinguishing version number. If the Document specifies that a particular numbered version of this License "or any later version" applies to it, you have the option of following the terms and conditions either of that specified version or of any later version that has been published (not as a draft) by the Free Software Foundation. If the Document does not specify a version number of this License, you may choose any version ever published (not as a draft) by the Free Software Foundation.

ADDENDUM: How to use this License for your documents

To use this License in a document you have written, include a copy of the License in the document and put the following copyright and license notices just after the title page:

Copyright (c) YEAR YOUR NAME.

Permission is granted to copy, distribute and/or modify this document under the terms of the GNU Free Documentation License, Version 1.2 or any later version published by the Free Software Foundation; with no Invariant Sections, no Front-Cover Texts, and no Back-Cover Texts. A copy of the license is included in the section entitled "GNU Free Documentation License".

If you have Invariant Sections, Front-Cover Texts and Back-Cover Texts, replace the "with...Texts." line with this:

with the Invariant Sections being LIST THEIR TITLES, with the Front-Cover Texts being LIST, and with the Back-Cover Texts being LIST.

If you have Invariant Sections without Cover Texts, or some other combination of the three, merge those two alternatives to suit the situation.

If your document contains nontrivial examples of program code, we recommend releasing these examples in parallel under your choice of free software license, such as the GNU General Public License, to permit their use in free software.