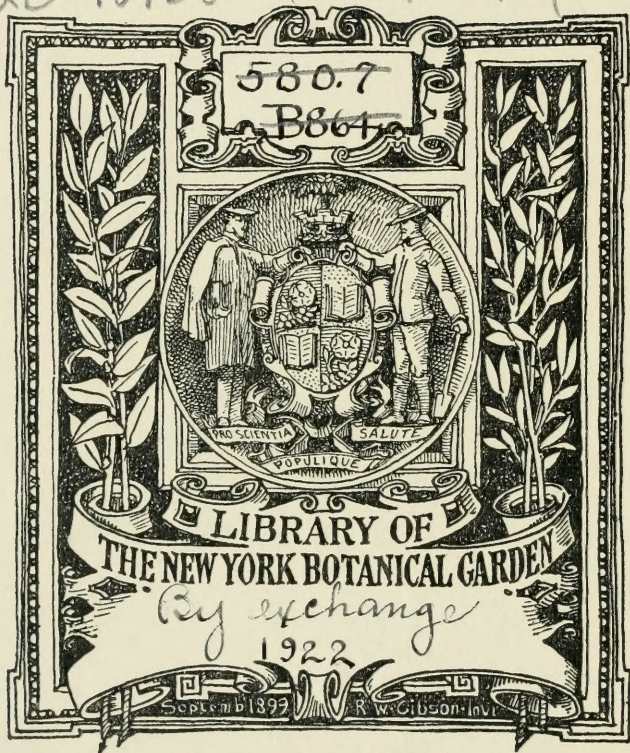




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„S LANDS PLANTENTUIN”  
(„JARDIN BOTANIQUE DE BUITENZORG”)

# Bulletin du Jardin Botanique

*Rédigé par*

Dr. W. M. DOCTERS VAN LEEUWEN,  
*Directeur du Jardin Botanique*

Dr. F. C. VON FABER,  
*Chef des Laboratoires Botaniques*

et

Dr. J. J. SMITH,  
*Chef de l'Herbier.*

**Série III. — Volume IV.**

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*Rédigé par les Docteurs ès Sciences Naturelles:*

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VERZEICHNIS DER IN NIEDERLÄNDISCH OST-INDIEN  
BIS DEM JAHRE 1920 GEFUNDENEN MYXOMYCETES,  
FUNGI UND LICHENES

VON

Dr. C. et D. VAN OVEREEM—DE HAAS.

Die mykologische Literatur vom Niederländisch Ost-Indischen Gebiete liegt in den verschiedensten Zeitschriften und Abhandlungen zerstreut. Abgesehen von einer kleinen Arbeit über die Myxomyceten existieren zusammenfassende Arbeiten darüber gar nicht. Deswegen meinen wir, dass die Zusammenstellung einer Namenliste mit Hinweisung auf die Literatur für diejenigen, welche sich mit diesen Gruppen befassen, nicht unwillkomm sein wird. Die Forschung der mykologischen und lichenologischen Flora dieser Gegenden steht jetzt noch im Anfangsstadium. Die ziemlich grosse Literaturliste erzeugt vielleicht eine entgegengesetzte Meinung, aber dies ist ein Irrtum, denn zum grössten Teil besteht sie aus phytopathologischen Mitteilungen. Viel weiter ist man nicht gegangen. Eine Folge davon ist, dass jetzt noch die grösste Begriffsverwirrung über Verbreitung und Vorkommen dieser Gruppen herrscht. Auch auf mykophagischem Gebiete herrscht noch die grösste Unklarheit. Sogar von den häufig vorkommenden Arten, welche von den Eingeborenen für verschiedene Zwecke benützt werden, weiss man fast nichts.

Von allen weiteren Besprechungen können wir direkt die Gruppe der Flechten ausschalten. Dann und wann wurden einige Arten davon gesammelt, aber die Literatur darüber ist spärlich und in den Sammlungen sind sie fast nicht vertreten.

Am besten sind die Myxomyceten, von PENZIG für die Flora von Buitenzorg bearbeitet, bekannt geworden.

Von den Pilzen wurden durch Ausländer, die meistens Gäste des Treub-Laboratoriums und mit wenigen Ausnahmen keine Mykologen waren, kleine Sammlungen nach Europa mitgeführt, welche dort von Spezialisten bearbeitet wurden. Weil viele dieser Bearbeitungen aus den letzten Jahren des vorigen Jahrhunderts stammen, zählt die Liste viele Arten, welche jetzt weiter aufgeklärt werden müssen. Auch macht die Konservierung in Alkohol ohne eine Voruntersuchung an Ort und Stelle, die Beschreibung vieler Arten wertlos.

Die wichtigsten Sammlungen sind hier, in kurzem aufgezählt.

Die ältesten Sammlungen rühren von KHUHL, VAN HASSELT, JUNGHUHN und KORTHALS her. Es sind hauptsächlich *Polyporaceae*, welche von LÉVEILLÉ <sup>1)</sup> bearbeitet wurden. Später wurden diese Sammlungen, welche in „s Rijks Herbarium“ in Leiden aufbewahrt werden, soweit sie noch erhalten waren, von BRESADOLA und LLOYD revidiert. Auch BLUME und NEES VON ESENBECK, sowie JUNGHUHN selbst haben eine Anzahl Pilze beschrieben. Von VAN HASSELT und KHUHL existiert in der Bibliothek von Buitenzorg noch eine Kollektion farbiger Abbildungen, woraus hervorgeht, dass sie auch schon auf die *Agaricaceen* ihre Aufmerksamkeit gerichtet hatten. Publiziert sind diese Untersuchungen, soweit wir nachgehen konnten, nie, ebenso wenig wie eine Sammlung Pilzabbildungen, die unter Leitung von BLUME gefertigt worden ist, welche in Leiden aufbewahrt wird.

Wichtige Sammlungen machte auch der schweizerische Botaniker ZOLLINGERIN in den Jahren 1842–1848, wovon die Pilze auch von LÉVEILLÉ und die Flechten von HEPP bearbeitet wurden.

Weiter sind hier noch die Sammlungen von KURZ zu nennen.

Dann folgen in den letzten Jahren des vorigen und in den ersten Jahren dieses Jahrhunderts die kleineren Sammlungen von den verschiedenen ausländischen Besuchern von Buitenzorg: CLAUTRIAU, ENGLER, VON HÖHNEL, HOLTERMANN, MASSART, NYMAN, PENZIG, RACIBORSKI, SCHRÖTER, SOLMS LAUBACH, USTERI, WARBURG, ZIMMERMANN, u. a. Diese alle haben mehr oder weniger wichtige Beiträge zur mykologischen Flora dieser Gegenden geliefert. Weit aus das meiste Material bearbeitete HENNINGS in Berlin, während EDUARD FISCHER in Bern viele interessante Formen mehr eingehend studierte. Dass die Beschreibung dieser Formen manchmal viel zu wünschen übrig liess, war nicht zu umgehen, weil das Material nicht im frischen Zustande bei der Bearbeitung vorgelegen hatte. In dieser Hinsicht machen die Publikationen der Mykologen VON HÖHNEL, HOLTERMANN, PENZIG und RACIBORSKI eine Ausnahme. Auch von dem berühmten Bryologen MAX FLEISCHER, welcher sich viele Jahre auf Java aufhielt, wurden viele interessante Arten entdeckt. Alle diese Untersuchungen geben aber zusammen noch gar keine Vorstellung von dem mykologischen Reichtum dieser Gegenden.

Das Gebiet der parasitischen für die Kulturen wichtigen Fungi wurde etwas ausführlicher studiert und hier dürfen wir die Untersuchungen von BERNARD, KOORDERS, RANT, RACIBORSKI, RUTGERS, WENT und WAKKER an erster Stelle nennen.

Jetzt einige Worte über die Sammlungen in den Herbarien in Leiden und Buitenzorg. Das von den Ausländern gesammelte Material ist in diesen Sammlungen zum grössten Teil nicht vertreten, weil früher kein Wert auf die Abgabe von Doubletten gelegt wurde. Zum Teile ist es in Berlin

<sup>1)</sup> Im Jahre 1844 besuchte LÉVEILLÉ das Herbarium in Leiden.

vorhanden (Sammlungen von ENGLER, NYMAN, USTERI, WARBURG, ZIMMERMAN), zum teile liegt es in verschiedenen ausländischen Herbarien zerstreut.

Im Herbarium in Leiden befinden sich, soweit sie erhalten sind <sup>1)</sup> die Originale von JUNGHUHN, und die von LÉVEILLÉ beschriebenen Arten; weiter fünf von WENT gesammelte Arten, wovon drei von OUDEMANS neu beschrieben worden sind. <sup>2)</sup> Ausserdem besitzt Leiden noch wichtige Sammlungen, meistens von Polyporeen, welche von den Herrn JACOBSON und VAN HEURN und von VAN DER LEK auf Sumatra gesammelt wurden, alles noch unbestimmt.

Im Herbarium von Buitenzorg sind die von PENZIG und SACCARDO beschriebenen Arten ziemlich vollständig vertreten; weiter findet man dort die Myxomyceten von PENZIG, viele Arten von RACIBORSKI und etwas Material von JUNGHUHN (das letzte aber hat sich schlecht erhalten.) Auch befinden sich in diese Sammlung einige Kollektionen Polyporeen, die von DOCTERS VAN LEEUWEN gesammelt und neuerdings teilweise von LLOYD bestimmt worden sind.

Ueber die Zusammenstellung der Liste ist folgendes zu bemerken.

Bei der Zusammenstellung der Literaturliste haben wir angefangen die Uebersicht von Süd Asien in LINDAU et SYDOW, Thesaurus literaturae mycologicae et Lichenologicae Vol. V zu benützen. Diese ist aber äusserst unvollständig. Weiter benützten wir Just's Botanischen Jahresbericht und die Literaturlisten in der Hedwigia. Die Abhandlungen, deren Inhalt uns nur aus Referaten bekannt geworden ist, sind mit dem Zeichen \* versehen. Weit aus die meisten Abhandlungen aber haben wir selbst durchgesehen.

Weil die Literatur ausserordentlich zerstreut ist und oft in wenig zugänglichen Zeitschriften vorkommt, war es manchmal schwierig, uns alle Arbeiten zu verschaffen. Auch sind die Titel oft so nichts sagend, dass man nicht zum voraus wissen kann, ob eine bestimmte Abhandlung für unsere Zwecke in Betracht kommt.

Eine weitere Schwierigkeit entstand bei der Durchmusterung der phytopathologischen Literatur. In zahlreichen Fällen wird die Krankheit und der Erreger ausführlich besprochen, ohne dass der Name des Pilzes genannt wird. Obschon diese Methode stark zu verurteilen ist und in der Literatur schon viel Verwirrung gestiftet hat, wird sie noch immer dann und wann gefolgt. Wir haben aber um die Liste so vollständig wie möglich zu machen, so viel möglich darin eingetragen, wodurch die Literaturliste aber an Vollständigkeit eingebüsst hat. Weil wir aber überzeugt waren doch nicht etwas vollständiges liefern zu können, was schon aus der Art der Zusammenstellung hervorgeht, haben wir uns darüber hinweggesetzt.

<sup>1)</sup> Siehe hierüber bei LLOYD.

<sup>2)</sup> Das übrige Material (alles in Alcohol) dieser Sammlung wird aufbewahrt in Amsterdam in den Sammlungen des Bot. Instituts, ist unbestimmt und verkehrt in einem schlechten Zustande.

Die Gattungen, Familien and Gruppen sind hauptsächlich nach dem System in ENGLER & PRANTL geordnet. Die Arten stehen aus praktischem Grunde in alphabetischer Folge. Bei den Myxomyceten folgten wir LISTER, Mycetozoa sec. edition.

Man bedenke beim Benützen der Liste, dass diese in keiner Hinsicht kritisch ist und dass dies bei der Zusammenstellung auch gar nicht unsere Absicht war. Oft war es sehr schwierig, diese heterogene Literaturliste, welche aus sehr verschiedenen Zeiten herrührt und in Nomenklatur manchmal gar nicht übereinstimmt, zu einem Ganzen zu verarbeiten.

Was die Begrenzung des Gebietes anbelangt, so haben wir uns ausschließlich auf das Niederländische Gebiet beschränkt, mit Ausnahme von Englisch Borneo, Portugiesisch Timor und den beiden anderen Teilen von Neu-Guinea. Weil die Untersuchungen höchst unvollständig sind, konnte die Liste doch keine Vorstellung der Verbreitung der Arten geben und war es nutzlos geographisch verwandte Gebiete auch aufzunehmen.

Zum Schluss möchten wir einige Worten des Dankes an die Personen und Instituten richten, welche uns bei unserer Arbeit unterstützt haben. An erster Stelle nennen wir hier Prof. Dr. HANS SCHINZ in Zürich, in dessen Institut wir unsere Arbeit anfangen. Herzlich danken wir hier auch den Professoren DIELS und LINDAU in Berlin für ihre Hilfe und Unterstützung bei unseren Arbeiten im Botanischen Institut in Dahlem, wo wir die Arbeit zum grössten Teile fertig machten. Auch ein Wort des Dankes an Herrn C. SCHUSTER, Bibliothekar des Instituts dürfen wir hier nicht vergessen. Weiter danken wir hier den verschiedenen Bibliotheken in Holland für ihre Hilfe: die Bibliothek von Teyler's Stiftung in Haarlem, von 's Rijks Herbarium in Leiden, vom Kolonial Institut in Amsterdam und die Königliche Bibliothek in 's Gravenhage.

Buitenzorg, im Mai 1921.

Erklärung der Buchstaben:

- L. Leiden, 's Rijks Herbarium.
- B. Herbarium in Buitenzorg.

### **Myxomycetes.**

(Exosporeae.)

#### **Fam. Ceratiomyxaceae.**

1. *Ceratiomyxa fruticulosa* (Müll.) Macbr. 173, 186 p. 51 (*C. mucida* Schröter = *C. fruticulosa* Macbr. = *Ceratium filiforme* B. et Br.) Java; 43 p. 56 (*Ceratium hydnoideum* A. et S.) Java; 142 p. 308 (*Ceratium hydnoides* A. et S.) Java; 107 p. 8 (*Ceratium Hydnoides* Fr.) Java; B.
2. *C. fruticulosa* (Müll.) Macbr. var. *flexuosa* Lister 86 p. 154 (*C. mucida* P.) Schröter var. *filiformis* B. et Br.) Java.

(Endosporeae.)

Fam. **Physaraceae.**

3. *Badhamia hyalina* (Pers.) Berk. 173, 186 p. 51 Java.
4. *B. fasciculata* Rost. 173 Java.
5. *B. macrocarpa* Rost. 86 p. 154 Java; 173, 186 p. 51 Java; B.
6. *B. papaveracea* Berk. et Rav. 186 p. 51 Java.
7. *Physarum bogoriense* Rac. 173, 186 p. 52 Java.
8. *Ph. cinereum* Pers. 43 p. 56 Java; 47 p. 68 Krakatau; 86 p. 154 Java; 107 p. 11 (*Didymium cinereum* Fr.) Java; 142 p. 308 (*Didymium cinereum* Fr.) Java; 173, 186 p. 52 Java; 221 Port. Timor.
9. *Ph. citrinum* Schum. 173, 186 p. 51 Java.
10. *Ph. compactum* List. 86 p. 156 Java; 173 Java; B.
11. *Ph. compressum* Alb. et Schw. 173, 186, p. 51 (*Ph. candidum* Rost.) Java; B.
12. *Ph. didermoides* Rost. 173 Java. B.
13. *Ph. fasciculatum* Jungh. 107 p. 11 Fig. 8 Java; 142 p. 308 Java.
14. *Ph. flavicomum* Berk. 86 p. 154 (*Ph. Berkeleyi* Rost.) Java; 173, 186 p. 52 (*Ph. Berkeleyi* Rost.) Java; B.
15. *Ph. globuliferum* Pers. 86 p. 155 Java; 173, 186 p. 51 Java.
16. *Ph. Gulielmae* Penzig 173 Java.
17. *Ph. inaequale* Peck 86 p. 157 Java; 173 Java.
18. *Ph. javanicum* Rac. 86 p. 156 Java; 173, 186 p. 53 Java; B.
19. *Ph. lateritium* (Berk. et Rav.) Morg. 186 p. 52 (*Didymium croceoflavum* B. et Br.) Java; B.
- 19a. *Ph. leucopus* Rost. 141 p. 266 Holl. Neu-Guinea.
20. *Ph. melleum* (Berk. et Br.) Masee 86 p. 155 Java; 173, 186 p. 51 Java; B.
21. *Ph. nucleatum* Rex 86 p. 155 Java; 173, 186 p. 51 Java; B.
22. *Ph. nutans* Pers. 33 p. 242 Java; 86 p. 154 Java; 173, 186 p. 52-53 Java; B.
23. *Ph. penetrale* Rex 173 Java.
24. *Ph. polycephalum* Schwein. 173, 186 p. 52 (*Ph. polymorphum* Rost.) Java; B.
25. *Ph. psittacinum* Ditm. 173, 186 p. 52 Java.
26. *Ph. pulcherrimum* Berk. et Rav. 173, 186 p. 51 Java.
27. *Ph. pulchripes* Peck 186 p. 51 (*Ph. Petersii* B. et C. var. *intermedium* Rost.) Java.
28. *Ph. pusillum* (Grev.) List. 173 (*Ph. calidris* List.) Java.
29. *Physarum sinuosum* (Bull.) Weinm. 85 p. 157. (*Ph. bivalve* Pers.) Java; 173, 186 p. 52 (*Ph. bivalve* Pers.) Java.
30. *Ph. tenerum* Rex 86 p. 157 Java.
31. *Ph. virescens* Ditm. 86 p. 155 Java.
32. *Ph. viride* Pers. 86 p. 155 (*Ph. luteum* Lister) Java; 173, 186 p. 53 Java; B.
33. *Fuligo cinerea* (Schw.) Morg. 173 (*F. ellipsospora* Lister) Java.

34. *F. septica* Gmelin 86 p. 159 Java; 109 p. 368 (*Aethalium flavum* (Java; 173, 186 p. 53 Java).
35. *Erionema aureum* Penzig 173 Java; B.
36. *Trichamphora pezizoidea* Jungh. 86 p. 159 Java; 107 p. 12—13 Fig. 9 Java; 173 Java; 142 p. 308 Java.
37. *Physarella oblonga* (Berk. et Curt.) Morg. 173, 186 p. 51 (*Ph. mirabilis* Peck) Java; B.
38. *Cienkowskia reticulata* (Alb. et Schw.) Rost. 173, 186 p. 51 Java.
39. *Craterium aureum* (Schum.) Rost. 86 p. 159 (*Cr. mutabile* Fr.) Java; 173, 186 p. 53 (*Cr. mutabile* Fr.) Java.
40. *C. leucocephalum* Ditm. 86 p. 159 Java; 173, 186 p. 53 Java; B.
41. *C. minutum* (Leers) Fr. 86 p. 159 (*Cr. pedunculatum* Trentepohl) Java; 173, 186 p. 53 (*Cr. pedunculatum* Trentepohl) Java.
42. *Diderma effusum* (Schw.) Morg. 86 p. 160 (*Chondrioderma reticulatum* Rost.) Java; 173, 186 p. 54 (*Ch. reticulatum* Rost.) Java; B.
43. *D. hemisphaericum* (Bull.) Hornem. 173, 186 p. 54 (*Chondrioderma Michellii* Rost.) Java.
44. *D. rugosum* (Rex) Macbr. 86 p. 160 (*Chondrioderma rugosum* Rex) Java.
45. *D. subdictyospermum* (Rost.) List. 86 p. 159 (*Chondrioderma subdictyospermum* (Rost.) Lister) Java; 173, 186 p. 54 (*Ch. subd.*) Java; B.
46. *D. testaceum* Pers. 173, 186 p. 54 (*Chondrioderma testaceum* Rost.) Java.
47. *Physarina echinocephala* v. Höhn. 86 p. 158 Fig. 33 Java.
48. *Diachaea leucopoda* (D. C.) Rost. 86 p. 160 Java; B.
49. *Diachaeella bulbillosa* (Berk. et Br.) v. Höhn. 86 p. 163 Fig. 34 Java; 173, 186 p. 54 (*Diachaea splendens* Rac.; *D. bulbillosa* (Berk. et Br.) Lister) Java; B.

Fam. **Didymiaceae.**

50. *Didymium Clavus* (Alb. et Schw.) Rost. 86 p. 160 Java; 173, 186 p. 54 Java; B.
51. *D. melanospermum* (Pers.) Macbr. 86 p. 161 (*D. farinaceum* Schrad.  $\beta$  minus Lister; *D. farin.* Schrad.  $\alpha$  genuinum Lister) Java; 173, 186 p. 54 (*D. farin.* Schrad.) Java; 239 p. 85 (*D. far.* Schrad.) Java.
52. *D. nigripes* Fr. 86 p. 161 ( $\alpha$  genuinum Lister) Java; 173, 186 p. 54 (*D. microcarpon* (Fr.) Rost.) Java; B.
53. *D. squamulosum* Fr. 86 p. 160 (*D. effusum* Link) Java; 173 (*D. eff.* Link), 186 p. 54 (*D. macrospermum* Rost.) Java; B.
54. *Lepidoderma tigrinum* Rost. 173, 186 p. 54 Java.
55. *Lepidodermopsis leoninus* (Berk. et Br.) v. Höhn. 86 p. 165 Fig. 35 Java.

**Fam. Stemonitaceae.**

56. *Stemonitis ferruginea* Ehrenb. 173, 186 p. 55 (St. Smithii Macbr.) Java; B.
57. *S. fusca* Roth 40 p. 117 Eng. Neu-Guinea; 43 p. 56 Java; 129a p. 166 (St. fasciculata D.C.) Java; 144 (St. fasciculata Pers.) Java; 163 p. 120 (St. fasc. Pers.) Java; 173, 186 p. 55 Java; 221 Port. Timor; 273 (St. fasc. Pers.) Java; B.
58. *S. herbatica* Peck 86 p. 166 Java; 173 Java.
59. *S. splendens* Rost. 173, 186 p. 55 Java; B.
60. *S. subclavata* Zoll. et Mor. 271 p. 377 Java; 67a p. 301 Java.
61. *Comatricha longa* Peck 173, 186 p. 54 Java; B.
62. *C. nigra* (Pers.) Schröt. 173 (*C. obtusata* Preuss), 186 p. 54 (*C. Frieseana* (de Bary) Rost.) Java.
63. *C. pulchella* Rost. 173, 186 p. 54 (*C. Persoonii* Rost.) Java; B.
64. *C. typhoides* Rost. 86 p. 167 (*a genuina* Lister) Java; 173 Java; 186 p. 54 (*C. typhina* (Roth) Rost.) Java; B.
65. *Enerthenema papillatum* (Pers.) Rost. 173, 186 p. 55 (*E. elegans* Bowman) Java.
66. *Lamproderma Arcyrionema* Rost. 173, 186 p. 54 Java.
67. *L. columbinum* (Pers.) Rost. 173, 186 p. 54 (*L. physaroides* Rost.) Java.
68. *L. scintillans* (Berk. et Br.) Morg. 173 (*L. irideum* Masee) Java.

**Fam. Heterodermaceae.**

69. *Cribraria argillacea* Pers. 173, 186 p. 55 Java.
70. *C. intricata* Schrad. 173 Java.
71. *C. microcarpa* (Schrad.) Pers. 186 p. 55 Java.
72. *C. purpurea* Schrad. 173, 186 p. 55 Java.
73. *C. rufa* Rost. 144 (*Cr. fulva* Schrad.) Java; 273 (*Cr. fulva* Schr.) Java.
74. *C. tenella* Schrad. 173 Java.
75. *Dictydium cancellatum* (Batsch) Macbr. 173 (*D. umblicatum* Schrad.) Java; 186 p. 55 (*D. cernuum* (Pers.) Nees) Java; B.

**Fam. Liceaceae.**

76. *Licea flexuosa* Pers. 173, 186 p. 55 Java.
- 76a. *L. iricolor* Zoll. 67a. p. 300 Java.

**Fam. Tubulinaceae.**

77. *Tubifera ferruginosa* Gmelin 144 (*Licea iricolor* Zoll. et Mor.) Java; 173 (*Tubulina fragiformis* Pers.) Java; 271 p. 376 (*Licea iricolor* Zoll. et Mor.) Java; 273 (*Licea iricolor* Zoll. et Mor.) Java.
78. *T. stipitata* (Berk. et Rav.) Macbr. 173, 186 p. 55 (*Tubulina stipitata* Röst.) Java; B.
79. *Alwisia Bombarda* Berk. et Br. 60 p. 13-14 Taf. I Fig. 11-14 Sumatra.

Fam. **Lycogalaceae.**

80. *Lycogala Epidendrum* Fr. 173 (*L. miniatum* Pers.) Java; 186 p. 55 Java; 273 Java, Sumatra.

Fam. **Trichiaceae.**

81. *Trichia Botrytis* Pers. 173 Java; 186 p. 55 (*Tr. fragilis* (Sow.) Rost. Java.  
 82. *T. decipiens* (Pers.) Macbr. 173 (*Tr. fallax* Pers.) Java.  
 83. *T. flavoginea* Pers. 173 Java; 186 p. 55 (*Tr. chrysosperma* (Bull.) D.C.) Java; B.  
 84. *T. verrucosa* Berk. 173 Java.  
 85. *Hemitrichia clavata* (Pers.) Rost. 43 p. 56 (*Hemiarcyria clavata* Pers.) Java; 173 Java; 186 p. 55 (*Hemiarcyria clavata* Pers.) Java; B.  
 86. *H. Karstenii* Lister 173 Java; 186 p. 55 (*Hemiarcyria Karstenii* Lister) Java.  
 87. *H. Serpula* (Scop.) Rost. 43 p. 56 (*Hemiarcyria S.*) Java; 86 p. 167 Java; 173 Java; 186 p. 55 (*Hemiarcyria S.*) Java; B.

Fam. **Arcyriaceae.**

88. *Arcyria cinerea* (Bull.) Pers. 173, 186 p. 55 (*A. albida* Pers.) Java; B.  
 89. *A. Denudata* (L.) Sheldon 37 p. 13 (*A. punica* Pers.) Sarawak; 43 p. 56 (*A. pun.* Pers.) Java; 86 p. 167 (*A. pun.* Pers.) Java; 107 p. 13 Fig. 10 (*A. pun.* Pers.) Java; 142 p. 309 (*A. pun.* Pers.) Java; 173. 186 p. 55 (*A. pun.* Pers.) Java; 219 p. 246 Deutsch Neu-Guinea; B.  
 90. *A. ferruginea* Saut. 173, 186 p. 55 Java; B.  
 91. *A. incarnata* Pers. 173, 186 p. 55 Java; B.  
 92. *A. insignis* Kalchbr. et Cooke 173 Java.  
 93. *A. nutans* (Bull.) Grev. 173 (*A. flava* Pers.) Java; B.  
 94. *A. viridis* Zoll et Mor. 271 p. 377 Java; 273 Java; 67 a. p. 300—301 Java.  
 95. *Perichaena de pressa* Lib. 86 p. 167 Java; 173. 186 p. 55 Java.  
 96. *P. microspora* Penz 173 Java.  
 97. *P. vermicularis* Rost. 173 (*P. variabilis* Rost.) Java; 186 p. 55 (*P. reticulata* (Berk. et Br.) Rost.) Java.  
*P. pallidum* Ces. 37 p. 12 (*Stegasma pallidum* Ces.) Sarawak.  
*Enteromyxa cerebrina* Ces. 37 p. 13 Sarawak.

**Fungi.****Phycomycetes.**

## OOMYCETES.

**Chytridineae.**Fam. **Synchytriaceae.**

1. *Woroninella Psophocarp* Rac. 188 p. 195—198 Java; 190 Java; B.  
 2. *W. vulcanica* Rac. 190 Java; B.



**Fam. Rhizidiaceae.**

3. *Rhizophidium fungicolum* Zimmerm. 265 p. 149—151 Fig. 2 Java.

**Fam. Chytridiaceae.**

- 3a. *Protascus colorans* v. d. Wolk 252 p. 153—157 1 Taf. Java.

**Fam. Oochytriaceae.**

4. *Polyphagus Nowakowskii* Rac. 190 Java.

**Saprolegniineae.****Fam. Pythiaceae.**

5. *Pythium complens* Fischer 190 Java; B.  
 6. *P. De Baryanum* Hesse 105 Java.  
 7. *P. palmivorum* Butl. 113 p. 625 Java.  
 8. *P. vexans* de Bary (?) 190 Java.

**Peronosporineae.****Fam. Albuginaceae.**

9. *Cystopus Bliti* (Biv.) de Bary 190 Java.  
 10. *C. Convolvulacearum* Otth. 190 Java.  
 11. *C. Ipomeae panduratae* (Schw.) St. et Sw.; B.

**Fam. Peronosporaceae.**

12. *Phytophthora colocasiae* Rac. 6 p. 485 Java; 119 p. 161 Java; 190 Java; B.  
 13. *P. Faberi* Maubl. 205 Java; 206 p. 27 Fig. VI Java; 208 p. 6 Java; 65 Java.  
 14. *P. infestans* (Mont.) de Bary 250 p. 4 Java.  
 15. *P. nicotiana* v. Breda de Haan 3 p. 94 Java; 27 Sumatra; 28, 29 p. 417—465 Sumatra; 100 p. 14—19 Sumatra; 105 Java; 136 Java; 190 Java; B.  
 16. *P. omnivora* de Bary (?) 115 p. 317 Java; 262 p. 141—143 Fig. 12—14 Java.  
 16a. *Sclerospora graminicola* (Sacc.) Schröter 5 p. 484 Java.  
 16b. *S. javanica* v. d. Palm 159 Java.  
 17. *Plasmopara viticola* (Berk. et Curt.) Berl. et de Toni 30 p. 286—287 Java.  
 18. *Peronospora cubensis* Berk. et Curt. var. *atra* Zimmerm. 265 p. 148 Fig. 1 Java.  
 19. *P. Maydis* Rac. 179 Java; 190 Java; 210 p. 4 Pl. I-V Java; B.

**ZYGOMYCETES.****Mucorineae.****Fam. Mucoraceae.**

20. *Mucor amylomyces Rouxii* Eykm. 48 p. 101 Java; 235 (*Mucor Rouxii*) p. 318, 324 Fig. 11 Java.  
 21. *M. dubius* Wehmer 235 p. 318 Fig. 15—23 Java.  
 22. *M. javanicus* Wehmer 234 p. 612 Fig. 1—15. Java.  
 23. *M. Mucedo* L. 108 p. 286 Java.

24. *Chlamydomucor Oryzae* Went et Prinsen Geerligs 234 p. 611 Java; 235 p. 318 Fig. 12—14 Java; 242 p. 14 Tafel II Fig. 11—17 Java
25. *Rhizopus Artocarpi* Rac. 190 Java; B.
26. *Rhizopus nigricans* Ehrenb. 129 p 608 (*Ascophora mucedo* Tode) Borneo.
27. *R. Oryzae* Went. 67a p. 290, 320, 323 Java; 234 p. 612 Java; 235 p, 313 Fig. 1—10 Java; 242 p. 16 T. II Fig. 18—19, T. III Fig. 20—24, T. IV Fig. 25—34 Java.
- Xenomyces ochraceus* Ces. 37 p. 26 Taf. II Sarawak.

Fam. **Piptocephalidaceae.**

28. *Syncephalastrum javanicum* Rac. 192 Java.

**Entomophthorineae.**

Fam. **Entomophthoraceae.**

29. *Empusa Gryllii* (Fres.) Now. 190 Java.

**Ascomycetes.**

Fam. **Ascoideaceae.**

30. *Ascoidea saprolegnioides* Holterm. 96 p. 18—23 Taf. II Fig. 1—25, Java.
31. *Oscarbrefeldia pellucida* Holterm. 96 p. 6—18 Taf. I Fig. 1—9 G. Java.
32. *Conidiascus paradoxus* Holterm. 96 p. 23—27 Taf. III Fig. 1—12, Java.

Fam. **Protomycetaceae.**

33. *Protomyces Theae* Zimm. 262 p. 140—141 Fig. 11 Java; 264 p. 51 Java.
34. *Endogenella borneensis* v. Höhnelt 94 p. 42 Fig. 5 Borneo.

Fam. **Monascaceae.**

35. *Monascus purpureus* Went 248 Java.

Fam. **Saccharomycetaceae.**

36. *Saccharomyces apiculatus* Rees 182 3 Fig. Java.
37. *S. Vordermannii* Went et Prinsen Geerligs 242 p. 11 Taf. I Fig. 5—10, Taf. II Fig. 10, Java.
38. *Atichia Treubii* v. Höhnelt 95 p. 19—23 Java.
39. *A. Millardetii* Rac. 87 p. 61 Java; 95 p. 21 Java; 192 Java; 222 (*Atichiopsis Solmsii* B. Wagner) Java.

Fam. **Endomycetaceae.**

40. *Endomyces javanensis* Klöcker 114 p. 267—272 3 Fig. Java.

Fam. **Exoascaceae.**

41. *Taphrina Bussei* 64.
42. *T. Cissi* Zoll. 271 p. 390 Java; 273 Java; 67a p. 300 Java.

43. *Elsinoe Antidesmae* Rac. 190 Java; B.
44. *E. Canavalliae* Rac. 190 Java; B.
45. *E. Menispermacearum* Rac. 190 Java; B.
46. *E. viticola* Rac. 190 Java; B.

Fam. **Geoglossaceae.**

47. *Geoglossum bogoriense* Henn. et Nym. 76 p. 36 Java.
48. *G. hirsutum* Pers. 76 p. 36 Java; 83 p. 65 (*G. Hirsutum* Fr.) Java; 144 Java; 163 p. 120 Java; 271 p. 382 Java; 273 Java; 67a p. 303 Java.
49. *G. ophioglossoides* (L.) Sacc. 166 p. 196 Java.
50. *G. Walteri* Berk. 76 p. (75) 173 Java.
51. *Leotia lubrica* (Scop.) Pers. 76 p. 36 Java.
52. *Cudoniella javanica* Hennings 76 p. (75) 173 Taf. V. Fig. 22 Java; B.
53. *C. javanica* Hennings. subsp. *microspora* Penz. et Sacc. 175 p. 201 Java; 176 p. 66—67 Java.

Fam. **Helvellaceae.**

54. *Morchella deliciosa* Fr. 107 p. 31 Java; 142 p. 311 Java.
55. *Verpa indigocola* Oud. 157 p. 89 Java; L.
56. *Helvella lacunosa* Afzel. subsp. *javanica* Penz. et Sacc. 175 p. 201 Java; 176 Taf. XLIV Fig. 1, Java.

Fam. **Rhizinaceae.**

57. *Psilopezia Fleischeriani* P. Henn. et E. Nym. 76 p. 35 Java; 86 p. 124 Java.

Fam. **Pezizaceae.**

58. *Arenaea javanica* Penz. et Sacc. 86 p. 117 Java; 175 p. 211 Java; 176 p. 77. Taf. LI Fig. 3 Java; B.
59. *A. macrospora* Penz. et Sacc. 175 p. 212 Java; 176 p. 77 Taf. LI Fig. 4 Java; B.
60. *Lachnea appendiculata* Henn. 76 p. 35 Java.
61. *L. episphaeria* Henn. 83 p. 64 Java.
62. *L. Fleischeriana* Henn. 76 p. 35 Java.
63. *L. folliculata* v. Höhnelt 86 p. 112 Java.
64. *L. longiseta* Penz. et Sacc. 175 p. 203 Java; 176 p. 68 Taf. XLV Fig. 2 Java.
65. *L. lurida* Henn. et Nym. 76 p. 35 Java.  
*L. macrothelis* Syd. 219 p. 258 D. Neu-Guinea.
66. *L. scutellata* L. 107 (*Peziza scutellata*) Java; 142 p. 311 (*Peziza Scutellata*) Java; 273 (*Peziza scutellata*) Java.
67. *L. stictica* (Berk. et Curt.) Sacc. 175 p. 203 Java; B.
68. *Plicaria pustulata* (Hedw.) Fuckel 271 p. 383 (*Peziza pustulata* Pers.) Java; 67a p. 303 (*Peziza pustulata* Pers.) Java.

- 68a *P. citrina* (Penz. et Sacc.) 175 p. 202 (*Peziza citrina* Penz. et Sacc.)  
Java; 176 p. 67. Taf. XLIV Fig. 2 (*Peziza citrina* Penz. et Sacc.)  
Java; B.
69. *Humaria pangerangensis* P. Henn. et E. Nym. 76 p. 34 Java.
70. *H. subzandbayensis* Henn. et Nym. 76 p. 34 Java.
71. *H. umbilicata* Penz. et Sacc. 175 p. 202 Java; 176 p. 68 Taf. XLV  
Fig. 1 Java; B.
72. *H. xylariicola* Henn. et Nym. 76 p. 34 (73) 171 Taf. V Fig. 20 Java.
73. *H. zandbayensis* Henn. et Nym. 76 p. 34 Java.
74. *Barlaeina albo-caerulescens* Penz. et Sacc. 175 p. 202 Java;  
176 p. 67–68 Taf. XLIV Fig. 4 Java; B.
75. *B. convexella* (Karst.) Sacc. subsp. *tjibodensis* Penz. et Sacc.  
175 p. 202 Java; 176 p. 97 Taf. XLIV Fig. 3 Java.
76. *B. discoidea* (Henn. et Nym.) 76 p. 33 (*Barlaea discoidea* Henn.  
et Nym.) Java.
77. *Aleuria aurantia* (Müll.) Fuckel 142 p. 311 (*Peziza aurantia* Pers.)  
Java; 107 p. 30 (*Peziza aurantia* Pers.) Java.
78. *A. aurantia* var. *stipitata* Zoll. et Mor. 271 p. 384 (*Peziza aur.*  
var. *stipitata*) Java; 67a p. 303 (*Peziza aur. var. stipitata* Zoll.) Java.
79. *A. helvola* Jungh. 107 p. 30 Fig. 17 (*Peziza helvola* Jungh.) Java;  
142 p. 311 (*P. helvola* Jungh.) Java.
80. *A. javanica* (Nees) 128 p. 614 (*Peziza javanica* Nees) Java.
81. *A. Nymaniana* Henn. 76 p. 34 Java.
82. *A. (?) sparassiformis* Henn. 76 p. (74) 172 Taf. V Fig. 20 Java;  
175 p. 202 (*Peziza sparassiformis*) Java; B.
83. *A. tjibodensis* Henn. 76 p. (74) 172 Java.
84. *A. zandbaiensis* Henn. et Nym. 76 p. (74) 172 Java.
- 84a. *Pustularia Sundaica* v. Höhnelt 86 p. 121 Java.
85. *Aleurina crinita* (Bull.) Sacc. 157 p. 212 Java.
86. *A. subapiculata* v. Höhnelt 86 p. 123 Java.
87. *A. substipitata* Henn. et Nym. 76 p. 35 Java.
88. *A. substipitata* Henn. et Nym. var. *pleuropoda* Penz. et Sacc.  
175 p. 212 Java; 176 p. 77 Taf. LII Fig. 1 Java; B.

Fam. **Ascobolaceae.**

89. *Saccobolus Kerverni* Boud. 175 p. 218 Java; B.  
*Ascobolus cenangioides* Ces. 37 p. 11 Sarawak.
90. *A. latus* Penz. et Sacc. 175 p. 218 Java; 176 p. 84 Taf. LVI Fig. 3 Java.  
*A. sarawacensis* Ces. 44 p. 74 Sarawak.

Fam. **Helotiaceae.**

91. *Sarcoscypha javensis* v. Höhnelt 86 p. 121 Java.
- 91a. *S. obliqua* Zoll. 67a p. 303 (*Peziza obliqua* Zoll.) Java; 144 (*Peziza*  
*obliqua* Zoll.) Java; 271 p. 383 (*Peziza obliqua* Zoll. et Mor.) Java;  
273 (*Peziza obliqua* Zoll.) Java.

- Pilocratera Hindsii* (Berk.) Henn. 40 p. 118 (*Peziza* (*Trichoscypha*) *Hindisii*) Englisch Neu-Guinea; 74 p. 509 Deutsch Neu-Guinea; 71 p. 39 Deutsch Neu-Guinea; 214 p. 60 Deutsch Neu-Guinea.
92. *P. tricholoma* (Mont.) Hennings 74 p. 509 Deutsch Neu-Guinea; 76 p. (73) 171 Java; 144 (*Peziza tricholoma* Mont.) Java; 273 (*Peziza tricholoma*) Java.
93. *P. tricholoma* (Mont.) Hennings var. *celebica* Hennings 76 p 33 Taf. I Fig. 19 Java.
94. *Rutstroemina firma* (Pers.) Karst 273 (*Peziza firma* Pers.) Java.
95. *Trichopeziza citrino-alba* Penz. et Sacc. 175 p. 208 Java; 176 p. 74 Taf. II Fig. 3 Java; B.
96. *T. melleorufa* Penz. et Sacc. 175 p 208 Java; 176 p. 74 Taf. II Fig. 4 Java; B.
97. *T. porioides* Penz. et Sacc. 175 p. 209 Java; 176 p. 74 Taf. I Fig. 1 Java; B.
98. *Dasyscypha albidula* Penz. et Sacc. 175 p. 210 Java; 176 p. 75–76 Taf. I Fig. 1 Java; B.
99. *D. isabellina* Penz. et Sacc. 175 p. 210 Java; 176 p. 76 Taf. I Fig. 1 Java; B.
100. *D. javanica* Penz. et Sacc. 175 p. 209 Java; 176 p. 75 Java; B.
101. *D. javanica* Penz. et Sacc. var. *citrinula* Penz. et Sacc. 175 p. 209 Java; 176 p. 75 Taf. I Fig. 2 Java
102. *D. ochroleuca* Penz. et Sacc. 175 p. 210 Java; 176 p. 75 Taf. I Fig. 3 Java; B.
- D. simillima* Berk. et Br. 37 p. 11 Sarawak.
103. *D. tubiformis* Henn. et Nym. 76 p. 31 Java.
104. *D. Warburgiana* Hennings 70 p. 226 Taf. VIII Fig. 5 Java; 76 p. 32 Java; 197 p. 12 Fig. 4a-d Java.
105. *D. Willkommii* Hartig 107 p. 29 (*Peziza calycina* Fr.) Java; 142 p 311 (*Peziza calycina* Schum. var.) Java.
106. *Dasyscyphella difcillima* v. Höhnelt 86 p. 119 Java.
107. *Phaeomacropus Fleischerianus* Hennings 76 p. (74); 72 Taf. V Fig. 21 Java; 175 p. 201 Java.
108. *Lanzia reticulata* Penz. et Sacc. 175 p. 213 Java; 176 p. 79 Taf. LIII Fig. 1 Java.
109. *Helotiella aurea* Penz. et Sacc. 175 p. 213 Java; 176 p. 78 Taf. LII Fig. 3 Java; B.
110. *H. myoleuca* Penz. et Sacc. 175 p. 212 Java; 176 p. 78 Taf. LII Fig. 2 Java; B.
- Pseudothis cingulata* Syd. 219 p. 257 Deutsch Neu-Guinea.
111. *Solenopeziza mellina* Penz. et Sacc. 175 p. 213 Java; 176 p. 79 Taf. LIII Fig. 4 Java; B.
112. *Erinella albida* Penz. et Sacc. 175 p. 218 Java; 176 p. 83–84 Taf. LVI Fig. 2 Java; B.

113. *E. albo-flaveola* Penz. et Sacc. 175 p. 217 Java; 176 p. 83 Taf. LV Fig. 3 Java; B.
114. *E. bogoriensis* Henn. et Nym. 76 p. 33 Java.
115. *E. bogoriensis* Henn. et Nym. subsp. *candida* Penz. et Sacc. 175 p. 216 Java; 176 p. 82 Taf. LIV. Fig. 4 Java; B.
116. *E. byssacea* Henn. et Nym. 76 p. 32 Java.
117. *E. carneola* Penz. et Sacc. 175 p. 217 Java; 176 p. 83 Taf. LV Fig. 4 Java; B.
118. *E. citrino-alba* Penz. et Sacc. 175 p. 216 Java; 176 p. 82 -83 Taf. LV Fig. 2 Java; B.
119. *E. disciformis* Henn. et Nym. 76 p. 32 Java.
120. *E. javanica* Henn. et Nym. 76 p. 32 Java.
121. *E. javensis* v. Höhnelt 86 p. 120 Java.
122. *E. marginata* Pat. 163 p. 120 Java.
123. *E. nivea* Penz. et Sacc. 175 p. 216 Java; 176 p. 82 Taf. LV Fig. 1 Java; B.
124. *E. tjibodensis* Henn. et Nym. 76 p. 32 Java.
125. *E. tomentella* Penz. et Sacc. 175 p. 217 Java; 176 p. 83 Taf. LVI Fig. 1 Java; B.
126. *Hymenoscypha Asplenii* Rac. 190 Java.
127. *Davincia Helios* Penz. et Sacc. 175 p. 215 Java; 176 p. 81 Taf. LVI Fig. 2 Java; B.
128. *D. (Davincella) tenella* Penz. et Sacc. 175 p. 215 Java; 176 p. 81—82 Taf. LIV Fig. 3 Java; B.
129. *Podobelonium citrino-album* Penz. et Sacc. 175 p. 214 Java; 176 p. 79—80 Taf. LIII Fig. 2 Java; B.  
*Belonium Brauseanum* Lindau 130 p. 327 Deutsch Neu-Guinea.
130. *Belonioscypha basitricha* (Sacc.) v. Höhnelt 86 p. 111 Java; 76 p. 31 (*Belonidium fructigenum* Henn.) Java; 175 p. 215 (*Belonidium albo-cereum* Penz. et Sacc.) Java; 176 p. 80 Taf. LIV Fig. 1 (*Belonidium albo-cereum* Penz. et Sacc.) Java; B.
131. *Helotium aurantio-rubrum* Bres. forma. 33 p. 241 Java.
132. *H. citrinum* (Hedw.) var. *lenticulare* (Bull.) 107 p. 29 (*Peziza lenticularis* Bull.) Java; 142 p. 311 (*Peziza lenticularis*) Java.  
*H. epiphylla* Pers. 37 p. 11 Sarawak.
133. *H. (Calycella) griseolum* v. Höhnelt 86 p. 114 Java.
134. *H. javanicum* Penz. et Sacc. 175 p. 203 Java; 176 p. 68—69 Taf. XLV Fig. 4 Java; B.
135. *H. javanicum* Penz. et Sacc.  $\beta$  *Fleischerianum* 175 p. 204 Java; 176 p. 69 Java.
136. *H. javanicum* Penz. et Sacc.  $\gamma$  *expallens* 175 p. 204 Java; 176 p. 69 Java.
137. *H. obconicum* v. Höhnelt 86 p. 115 Fig. 25 Java.

138. *H. pteridophilum* Penz. et Sacc. 175 p. 204 Java; 176 p. 69 Taf. XLVI Fig. 1 Java; B.
139. *H. subserotinum* Henn. et Nym. 76 p. 33 Java; 175 p. 203 Java; 176 p. 68 Taf. XLV Fig. 3 Java; B.  
*Phialea aurantiaca* Syd. 219 p. 257 Deutsch Neu-Guinea.
140. *P. glaucescens* Penz. et Sacc. 175 p. 204 Java; 176 p. 69 Taf. XLVI Fig. 2 Java; B.
141. *P. Panici* v. Höhnel 93 p. 67 Java.
142. *Pezizella armenica* Penz. et Sacc. 175 p. 207 Java; 176 p. 72 Taf. XLVIII Fig. 2 Java; B.
143. *P. avellanea* Penz. et Sacc. 175 p. 207 Java; 176 p. 72—73 Taf. XLVIII Fig. 4 Java; B.
144. *P. avellanea* Penz. et Sacc. var. *macrospora* Penz. et Sacc. 175 p. 207 Java; 176 p. 73 Java.
145. *P. convexella* Penz. et Sacc. 175 p. 206 Java; 176 p. 71 Taf. XLVII Fig. 4 Java; B.
146. *P. Elasticae* Koord. 118 p. 300 Java; 119 p. 161 Java.
147. *P. epibrya* Penz. et Sacc. 175 p. 208 Java; 176 p. 73 Taf. IL Fig. 1 Java; B.
148. *P. glaberrima* Penz. et Sacc. 175 p. 205 Java; 176 p. 71 Taf. XLVII Fig. 2 Java.
149. *P. isabellino-rufa* Penz. et Sacc. 175 p. 206 Java; 176 p. 72 Taf. XLVIII Fig. 1 Java; B.
150. *P. subceracella* Penz. et Sacc. 175 p. 206 Java; 176 p. 71 Taf. XLVII Fig. 3 Java.
151. *P. tjibodensis* Penz. et Sacc. 175 p. 207 Java; 176 p. 72 Taf. XLVIII Fig. 3 Java; B.
152. *Pseudohelotium Microcenangium* Penz. et Sacc. 175 p. 208 Java; 176 p. 73 Taf. IL Fig. 2 Java; B.
- Fam. **Mollisiaceae.**
153. *Tapezia anomala* Pers. 128 p. 614 (*Peziza* (*Tapezia*) *anomala*) Sumatra.
154. *Mollisia cinerea* (Batsch) Karst. 175 p. 204 Java.
155. *M. obconica* Penz. et Sacc. 175 p. 205 Java; 176 p. 70 Taf. XLVI Fig. 4 Java; B.
156. *M. orbilioides* Penz. et Sacc. 175 p. 205 Java; 176 p. 70 Taf. XLVI Fig. 1 Java; B.
157. *M. viridulo-mellea* Penz. et Sacc. 175 p. 205 Java; 176 p. 70 Taf. XLVI Fig. 3 Java; B.
158. *M. vulgaris* Fr. 43 p. 56 (*Peziza* (*Mollisia*) *vulgaris*) Java.
159. *Dermatina javanica* v. Höhnel 89 p. 59 Java.
160. *Belonidium glauco-fuligineum* Penz. et Sacc. 175 p. 214 Java; 176 p. 80 Taf. LIII Fig. 4 Java; B.
161. *B. javense* v. Höhnel 86 p. 108 Java.

162. *B. tabacinum* Penz. et Sacc. 175 p. 214 Java; 176 p. 80 Taf. LIII  
Fig. 3 Java; B.
163. *Lasiobelonium globulare* v. Höhnel 86 p. 113 Java.
164. *Pirottaea versicolor* Penz. et Sacc. 175 p. 210 Java; 176 p. 76  
Taf. LI Fig. 2 Java; B.
165. *Pyrenopeziza Araliae* v. Höhnel 93 p. 66 Java.  
*Orbilina calochroa* Syd. 219 p. 258 Deutsch Neu-Guinea.
166. *O. macrospora* Penz. et Sacc. 175 p. 220 Java; 176 p. 86 Taf. LVII  
Fig. 4 Java; B.
167. *O. Myristicae* Hennings 79 p. 144 Java.
168. *O. neglecta* Penz. et Sacc. 175 p. 219 Java; 176 p. 85 Taf. LVII  
Fig. 2 Java; B.
169. *O. sinuosa* Penz. et Sacc. 175 p. 219 Java; 176 p. 85—86 Taf. LVII  
Fig. 3 Java; B.

Fam. **Patellariaceae.**

170. *Patinella chlorosplenioides* Penz. et Sacc. 175 p. 223 Java;  
176 p. 88—89 Taf. LIX Fig. 2 Java; B.
171. *P. phyllogena* Penz. et Sacc. 175 p. 223 Java; 176 p. 89 Taf. LIX  
Fig. 3 Java; B.
172. *Karschia Elasticae* Koord. 118 p. 300 Java; 120 p. 162 Java.
173. *K. nigerrima* Sacc. subsp. *globulifera* Penz. et Sacc. 175 p. 223  
Java; 176 p. 89 Taf. LIX Fig. 4 Java; B.
174. *K. tjibodensis* Penz. et Sacc. 175 p. 223 Java; 176 p. 89 Taf. LX  
Fig. 1 Java; B.
175. *Melaspilea myriostigma* Nyl. 154 p. 134 Java.
176. *Patellaria callispora* Penz. et Sacc. 175 p. 224 Java; 176 p. 90  
Taf. LX Fig. 2 Java; B.  
*P. Tympanis* ? 37 p. 11 Sarawak.
177. *Lecideopsella gelatinosa* v. Höhnel 88 p. 74 Java.
178. *Midotis Heinricherii* Bres. 33 p. 242 Java; 134 p. 951 Java.

Fam. **Cenangiaceae.**

179. *Cenangium (Encoela) helvolum* (Jungh.) Sacc. 86 p. 103 Fig. 24  
Java; 163 p. 120 (*Helotium helvolum* Pat.) Java; 192 (*Helotium*  
*helvolum* Jungh.) Java.
180. *C. (Cenangina) Inocarpi* (P. Henn.) v. Höhnel 71 p. 40 (*Helotium*  
*Inocarpi* Henn.) Neu-Guinea; 86 p. 69 Java; 214 p. 61 (*Helotium*  
*Inocarpi* Henn.) Deutsch Neu-Guinea.
181. *C. luteo-griseum* v. Höhnel 86 p. 105 Java.
182. *C. paradoxum* Jungh. 107 p. 27 Fig. 14 Java; 142 p. 310 Java.
183. *Tryblidiella rufula* (Spreng.) Sacc. 76 p. 28 Java.  
*Tympanis vermicularis* 37 p. 11-12 Sarawak.
184. *Bulgaria celebica* Henn. 76 p. 30 Taf. I Fig. 17 Celebes.



185. *B. javanica* (Rehm) Henn. 70 p. 226 Taf. VIII Fig. 6 (*Sarcosoma javanica* Rehm) Celebes; 76 p. 30 Celebes.  
 186. *B. Sarasini* Henn. 76 p. 30 Taf. I Fig. 18 Celebes.  
 187. *Stamnaria Equiseti* (Hoffm.) Sacc. 190 Java.  
 188. *Agyriopsis javanica* v. Höhnel 88 p. 71 Java.  
 189. *Coryne javanica* Penz. et Sacc. 175 p. 219 Java; 176 p. 85 Taf. LVII Fig. 1 Java; B.  
 190. *C. meliolicola* (Henn.) v. Höhnel 74 p. 509 (*Calloria meliolicola* Henn.) Neu-Guinea; 86 p. 106 Java; 214 p. 61 (*Calloria meliolicola* Henn.) Deutsch Neu-Guinea.  
 191. *C. sarcoides* (Jacq.) Tul. var. *javanica* 76 p. 30 Java.  
 192. *Haematomyxa bambusina* Rac. 192 Java.  
 193. *Asterocalyx mirabilis* v. Höhnel 93 p. 64 Taf. II 6 Fig. Java.  
 194. *Discomycella tjibodensis* v. Höhnel 93 p. 63 Fig. 5 Java.  
 195. *Sorokina bogoriensis* Henn. et Nym. 76 p. 31 Java.  
 196. *S. insignis* Penz. et Sacc. 175 p. 218 Java; 176 p. 84—85 Taf. LVI Fig. 4 Java; B.  
 197. *S. tjibodensis* Henn. et Nym. 76 p. 31 Java.

Fam. **Myriangiaceae.**

198. *Mollerietta Sirih* Zimm. 262 p. 140 Fig. 10 Java.  
 199. *Myriangiella orbicularis* Zimm. 265 p. 183—184 Fig. 4 Java.  
 200. *Myriangium Duriaei* Mont. et Berk. 261 p. 876 Fig. 5 Java.  
 201. *M. yunnanense* (Pat.) Rac. 192 Java.  
 202. *Anhella tristis* Rac. 190 Java; B.

Fam. **Stictidaceae.**

203. *Stegia nitens* Penz. et Sacc. 175 p. 221 Java; 176 p. 87 Taf. LVIII Fig. 2 Java; B.  
 204. *Stictis arundinacea* Pers. 175 p. 220 Java; B.  
 204a. *S. graphidea* Pers. 176a p. 178 Rawak.  
 205. *S. pallidula* Sacc. 175 p. 220 Java; B.  
 205a. *S. variolosa* Pers. 176a p. 178 Rawak.  
 206. *Delpontia pulchella* Penz. et Sacc. 175 p. 221 Java; 176 p. 86—87 Taf. LVIII Fig. 1 Java; B.  
 207. *Eupropolis Asteriscus* Henn. et Nym. 76 p. 29 Java.

Fam. **Tryblidiaceae.**

208. *Tryblidaria roseo-atra* v. Höhnel 86 p. 73 Java.  
 209. *Tryblidium Elasticae* Koord. 118 p. 300 Java; 119 p. 162 Fig. 5 Java.

Fam. **Phacidiaceae.**

- Phacidium dentatum* Fr. 37 p. 13 Sarawak.  
 210. *Cryptomyces pongamiae* Berk. et Br. 190 Java; B.  
 211. *C. Rhododendri* Rac. 190 Java.

212. *Coccomyces dentatus* (K. et Schm.) Sacc. 175 p. 222 Java; 176 p. 88 Java; B.
213. *C. dentatus* (K. et Schm.) Sacc. var. *hexagonus* Penz. et Sacc. 175 p. 222 Java; 176 p. 88 Taf. LVIII Fig. 4 Java.
214. *C. Rhododendri* Rac. 190 Java.
215. *C. tjibodensis* Rac. 190 Java.
216. *Criella Aceris-laurini* (Pat.) Sacc. et Syd. 76 p. 28 (72) 170 Taf. V Fig. 15 (*Nymanomyces Aceris-laurini* Henn.) Java; 89 p. 55 (*Synglonium insigne* Penz. et Sacc.) Java; 163 p. 121 (*Rhytisma acerinum* f. *Aceris Laurini* Pat.) Java; 171 p. 527 (*Synglonium insigne* Penz. et Sacc.) Java; 175 p. 221 Java; 176 p. 62–63 Taf. XLI Fig. 4 (*Synglonium insigne* Penz. et Sacc.) Java; 190 (*Nymanomyces Aceris laurini* Henn.) Java; B.
217. *C. Lonicerae* Henn. et Nym. 76 p. (73) 171 Java; 175 p. 221 Java; B.
218. *Irydiania filicis* Rac. 190 Java.  
*Lauterbachiella pteridis* Henn. 74 p. 508 Neu-Guinea; 214 p. 61 Deutsch Neu- Guinea.
219. *Rhytisma acerinum* (Pers.) Fr. 197a p. 3-4 Fig. 3-4 Java; 76 p. 29 Java.  
*R. Berkeleyanum* Ces. 37 p. 25 Sarawak.
220. *Phaeorhytisma Lonicerae* Henn. et Nym. 76 p. 29 Java.
221. *Moutoniella polita* Penz. et Sacc. 93 p. 58 Fig. 4 Java; 175 p. 22 Java; 176 p. 87–88 Taf. LVIII Fig. 3 Java; B.
222. *Clithris arundinacea* Penz. et Sacc. 175 p. 222 Java; 176 p. 88 Taf. LIX Fig. 1 Java; B.
223. *Marchalia notulata* Cooke et Masee 47 p. 68 Krakatau.

#### Fam. *Hypodermataceae*.

224. *Erikssonia pulchella* Penz. et Sacc. 170 p. 526 Java; 176 p. 62 Taf. XLI Fig. 3 Java; B.
225. *Mendogia bambusina* Rac. 190 Java.
226. *Hypoderma Aceris* Henn. 70 p. 223–224 Java; 76 p. 28 Java.
227. *Rhythidhysterium guaraniticum* Speg. 175 p. 528 Java; 176 p. 64 Java.
228. *R. guaraniticum* Speg. subsp. *javanicum* Penz. et Sacc. 175 p. 528 Java; 176 p. 64 Taf. XLII Fig. 3 Java.
229. *Lophodermium Calami* Henn. et Nym. 76 p. (72) 170 Taf. V Fig. 16 Java.
230. *L. Canangae* Henn. et Nym. 76 p. (72) 170 Java.
231. *L. hypodermoides* Penz. et Sacc. 170 p. 529 Java; 176 p. 65 Taf. XLIII Fig. 2 Java; B.
232. *L. javanicum* Penz. et Sacc. 93 p. 57 Java; 170 p. 529 Java; 176 p. 65 Java; B.
233. *L. javanicum* Penz. et Sacc. var. *Pandani* Penz. et Sacc. 170 p. 529 Java; 176 p. 65 Taf. XLIII Fig. 3 Java.

234. *L. maculare* (Fr.) de Not. 170 p. 529 Java; B.  
 235. *L. Mangiferae* Koord. 119 p. 163 Textfig. 6 Java.  
 236. *L. Raapianum* Penz. et Sacc. 170 p. 529—530 Java; 176 p. 65—66  
 Taf. XLIII Fig. 4 Java; B.  
 237. *L. tjibodense* Henn. et Nym. 76 p. 28 Java.  
 238. *Schizacrospermum filiforme* Henn. et Nym. 76 p. (72) 170  
 Taf. V Fig. 17 Java.

Fam. **Hysteriaceae.**

239. *Auglographum-atromaculans* Penz. et Sacc. 170 p. 527 Java;  
 176 p. 63 Taf. XLII Fig. 1 Java; B.  
*A. spilomoide* Ces 37 p. 14 Sarawak.  
*A. maximum* Masee 139 p. 177 Br. Neu-Guinea.  
 240. *Morenoella breviuscula* (Penz. et Sacc.) v. Höhnelt 89 p. 54  
 Java; 170 p. 527—528 (*Lembosia breviuscula* Penz. et Sacc.) Java;  
 176 p. 63 Taf. XLII Fig. 2 (*Lembosia breviuscula* Penz. et Sacc.)  
 Java.  
 241. *M. Calami* Rac. 190 Java.  
 242. *M. gedeana* Rac. 190 Java; B.  
 243. *M. gedeana* Rac. var. *Calamicola* Rac. 190 Java.  
 244. *M. Marattiae* Rac. 190 Java; B.  
 245. *M. Nephrodii* Rac. 190 Java; B.  
 246. *Lembosia decalvans* Pat. 163 p. 122 Java.  
 247. *L. decalvans* Pat var. *cocculi* Pat. 163 p. 122 Java.  
 248. *L. Dendrochili* Lév. 128 p. 618 Java.  
 249. *L. diffusa* Wint 170 p. 527—528 Java; 176 p. 63 Java; B.  
 250. *L. javanica* (Pat.) Rac. 190 Java; B.  
 251. *L. longissima* Rac, 47 p. 68 Krakatau; 190 Java.  
 252. *L. serpens* Pat. 163 p. 122 Java.  
 253. *Hysterostomella Alsophilae* Rac. 190 Java; B.  
 254. *Parmularia discoidea* Rac. 190 Java; B.  
 255. *P. javanica* Pat. 163 p. 122 (*Schneepia javanica* Pat.) Java; B.  
 256. *Hysterium Alstoniae* Tassi 269 p. 23 Molukken.  
*H. Berkeleyanum* Ces. 37 p. 13 Sarawak.  
 257. *H. flexuosum* Schwein. 107 p. 15 Java; (Varietas) 142 p. 309.  
 258. *H. Lineare* Fries 271 p. 379 Java; 67a p. 301 Java.  
 259. *H. pulicare* Pers. 76 p. (72) 170 Java.  
*H. serpens* Ces. 37 p. 13 Sarawak.  
 260. *Aldona stella-nigra* Rac. 175 p. 231 Java; 176 p. 64 Taf. XLII  
 Fig. 4 Java; 190 Java; B.  
 261. *Hysteroglyphum Elasticae* Koord. 118 p. 301 Java; 119 p.  
 163—164 Textfig. 7 Java.  
 262. *H. olegomerum* Penz. et Sacc. 170 p. 528 Java; 176 p. 64 Taf.  
 XLIII Fig. 1 Java; B.

Fam. **Acrospermaceae.**

263. *Acrospermum foliicolum* Berk. 170 p. 530 Java; 176 p. 66 Java; B.

Fam. **Eutuberaceae.**

264. *Hydnobolitus javanicus* v. Höhnel 85 p. 36 Java.  
265. *Sphaerocreas javanicum* v. Höhnel 85 p. 30 Fig. 1 Java.

Fam. **Aspergillaceae.**

266. *Eurotium margaritaceum* Lév. 273 Java.

Fam. **Onygenaceae.**

267. *Onygenopsis Engleriana* Henn. 83 p. 64 Fig. 1—4 Java.

Fam. **Trichocomaceae.**

268. *Trichocoma paradoxa* Jungh. 37 p. 13 Borneo; 56 p. 68 Java; 76 p. 28 Java; 107 p. 9 Fig. 7 Java; 142 p. 308 Java.

**Pyrenomycetes.**Fam. **Perisporiaceae.**

269. *Meliola amphitricha* Fr. 37 p. 25 Sarawak; 76 p. (62) 160 Java; 109 p. 619 Borneo; 129a p. 265 Java; 163 p. 121 Java.  
270. *M. Anacardii* Zimm. 265 p. 151—152 Fig. 3 Java.  
271. *M. cladotricha* Lév. 129a p. 266 Borneo; 251 p. 25 Neu-Guinea.  
272. *M. curviseta* Rac. 190 Java.  
273. *M. Hercules* Henn. 86 p. 42 Java.  
274. *M. heteroseta* v. Höhnel 88 p. 13 Java.  
275. *M. octospora* Cooke 89 p. 9 Java; 170 p. 389 Java; 176 p. 2—3 Taf. II Fig. 1 Java; B.  
276. *M. pennata* v. Höhnel 87 p. 45 Java.  
277. *M. pectinata* v. Höhnel 89 p. 14 Java.  
278. *M. quadrispina* Rac. 190 Java.  
279. *M. substenospora* v. Höhnel 86 p. 43 Java.  
280. *M. Willoughityae* Zimm. 269 p. 23 Java.  
*Meliolina arborescens* Syd. 219 p. 254 Deutsch Neu-Guinea.  
281. *Phymatosphaeria Calami* Rac. 190 Java; B.  
281a. *Leptomeliola javensis* v. Höhnel 95b p. 25 Java.  
282. *Schiffnerula mirabilis* v. Höhnel 87 p. 56 Java.  
283. *Wentiomycetes javanicus* Koord. 118 p. 301 Java; 119 p. 168—170 Textfig. 9 Java.  
284. *Dimerosporium Ballardynae* Rac. 192 Java.  
285. *D. hamatum* Penz. et Sacc. 170 p. 389 Java; 176 p. 2 Taf. I Fig. 3 Java; B.  
286. *D. insignis* Cooke 42 p. 70 Ternate.  
287. *D. minutissimum* v. Höhnel 87 p. 45 Java.

288. *D. occultum* Rac 190 Java.  
289. *D. pangerangensis* Henn. et Nym. 76 p. (61) 159 Java.  
290. *Balladyna Gardeniae* Rac. 190 p. 6 Java.  
*B. Ledermannii* Syd. 219 p. 254 Deutsch Neu-Guinea.  
291. *B. Medinillae* Rac. 192 Java.  
292. *Porodiella Aceris* Rac. 190 Java.  
293. *P. Mucunae* Rac. 190 Java.  
294. *P. perisporioides* (Berk. et Curt.) Sp. 190 Java.  
295. *P. perisporioides* (Berk. et Curt.) Sp. subsp. *asperula* Penz.  
et Sacc. 170 p. 389 Java; 176 p. 2 Taf. L Fig. 4 Java; B.  
296. *Alina Jasmini* Rac. 192 Java.  
297. *Zukalia parasitans* v. Höhnelt 88 p. 22 Java.  
298. *Perisporium* (*Perisporiella*) *Myristicae* Henn. 79 p. 141 Java.  
299. *Hyaloderma Uredinis* Rac. 192 Java.  
300. *Antennaria setosa* Zimm. 265 p. 151 Java; 267 p. 45 Fig. 31  
Java; 268 Java.  
301. *A. scoriadea* Berk. 175 p. 243 Java; B.  
302. *Limacina graminella* v. Höhnelt 95a p. 143 Java.  
303. *Capnodium Castilloae* (Zimm.) Bern. 18 Java; 269 p. 14 (*Antennaria Castilloae* Zimm.) Java.  
304. *C. Guajavae* Bern. 18 Java.  
305. *C. indicum* Bern. 17 Java; 20 Java.  
306. *C. javanicum* Zimm. 18 Java; 265 p. 151 Java; 267 p. 42—44  
Fig. 26—29 Java; 268 Java.  
307. *C. stellatum* Bern. = p.p. *Atichia Millardetii* 18 Java; 95 p. 21—22 Java.  
308. *C. stysanophorum* Penz. et Sacc. 170 p. 390 Java; 176 p. 3 Taf. II  
Fig. 2 Java; B.  
309. *Myriococcum?* *spinuligerum* Penz. et Sacc. 170 p. 388—389  
Java; 176 p. 1—2 Taf. I Fig. 2 Java; B.

Fam. **Mycrothyriaceae.**

310. *Asterula Bruinsmai* Koord. 118 p. 301 Java; 119 p. 171 Taf. XI  
Fig. 17 Textfig. 10 Java.  
311. *A. corniculariformis* Hennings 76 p. (62) 160 Java.  
312. *Myriocopron affine* Penz. et Sacc. 171 p. 525 Java; 176 p. 60  
Taf. XL Fig. 4 Java; B.  
313. *M. Euryae* Rac. 192 Java.  
314. *M. millepunctatum* Penz. et Sacc. 171 p. 524—525 Java; 176 p. 60  
Taf. XL Fig. 3 Java; B.  
315. *Clypeolum Hymenophylli* Henn. et Nym. 76 p. (62) 16 Java.  
316. *C. Talaumae* Rac. 190 Java.  
317. *C. vulgare* Rac. 192 Java.  
318. *Trichothyrium densum* Rac. 192 Java.  
319. *T. jungermanniioides* Rac. 192 Java.

320. *Mycrothyrium microscopicum* Desm. 163 p. 121 Java.  
 321. *Mycrothyriella malacoderma* v. Höhnelt 88 p. 17 Java.  
 321a. *Asterina alpina* Rac. 190 Java.  
 321b. *A. azareae* Lév. 144 Java; 273 Java.  
 321c. *A. consimilis* v. Höhnelt 87 p. 50 Java.  
 322. *A. Cyathearum* Rac. 88 p. 11 (*Halbania cyathearum* Rac.) Java; 190 Java; B.  
 322a. *A. Lawsoniae* Hennings 76 p. (61) 159 Java.  
 323. *A. Loranthacearum* Rehm. var. *javanensis* v. Höhnelt 95a p. 140 Java.  
 324. *A. punctiformis* Lév. 129a p. 267 Java.  
 324a. *A. reptans* Berk. et Curt. 163 p. 121—122 Java.  
 324b. *A. sponiae* Rac. 190 Java.  
 325. *A. subglobulifera* v. Höhnelt 95a p. 141 Java.  
 326. *Asterinella tjibodensis* v. Höhnelt 95a p. 142 Java.  
 327. *Myxasterina Strychni* v. Höhnelt 87 p. 59 Java.  
 328. *Seynesia calamicola* Henn. et Nym. 76 p. (62) 160 Java.  
 329. *S. coccoidea* Hennings 79 p. 141 Java.  
 330. *Trichopeltis montana* Rac. 192 Java.  
 331. *Micropeltis alangalang* Rac. 190 Java.  
 332. *M. applanata* Mont. 129a p. 265 Timor? Java.  
 333. *M. bambusina* v. Höhnelt 86 p. 48 Java.  
 334. *M. biseptata* v. Höhnelt 88 p. 12 Java.  
 335. *M. bogoriensis* v. Höhnelt 93 p. 8 Java.  
 336. *M. leucoptera* Penz. et Sacc. 171 p. 525 Java; 176 p. 61 Taf. XLI Fig. 1 Java; B.  
 337. *M. macropelta* Penz. et Sacc. 171 p. 525 Java; 176 p. 61 Taf. XLI Fig. 2 Java; B.  
 338. *M. Sirie* Rac. 192 Java  
 339. *Scutellum javanicum* v. Höhnelt 93 p. 10 Java.  
 340. *Scolecopeltis salacensis* Rac. 190 Java.  
 340a. *S. triviale* Rac. 192 Java.  
 341. *Scolecopeltopsis aeruginea* (Zimm.) v. Höhnelt 86 p. 41 Fig. 14 Java; 265 p. 183 (*Scolecopeltis aeruginea* Zimm.) Java.  
 342. *S. transiens* v. Höhnelt 88 p. 30 Java.  
 343. *Polystomella sordidula* (Lév.) Rac. 192 Java.  
 344. *Heterochlamys javanica* Rac. 192 Java.  
*Pemphidium coffeinum* Ces. 37 p. 25 Sarawak.  
 345. *Limacinula samoensis* v. Höhnelt 88 p. 37 Java.  
 346. *Celtidia duplicispora* Janse 102 Java; 95a p. 137 Java.

Fam. **Hypocreaceae.**

347. *Hyponectria Pandani* Rac. 190 Java; B.  
 348. *H. Raciborskii* Penz. et Sacc. 171 p. 506 Java; 176 p. 39 Taf. XXVII Fig. 3 Java; B.

349. *Micronectria Pterocarpi* Rac. 119 p. 176 Java; 190 Java.
350. *Byssonectria delicatula* Penz. et Sacc. 171 p. 507—508 Java; 176 p. 39 Taf. XXVII Fig. 2 Java; B.
351. *B. javanica* (Penz. et Sacc.) v. Höhnel 88 p. 23 Java; 170 p. 388 (*Cryptothecium javanicum* Penz. et Sacc.) Java; 176 p. 1 Taf. I Fig. 1 (*Cryptothecium javanicum* Penz. et Sacc.) Java; B. (*Cryptothecium javanicum*).
352. *Pseudotrype Rehmiana* Henn. et Nym. 76 p. (66) 164 Java.
353. *Chilonectria* (*Chilostilbe*) *javanica* Penz. et Sacc. 171 p. 508—509 Java; 176 p. 40 Taf. XXVIII Fig. 1 Java.
354. *C. macrospora* Penz. et Sacc. 171 p. 508 Java; 176 p. 39 Taf. XXVII Fig. 4 Java; B.
355. *Penicilliopsis clavariaeformis* Solms Laubach 76 p. 27 Java; 163 p. 124 Taf. XXV Fig. 16 20 Java; 217 p. 53—72 Taf. VI Fig. 1—20, Taf. VII Fig. 23—27 Java; B.
356. *Hypomyces australiensis* v. Höhnel 86 p. 20 Java.  
*H. chromaticus* Berk? 37 p. 19 Sarawak.
357. *H. javanicus* v. Höhnel 86 p. 19 Java.
358. *Torrubiella luteorostrata* Zimm. 261 p. 872 Java.
359. *T. sericicola* v. Höhnel 86 p. 28 Java.
360. *Melanospora Wentii* Koord. 118 p. 301 Java; 119 p. 172 Textfig. 11 Java.
361. *Neoskofitzia termitum* v. Höhnel 85 p. 14 Java.
362. *Ciliospora gelatinosa* Zimm. 265 p. 217 Fig. 5 Java.
363. *Nectriella aurantia* Penz. et Sacc. 171 p. 506—507 Java; 176 p. 38 Taf. XXVI Fig. 3 Java; B.
364. *N. pallidula* Penz. et Sacc. 76 p. (63) 161 Java; 171 p. 507 Java; 176 p. 38 Taf. XXVI Fig. 4 Java; B.
365. *N. rufo-fusca* Penz. et Sacc. 171 p. 507 Java; 176 p. 38—39 Taf. XXVII Fig. 1 Java; B.
366. *N. (Notarisiella) setulosa* Penz. et Sacc. 171 p. 507 Java; B.
367. *Pseudonectria tornata* v. Höhnel 89 p. 10 Java; 232 p. 46 Java.
368. *Nectria (Dialonectria) agaricicola* Hennings 76 p. (63) 161 Java.
369. *N. (Lasionectria) albo-fimbriata* Penz. et Sacc. 171 p. 513 Java; 176 p. 44—45 Taf. XXXI Fig. 2 Java; B.
370. *N. (Dialonectria) amaniana* Zimm. 197 p. 31 Java.
371. *N. (Dialonectria) ambigua* Penz. et Sacc. 171 p. 511 Java; 176 p. 42 Java; B.
372. *N. (Dialonectria) ambigua* Penz. et Sacc. var. *pallens* Penz. et Sacc. 171 p. 511 Java; 176 p. 42 Taf. XXIX Fig. 3 Java.
373. *N. (Dialonectria) arundinella* Penz. et Sacc. 171 p. 512 Java; 176 p. 43 Taf. XXX Fig. 3 Java.
374. *N. bainii* Massee 115 p. 317 Java.
375. *N. (Dialonectria) bogoriensis* Hennings 83 p. 62 Java;

376. *N. (Dialonectria) calamicola* Henn. et Nym. 76 p. (63) 161 Java.
377. *N. callispore* v Höhnelt 86 p. 21—23 Fig. 6 Java.
378. *N. (Dialonectria) carneo-flavida* Penz. et Sacc. 171 p. 511—512 Java; 176 p. 43 Taf. XXX Fig. 1 Java; B.
379. *N. (Lasionectria) Cinchonae* Zimmerm 197 p. 46 Fig. 23 a-b Java.
380. *N. (Hyphonectria) cinereo-papillata* Henn. et Nym. 76 p. (63) 161 Java.
381. *N. cinnabarina* (Fr.) 7 p. 652 Java; 128 p. 617 (*Sphaeria (caespitosa) cinnabarina* Fr.) Java.
382. *N. (Eunectria) coccinea* (Pers) Fr. 37 p. 15 Sarawak; 109 p. 388 (*Sphaeria coccinea* Pers.) Java; 128 p. 617 (*Sphaeria (caespitosa) coccinea*) Java; 171 p. 510 Java; B.
383. *N. (Lepidonectria) coffeicola* Zimmerm. 179 p. 39 Fig. 22a-c Java; 262 p. 103—105 Fig. 4—5 (*Nectria (Dialonectria) coffeicola* Zimm.) Java; 264 p. 863 Java; 266 p. 478 Java; 267 p. 73 Java; 268 Java; 269 p. 20 Java.
384. *N. (Lepidonectria) coffeicola* Zimm. var. *ochroleuca* Zimm. 262 p. 105 Java.  
*N. conferta* Syd. 219 p. 255—256 Deutsch Neu-Guinea.
385. *N. (Eunectria) coronata* Penz. et Sacc. 86 p. 24 Fig. 7 Java; 171 p. 510 Java; 176 p. 41 Taf. XXVIII Fig. 4 Java; B
386. *N. diversispora* Bern. 20 Java.
387. *N. (Hyphonectria) dolichospora* Penz. et Sacc. 171 p. 513 Java; 176 p. 45 Taf. XXXI Fig. 3 Java; B.
388. *N. discophora* Mnt. 262 p. 105 Fig. 6 (*Nectria striatispora* Zimm.) Java.
389. *N. (Lasionectria) Elasticae* Koorders 118 p. 301 Java; 119 p. 174 Abb. 12 Java.
390. *N. (Eunectria) eustoma* Penz. et Sacc. 89 p. 14 Java; 171 p. 509—510 Java; 176 p. 41 Taf. XXVIII Fig. 3 Java. B.
391. *N. (Dialonectria) episphaeria* (Tode) Fries 76 p. (63) 161 Java; 83 p. 65 Java; 128 p. 617 (*Sphaeria (denudata) episphaeria* Tode) Java.  
*N. (Dialonectria) episphaeria* (Tode) Fr. var. *Kretzschmariae* Henn. 71 p. 38 Neu-Guinea; 214 p. 61 Deutsch Neu-Guinea.
392. *Nectria (Dialonectria) episphaerioides* Penz. et Sacc. 171 p. 511 Java; 176 p. 42 Taf. XXIX Fig. 2 Java; B.
393. *N. (Lasionectria) fructicola* Henn. et Nym. 76 p. (64) 162 Java; 265 p. 182 Java (*Nectria fructicola* Zimm.); 267 p. 73 (*Nectria fructicola* Zimm.) Java; 268 *Nectria fructicola* Zimm.) Java.
394. *N. (Lepidonectria) gedehensis* Hennings 76 p. (64) 162 Java.
395. *N. (Dialonectria) gigantospora* Zimm. 116 Java; 118 p. 301 Java; 119 p. 175 Java; 269 p. 15 Java.  
*N. haematococca* Berk. et Br. 37 p. 15 Sarawak.



396. *N. hypocreoides* Berk. et Cooke 89 p. 11 Java.
- 396a. *N. (Hyponectria) hypoxantha* Penz. et Sacc. 171 p. 513—514 Java; 176 p. 45 Taf. XXXI Fig. 4 Java; B.
397. *N. (Lepidonectria) Henningsii* Rehm. 76 p. (64) 162 Java.
398. *N. (Hyponectria) leucotricha* Penz. et Sacc. 171 p. 512—513 Java; 176 p. 44 Taf. XXXI Fig. 1 Java; B.
399. *N. lucida* v. Höhnelt 86 p. 24 Java.
400. *N. luteo-coccinea* v. Höhnelt 86 p. 25 Java.
401. *N. ignia* v. Höhnelt 89 p. 15 Java; 232 p. 46—47 Fig. 8 Java.
402. *N. monilifera* Berk. et Br. 93 p. 20 Java.
403. *N. (Dialonectria) nigella* Penz. et Sacc. 171 p. 512 Java; 176 p. 43 Taf. XXX Fig. 2 Java; B.
404. *N. (Hyphonectria) Nymaniana* Henn. 76 p. (63) 161 Java.
405. *N. peristomata* Zimm. 91 p. 182 Java; 266 p. 478 Fig. 7 Java.
406. *N. Peziza* (Tode) Fr. 107 p. 16 (*Sphaeria* *Peziza*) Java; 142 p. 310 (*Sphaeria* (*Denudata*) *Peziza* Pers.) Java.
407. *N. (Eunectria) radians* Penz. et Sacc. 171 p. 510—511 Java; 176 p. 41—42 Taf. XXIX Fig. 1 Java; B.
408. *N. raripila* Penz. et Sacc. 175 p. 228 Java; 176 p. 46 Taf. XXXII Fig. 2 Java; B.
409. *N. sanguinea* Fries 43 p. 56 Java.
410. *N. sinopica* Fr. 128 p. 617 (*Sphaeria* (*Caespitosa*) *sinopica* Fr.) Java.
411. *N. subcoccinea* Sacc. et Ellis 261 p. 872 Fig. I (*Nectria* (*Eunectria*) *coccidophthora* Zimm.) Java.
412. *N. (Lepidonectria) subfurfuracea* Henn. et Nym. 76 p. (64) 162 Java; 86 p. 23—24 Java.
413. *N. (Lepidonectria) subsquamuligera* Henn. et Nym. 76 p. (64) 162 Java.
414. *N. tetraspora* Pat. 163 p. 24 Java.
415. *N. tjibodensis* Penz. et Sacc. 18 (*Nectria bogoriensis* Bern.) Java; 76 p. (63) 161 (*Nectria* (*Eunectria*) *tjibodensis* Henn.) Java; 76 p. (62) 160 (*Nectria flocculenta* Henn. et Nym.) Java; 79 p. 141—142 (*Nectria* (*Lasionectria*) *vanillicola* Henn.) Java; 83 p. 62 (*Nectria* (*Lepidonectria*) *coccineo-ochracea* Henn.) Java; 91 p. 181 (*Nectria vanillicola* Henn.) Java; 91 p. 182 (*Nectria vanillae* Zimm.) Java; 91 p. 182 (*Nectria bogoriensis* Bern.) Java; 93 p. 22 (*Nectria* (*Lasionectria*) *luteopilosa* Zimm.) Java; 171 p. 512 Java; 176 p. 43—44 Taf. XXX Fig. 4 Java; 190 (*Nectria bogoriensis* Bern.) Java; 232 p. 99 Java; 265 p. 182 (*Nectria* (*Lasionectria*) *luteopilosa* Zimm.) Java; 266 p. 470—474 Fig. 1—3 Textfig. 2—4 (*Nectria* (*Lasionectria*) *Vanillae* Zimm.) Java; 267 p. 73 (*Nectria luteopilosa* Zimm.) Java; 268 (*Nectria luteopilosa* Zimm.) Java; B.
416. *N. (Dialonectria) trachycarpa* Penz. et Sacc. 171 p. 511 Java; 176 p. 42—43 Taf. XXIX Fig. 4 Java; B.

417. *N. umbilicata* Henn. 89 p. 15 (*Nectria* (*Dialonectria*) *oculata* v. Höhnel) Java.
418. *N.* (*Eunectria*) *vulgaris* Speg. 171 p. 510 Java; 264 p. 803 (*Nectria vulgaris* Oud?) Java; B.
419. *N.* (*Cryphonectria*) *xanthostroma* Penz. et Sacc. 171 p. 514 Java; 176 p. 45—46 Taf. XXXII Fig. 1 Java; B.
- 419a. *Sphaerostilbe cinerascens* Hennings 83 p. 63 Java.
- 419b. *S. repens* Berk. et Br. 25 p. 10; 206 p. 20 Java.
420. *Ijuhya vitrea* Starb. var. *javanica* v. Höhnel 93 p. 42 Taf. I, 5 Fig. Java.
421. *Treubiomyces pulcherrimus* v. Höhnel 88 p. 25 Fig. 1 Java.
422. *Neohenningsia stellatula* Koord. 118 p. 301 Java; 119 p. 164—165 Textfig. 8 Java.
423. *Lisea Parlatoriae* Zimmerm. 261 p. 873 Java.
424. *Letendreaa atrata* Penz. et Sacc. 86 p. 64 Java; 171 p. 514 Java; 176 p. 46 Taf. XXXII Fig. 3 Java; B.
425. *Calonectria aurantiella* Penz. et Sacc. 171 p. 515 Java; 176 p. 47 Taf. XXXIII Fig. 2 Java; B.
426. *C. Calami* Hennings 76 p. (65) 163 Java.
427. *C. collarioides* Penz. et Sacc. 171 p. 515 Java; 176 p. 47 Taf. XXXIII Fig. 1 Java; B.
428. *C. coffeae* Zimmerm. 262 p. 139 Java.
429. *C. cremea* Zimmerm. 262 p. 140 Fig. 9 Java.
430. *C. discophora* v. Höhnel et Weese 232 p. 68—69 Java.
431. *C. effugiens* Penz. et Sacc. 171 p. 515 Java; 176 p. 47 Taf. XXXII Fig. 4 Java; B.
432. *C. gigaspora* (Henn.) Weese. 76 p. (63) 161 (*Nectria* (*Dialonectria*) *gigaspora* Henn.) Java.
433. *C. sulcata* Starbäck 86 p. 27 (*Calonectria Meliae* Zimm.) Java; 262 p. 106 Fig. 7—8 (*Calonectria Meliae* Zimmerm.) Java; 264 p. 803 (*Calonectria Meliae* Zimmerm.) Java.
434. *Gibberella Engleriana* Hennings 83 p. 63 Java.
435. *Paranectria imperconspicua* v. Höhnel 87 p. 10 Java.
436. *Pleonectria coffeicola* Zimm. 265 p. 183 Java.
437. *Pleogibberella calamia* Berl. et Vogl. 141 p. 265 Holländisch Neu-Guinea.
438. *Ophionectria?* *anomala* Rac. 191 Java.
439. *O. calamicola* Henn. et Nym. 76 p. 25 (65) 163 Java; 233 p. 38 Java.
440. *O. coccicola* (Ell. und Ev.) Berl. und Vogl. 261 p. 874 Fig. 2 Java.
441. *O. conica* Penz. et Sacc. 171 p. 516 Java; 176 p. 48 Taf. XXXIII Fig. 3 Java; B.
442. *O. foliicola* Zimm. 265 p. 128 Java.
443. *O.* (*Ophiostilbe*) *Trichiae* Penz. et Sacc. 171 p. 516—517 Java; 176 p. 48—49 Taf. XXXIII Fig. 4 Java; B.

444. *O. trichospora* (Berk. et Br.) Sacc. 171 p. 516 Java; 176 p. 48 Java; B.  
 445. *Barya montana* Rac. 191 Java.  
 446. *B. salaccensis* Rac. 191 Java.  
 447. *Megalonectria Pseudotricha* (Schum.) Speg. 76 (65) 163 Java;  
 83 p. 65 Java; 118 p. 202 Java; 119 p. 176 Fig. IV Abb. 13 Java;  
 163 p. 124 Java; 171 p. 516 Java; 176 p. 48 Java; 221 Timor; B.  
 448. *Hypocrea alutacea* (Pers.) Ces. et De Not. 107 p. 24 (*Sphaeria*  
*alutacea* Pers.) Java; 271 p. 379 (*Sphaeria alutacea* Pers.) Java. 67a  
 p. 301—302 (*Sphaeria alutacea* Pers.) Java.  
 449. *H. aurantia* Hennings 76 p. (65) 163 Java.  
 450. *H. bogoriensis* Hennings 83 p. 63 Java.  
 451. *H. (Euhypocrea) Catoptron* Berk. et Br. 171 p. 520 Java; 176  
 p. 52 Taf. XXXV Fig. 3 Java.  
 452. *H. (Homalocrea) discolor* Penz. et Sacc. 171 p. 520 Java; 176 p.  
 52—53 Taf. XXXVI Fig. 1 Java.  
 453. *Hypocrea enteromorpha* (Lév.) Sacc. 128 p. 616 (*Sphaeria*  
*pulvinata*) *enteromorpha*) Java.  
 454. *H. (Euhypocrea) fulva* Penz. et Sacc. 171 p. 520 Java; 176 p. 52  
 Taf. XXXV Fig. 4 Java; B.  
 455. *H. gelatinosa* (Tode) Fries 76 p. (65) 163 Java; 171 p. 519 Java;  
 176 p. 51 Java.  
 456. *H. gelatinosa* (Tode) Fries var. *oligotheca* Penz. et Sacc.  
 171 p. 519 Java; 176 p. 51—52 Taf. XXXV Fig. 1 Java; B.  
*H. gelatinosa* (Tode) Fries var. *umbrina* Fr. 37 p. 14 Sarawak.  
 457. *H. (Euhypocrea) lenta* (Tode) Berk. 171 p. 519 Java; B.  
 458. *H. Lixii* Pat. 162 p. 138 Neu-Guinea.  
 459. *H. (Clitoniella) longicolla* Penz. et Sacc. 171 p. 520—521 Java;  
 176 p. 53 Taf. XXXVI Fig. 2 Java; B.  
*H. novo-guinensis* Hennings 74 p. 507 Deutsch Neu-Guinea; 214 p. 62  
 Deutsch Neu-Guinea.  
 460. *H. Nymani* Hennings 76 p. (65) 163 Java; 86 p. 26 Java.  
 461. *H. pulchella* Penz. et Sacc. 170 p. 229 Java; 176 p. 53 Taf. XXXVI  
 Fig. 3 Java; B.  
*H. rhytidospora* Ces. 37 p. 14 Taf. III Sarawak.  
 462. *H. rufa* (Pers.) Fr. form. *hypoxylonicola* Hennings 83 p. 65 Java.  
 463. *H. saccharalis* Rac. 190 Java.  
 464. *H. Sacchari* Went. 230 Java; 237 Java.  
 465. *H. (Euhypocrea) Sclerodermatis* Penz. et Sacc. 171 p. 519—520  
 Java; 176 p. 52 Taf. XXXV Fig. 2 Java; B.  
 466. *H. Solmsii* Ed. Fischer 55 p. 129—143 Taf. XVII Fig. 1—5. Taf.  
 XVIII Fig. 6—10 Java; 76 p. (65) 163 Java.  
 467. *H. Solmsii* Ed. Fischer var. *corniformis* 33 p. 241 Java.  
 468. *Thümenella javanica* Penz. et Sacc. 171 p. 519 Java; 176 p. 51  
 Taf. XXXIV Fig. 4 Java; B.

469. *Podocrea Cordyceps* Penz. et Sacc. 175 p. 229 Java; 176 p. 53—54 Taf. XXXVI Fig. 4 Java
470. *Corallomyces brachysporus* Penz. et Sacc. 175 p. 228 Java; 176 p. 54 Taf. XXXVII Fig. 1 Java; B.
471. *Broomella Ichnaspidis* Zimmerm. 261 p. 874—875 Fig. 3 Java.
472. *B. Ichnaspidis* Zimmerm. var. *major* 261 p. 875 Java.
473. *Epichloë Bambusae* Pat. 2 p. 202 Java; 163 p. 125—126 Java; 171 p. 521 Java; 176 p. 55 Taf. XXXVII Fig. 3—4 Java; 191 Java.
474. *E. Kyllingiae* Racib. 191 Java.
475. *E. montana* Rac. 190 Java; 191 mit Abb. Java.
476. *E. Warburgiana* Magnus 137 Celebes.
477. *Tubeufia anceps* Penz. et Sacc. 171 p. 518 Java; 176 p. 50 Taf. XXXIV Fig. 3 Java; B.
478. *T. coronata* Penz. et Sacc. 171 p. 517—518 Java; 176 p. 50 Taf. XXXIV Fig. 2 Java; B.
479. *T. javanica* Penz. et Sacc. 171 p. 517 Java; 176 p. 49 Taf. XXXIV Fig. 1 Java; B.
480. *Hypocrella Amomi* Rac. 191 Java.  
*H. aurea* Syd. 219 p. 256 Deutsch Neu-Guinea.
481. *H. bispora* v. Höhnel 87 p. 14 Java.
482. *H. convexa* Rac. 191 Java.
483. *H. cretacea* v. Höhnel 86 p. 37 Java.
484. *H. discoidea* (Berk. et Br.) Sacc. 33 p. 241 Java; 190 Java.
485. *H. Engleriana* Koord. 119 p. 177 Abb. 13 Fig. 1—6 Java.
486. *H. (?) Gardeniae* Hennings 70 p. 223 Java.
487. *Hypocrella globosa* Rac. 191 Java.
488. *H. Grewiae* Koord. 119 p. 179 Taf. 13 III Java.  
*H. insignis* Syd. 219 p. 256—257 Deutsch Neu-Guinea.
489. *H. Mollii* Koord. 119 p. 179 Tab. 13 Fig. 7—12 Java.
490. *H. Pernettyae* Pat. 163 p. 125 Java.  
*H. plana* Syd. 219 p. 257 Deutsch Neu-Guinea.  
*H. Sphaeroidea* Syd. 219 p. 256 Deutsch Neu-Guinea.
491. *H. Raciborskii* Zimmerm. 261 p. 875 Fig. 4 Java.
492. *H. scutata* (Cooke) Sacc. 163 p. 125 Java; 175 p. 229 Java; 176 p. 54-55 Taf. XXXVII Fig. 2 Java.
493. *H. Zimmermanniana* Hennings 79 p. 142 Java.
494. *Konradia secunda* Rac. 86 p. 38 Java; 190 (*Konradia bambusina* Rac.) Java.
495. *Lambro insignis* Rac. 190 Java.
496. *Fleischeria javanica* Penz. et Sacc. 175 p. 230 Java; 176 p. 59—60 Taf. XL Fig. 2 Java.
497. *F. sclerotioides* (Hennings) v. Höhnel 88 p. 26 Java.
498. *Oomyces javanicus* v. Höhnel 86 p. 40 Fig. 13 Java.

499. *Cordyceps adpropinguans* (Ces.) 37 (*Torrubia adpropinguans*) p. 14 Sarawak; 86 p. 27 (*Torrubia adpropinguans*) Java.
500. *C. atrobrunnea* Penz. et Sacc. 171 p. 522 Java; 176 p. 56 Taf. XXXVIII Fig. 4 Java.
501. *C. citrea* Penz. et Sacc. 171 p. 523 Java; 176 p. 57 Taf. XXXIX Fig. 2 Java; B.
502. *C. coccinea* Penz. et Sacc. 76 p. (66) 164 Java; 86 p. 30 Java; 171 p. 524 Java; 176 p. 58—59 Taf. XL Fig. 1 Java; B.
503. *C. coccinea* Penz. et Sacc. subsp. *subochracea* Penz. et Sacc. 175 p. 231 Java; 176 p. 59 Java.
504. *C. deflectens* Penz. et Sacc. 171 p. 522—523 Java; 176 p. 57 Taf. XXXIX Fig. 1 Java.
505. *C. depokensis* Koord. 121 Java; B.
506. *C. flavo-brunnescens* Henn. 76 p. (66) 164 Java.
507. *C. Fleischeri* Penz. et Sacc. 175 p. 238 Java; 176 p. 58 Taf. XXXIX Fig. 4 Java.  
*C. gentilis* Ces. 37 p. 14 (*Torrubia gentilis*) Sarawak.
508. *C. interrupta* v. Höhnel 86 p. 29 Fig. 8 Java.
509. *C. javensis* Hennings 79 p. 142 Java.
510. *C. Koningsbergeri* Penz. et Sacc. 171 p. 522 Java; 176 p. 55—56 Taf. XXXVIII Fig. 3 Java; B.
511. *C. lachnopoda* Penz. et Sacc. 171 p. 521 Java; 176 p. 55 Taf. XXXVIII Fig. 1 Java.
512. *C. mitrata* Pat. 166 p. 196 Java.
513. *C. Mölleri* Hennings 86 p. 30 Java.  
*C. myrmecophila* (Ces.) Tul. 37 p. 14 (*Torrubia myrmecophila* Ces.) Sarawak.
514. *C. obtusa* Penz. et Sacc. 76 p. (66) 164 Java. 83 p. 75 Java; 171 p. 523 Java; 176 p. 57—58 Taf. XXXIX Fig. 3 Java.  
*C. ophioglossoides* (Ehrh.) Tul. 37 p. 14 (*Torrubia ophioglossoides*) Sarawak.
515. *C. Ouwensii* v. Höhnel 86 p. 35 Fig. 12 Java.
516. *C. oxycephala* Penz. et Sacc. 171 p. 521 Java; 176 p. 55 Taf. XXXVIII Fig. 2 Java.
517. *C. podocreoides* v. Höhnel 86 p. 34 Fig. 11 Java.
518. *C. rhizoidea* v. Höhnel 86 p. 33 Fig. 10 Java.
519. *C. subochracea* Penz. et Sacc. 86 p. 30 Java.
520. *C. typhulaeformis* Berk. et Cooke 33 p. 241 Java.
521. *C. unilateralis* (Tul.) var. *javanica* v. Höhnel 86 p. 31 Java.
522. *Zimmermanniella trispora* Hennings 79 p. 142 Java.
523. *Balansia Claviceps* Speg. 191 mit Abb. Java; 188 p. 198—200 Java.
524. *B. gigas* Rac. 191 mit Abb. Java.
525. *B. thanatophora* (Lév.) v. Höhnel 91 Java; 128 p. 617 (*Dothidea thanatophora* Lév.) Java.

526. *Ustilaginoidea bogoriensis* Rac. 191 Java.  
 527. *U. virens* (Cooke) Hennings 76 p. 25 Celebes; 190 (*U. Virens* (Cooke) Takahashi) Java; 211 p. 323 Java.  
 528. *Creomelanops xanthocephala* (B. et S.) v. Höhnel 95a p. 144 Java.

Fam. **Dothidiaceae.**

529. *Euryachora Pithecolobii* Rac. 93 p. 48 Java; 190 Java.  
 530. *Oxydothis grisea* Penz. et Sacc. 171 p. 505 Java; 176 p. 36—37 Taf. XXV Fig. 3 Java; B.  
 531. *O. maculosa* Penz. et Sacc. 171 p. 506 Java; 176 p. 37 Taf. XXVI Fig. 1 Java; B.  
 532. *O. nigricans* Penz. et Sacc. 171 p. 505—506 Java; 176 p. 37 Taf. XXV Fig. 4 Java; B.  
 533. *Auerswaldia Arengae* Rac. 190 Java.  
 534. *Microcyclus Koordersii* Henn. 119 p. 183 Abb. 15 Fig. 1—14 Java.  
 535. *Dothidea appendiculata* Mont. et Berk. 129a p. 263 Java; 144 Java.  
 536. *D. appendiculosa* Mont. et Berk. 9 p. 337 Tab. XV A Java.  
 537. *D. Decaisneana* Lév. 128 p. 617 Timor.  
 538. *D. examinans* Berk. et Mont. 9 p. 335 Java; 129a p. 263 Java; 144 Java; 273 Java.  
     *D. hysterioides* Ces. 37 p. 24 Sarawak.  
     *D. membranacea* Ces. 37 p. 24 Sarawak.  
     *D. oceanica* Ces. 37 p. 24 Sarawak.  
     *D. phaselina* (Mont.) Berk. 37 p. 24 Sarawak.  
 539. *D. Sambuci* Fr. 107 p. 14 Java; 142 p. 309 Java.  
 540. *D. Zollingeri* Mont. et Berk. 9 p. 336 Tab. XV B Java; 129a p. 263 Java, Timor; 144 Java; 273 Java.  
 541. *Discodothis Fillicum* v. Höhnel. 87 p. 42 Java.  
 542. *Scirrhia bambusina* Penz. et Sacc. 171 p. 506 Java; 176 p. 37—38 Taf. XXVI Fig. 2 Java; B.  
 543. *Rhopographus Palmarum* v. Höhnel 93 p. 55 Fig. 3 Java.  
 544. *Phyllachora amphidyma* Penz. et Sacc. 76 p. (67) 165 Java; 171 p. 504 Java; 176 p. 36 Taf. XXV Fig. 2 Java; B.  
 545. *P. Andropogonis* (Schwein.) Karst et Har. 76 p. (67) 165 Java.  
 546. *P. coicis* Hennings 190 p. 17 Java; B.  
 547. *P. corallina* v. Höhnel 87 p. 33 Java.  
 548. *P. Cynodontis* (Sacc.) Niessl. 76 p. (67) 165 Java; B.  
 549. *P. Decaisneana* (Lév.) Sacc. 190 p. 17 Java.  
 550. *P. de Vriesei* Koord. 119 p. 181 Abb. 14, 7—14 Java.  
 551. *P. Elettariae* Pat. 76 p. (67) 165 (*Ph. Elettariae* (Berk. et Br.) Pat.) Java; 163 p. 123—124 Java; 190 p. 26 Java.  
 552. *P. Fici-albae* Koord. 119 p. 183 Java.  
 553. *P. Fici-fulvae* Koord. 119 p. 182 Java.

554. *P. Fici-obscurae* Koord. 119 p. 181 Java.  
 555. *P. Ficium* Kessl. 76 p. (67) 165 Java.  
 556. *P. graminis* (Pers.) Fuck. 76 (p. 67) 165 Java; 119 p. 183 Java.  
*P. Kärnbachii* Hennings 71 p. 39 Deutsch Neu-Guinea 74 p. 507  
 Deutsch Neu-Guinea; 214 p. 62 Deutsch Neu-Guinea.  
 557. *P. Laurinearum* Rac. 190 p. 35 Java.  
 558. *P. Lecae* Koord. 119 p. 182 Java.  
 559. *P. Litseae* Koord. 119 p. 181 Abb. 14 Fig. 13—15 Java.  
 560. *P. macrospora* Zimmerm. 265 p. 183 Java.  
 561. *P. marmorata* Rac. 119 p. 183 Java; 190 p. 26 Java.  
 562. *P. minuta* Hennings 79 p. 143 Java.  
 563. *P. Pusaethae* v. Höhnel 93 p. 51 Java.  
 564. *P. Sacchari* Hennings 79 p. 143 Java.  
 565. *P. Sorghi* v. Höhnel 87 p. 32 Java.  
 566. *P. stenospora* (Berk. et Br.) 190 p. 27 Java.  
 567. *P. Thanathophora* (Lév.) Rac. 191 Abb. (*Ophiodonthis thanathophora*) Java  
 568. *P. Thwaitesii* (Berk.) Sacc. 76 p. (67) 165 Java.  
 569. *P. Tjangkorreh* Rac. 190 p. 25 Java.  
*P. ulcerata* Masee 139 p. 177 Br. Neu-Guinea.  
 570. *P. urophylla* v. Höhnel 93 p. 52 Fig. 2 Java.  
 571. *Dothidella Elaeocarpi* Rac. 190 p. 17 Java.  
 572. *Munkiella melastomata* v. Höhnel 88 p. 64 Java.  
 573. *Hyalodothis incrustans* Rac. 116 Java; 190 p. 27 Java; 269  
 p. 16 Java.  
 574. *Telimena Erythrinae* Rac. 92 p. 75 Java; 119 p. 180 Abb. 14  
 1—6 Java; 190 p. 18 Java; 264 p. 803 Java; B.

Fam. **Chaetomiaceae.**

*Chaetomium comatum* Fr. 138 p. 123 Br. Neu-Guinea.

575. *C. Elasticae* Koord, 118 p. 302 Java; 119 p. 185 Abb. 16 Fig. 1—  
 13 Java.  
 576. *C. elatum* Kze. 129 p. 608 Java.

Fam. **Sordariaceae.**

577. *Sordaria botryosa* Penz. et Sacc. 170 p. 395 Java; 176 p. 9—10  
 Taf. VII Fig. 2 Java; B.  
 578. *S. caudata* (Curr.) Sacc. 170 p. 395 Java; 176 p. 9 Taf. VI Fig. 4  
 Java; B.  
*S. caulicola* Ces. 37 p. 23 Sarawak.  
*S. oblectans* Ces. 37 p. 23 Sarawak.  
*S. pachydermatica* Ces. 37 p. 22 Sarawak.  
 579. *S. tjibodiana* Penz. et Sac. 170 p. 395 Java; 176 p. 9 Taf. VII  
 Fig. 1 Java; B.  
*Sporormia minima* Auersw, 37 p. 24 Sarawak.

Fam. **Sphaeriaceae.**

580. *Coleroa Elasticae* Koord. 118 p. 302 Java; 119 p. 186 Abb. 17 Fig. 1—7 Java.
581. *C. Sacchari* v. Breda de Haan 229 Java.
582. *Trichosphaeria affinis* Penz. et Sacc. 170 p. 391 Java; 176 p. 4 Taf. II Fig. 4 Java; B.
583. *T. bambusina* v. Höhnel 86 p. 62 Java.
584. *T. javensis* v. Höhnel 86 p. 61 Java.
585. *T. proxima* Penz. et Sacc. 170 p. 391 Java; 176 p. 4—5 Taf. III Fig. 1 Java; B.  
*T. regulina* (Berk. et Br.) Sacc. 37 p. 21 (*Sphaeria regulina* Berk. et Br.) Sarawak.
586. *Wallrothiella subiculosa* v. Höhnel 93 p. 43 Java.
587. *Loranthomyces sordidulus* (Lév.) v. Höhnel 128 p. 618 (*Dothidea sordidula* Lév.) Java; 144 (*Dothidea sordidula* Lév.) Java; 219 p. 255 Deutsch Neu-Guinea; 273 (*Dothidea sordidula* Lév.) Java.
588. *Neopeckia Bambusae* v. Höhnel 86 p. 55 Java.
589. *N. diffusa* (Schw.) Starb. 170 p. 397 Java; 176 p. 11 Taf. VIII Fig. 4 Java; B.
590. *N. pumila* Penz. et Sacc. 170 p. 396 Java; 176 p. 11 Taf. VIII Fig. 3 Java.
591. *Lasiosphaeria ovina* (Pers.) v. Höhn. 88 Java; 171 p. 509 (*Heteronectria spirillospora* Penz. et Sacc.) Java; 176 p. 40—41 Taf. XXVIII Fig. 2 (*Heteronectria spirillospora* Penz. et Sacc.) Java; B (*Heteronectria spirillospora* Penz. et Sacc.).
592. *Acanthostigma Bambusae* v. Höhnel 86 p. 60 Java.
593. *A. nectrioideum* Penz. et Sacc. 171 p. 530 Java; 176 p. 18—19 Taf. XIII Fig. 4 Java; B.
594. *A. scleracanthoides* Penz. et Sacc. 171 p. 404 Java; 176 p. 19 Java; B.
595. *A. scleracanthoides* Penz. et Sacc. var. *Elettariae* 171 p. 404 Java; 176 p. 19 Taf. XIV Fig. 1 Java.
596. *A. violacea* Rac. 192 Java.
597. *Chaetosphaeria coelestina* v. Höhnel 86 p. 50 Fig. 17 Java.  
*C. meliolicola* Syd. 219 p. 254 Deutsch Neu-Guinea.
598. *C. pusilla* Penz. et Sacc. 170 p. 400 Java; 176 p. 15—16 Taf. XI Fig. 3 Java; B.
599. *C. Silva-nigra* Penz. et Sacc. 170 p. 400 Java; 176 p. 15 Taf. XI Fig. 2 Java.
600. *Herpotricha Myriangii* Rac. 192 Java.
601. *H. Oryzae* v. Breda de Haan. 32 Java.
602. *Bertia fructicola* Hennings 72 p. 233 Celebes. 76 p. 26 Java.
603. *B. moriformis* (Tode) de Not. 107 p. 17 (*Sphaeria moriformis* Tode) Java; 128 p. 617 (*Sphaeria* (*denudata*) *moriformis* Tode var. *globosa*) Java; 142 p. 310 (*Sphaeria* (*denudata*) *moriformis* Tode var.) Java; 170 p. 400 Java; B.



604. *B. novo guinensis* Hennings 71 p. 37 Neu-Guinea; 214 p. 62 Deutsch Neu-Guinea.
605. *B. (Rehmiomyces) oxyspora* (Penz. et Sacc.) v. Höhnel 88 p. 56 Java; 170 p. 402 (*Winteria oxyspora* Penz. et Sacc.) Java; 176 p. 17 Taf. XII Fig. 3 (*Winteria oxyspora* Penz. et Sacc.) Java.
606. *Rinia spectabilis* Penz. et Sacc. 175 p. 225 Java; 176 p. 5—6 Taf. III Fig. 3 Java.
607. *Rosellinia aquila* (Fr.) de Not. 134 p. 951 Java.
608. *R. Beccariana* Ces. 37 p. 22 Sarawak; 170 p. 393 Java; B.
609. *R. (Tassiella) bogoriensis* Hennings et Nyman 76 p. (68) 166 Java.
610. *R. bothrina* Bern. 25 p. 8—10 Java; 158 p. 24 Java.
611. *R. bunodes* (Berk. et Br.) Sacc. 76 p. (68) 166 Taf. V Fig. 11 Java; 158 p. 24 Java; 170 p. 392 Java; 176 p. 7 Taf. IV Fig. 4 Java.
612. *R. (Tassiella) citrino-pulverulenta* Henn. et Nym. 76 p. (68) 166 Taf. V Fig. 12 Java.
613. *R. Corticium* (Schw.) Sacc. 126 p. 617 Java.
614. *R. decipiens* Penz. et Sacc. 170 p. 393 Java, 176 p. 7 Taf. V Fig. 1 Java; B.
615. *R. echinata* Masee 116 Java.
616. *Rosellinia (Amphisphaerella) eucalypticola* Henn. et Nym. 76 p. (68) 166 Java.
617. *R. (Amphisphaerella) formosa* Penz. et Sacc. 170 p. 393 Java; 176 p. 7—8 Taf. V Fig. 3 Java; B.
618. *R. (Amphisphaerella) formosa* Penz. et Sacc. var. *flavazonata* Penz. et Sacc. 170 p. 394 Java; 176 p. 8 Taf. V. Fig. 4 Java; B.  
*R. hypoxylina* Ces. 37 p. 22 Sarawak.  
*R. ignobilis* Ces. 37 p. 22 Sarawak.
619. *R. mammiformis* (Pers.) Ces. et de Not. 37 p. 22 Sarawak; 170 p. 393 Java; B.
620. *R. marginata-clypeata* Penz. et Sacc. B.
621. *R. necatria* Bern. 22 Java.
622. *R. (Amphisphaerella) obtusispora* Penz. et Sacc. 170 p. 394 Java; 176 p. 8 Taf. VI Fig. 1 Java; B.  
*R. spadicea* Ces. 37 p. 22 Sarawak.
623. *Tympanopsis coelosphaerioides* Penz. et Sacc. 170 p. 394 Java; 176 p. 9 Taf. VI Fig. 3 Java; B.  
*Bombardia bertiioides* Ces. 37 p. 21—22 Taf. IV Fig. Sarawak.
624. *B. Pulvis-pyrius* (Penz. et Sacc.) v. Höhnel 88 Java; 170 p. 394 (*Rosellinia (Coniomela) Pulvis-pyrius* Penz. et Sacc.) Java; 176 p. 8 Taf. VI Fig. 2 (*Rosellinia (Coniomela) Pulvis-pyrius* Penz. et Sacc.) Java.
625. *Bombardiella caespitosa* v. Höhnel 88 p. 36 Java.
626. *Lizonia Selaginella* Rac. 192 Java.
627. *L. Smilacis* Rac. 192 Java.

628. *L. Syzygii* Rac. 192 Java.  
 629. *Koordersiella javanica* v. Höhnel 87 p. 22 Java.  
 630. *Zignoella acervata* Penz. et Sacc. 170 p. 403 Java; 176 p. 17 Taf. XII Fig. 4 Java; B.  
 631. *Z. caesalpiniae* Zimmerm. 265 p. 181 Java.  
 632. *Z. eumorpha* Penz. et Sacc. 170 p. 403 Java; 176 p. 18 Taf. XIII Fig. 1 Java; B.  
 633. *Z. (Zignoina) interspersa* Penz. et Sacc. 170 p. 403 Java; 176 p. 18 Taf. XIII Fig. 3 Java; B.  
 634. *Z. lichenoidea* v. Höhnel 86 p. 57 Java.  
 635. *Z. omphalostoma* Penz. et Sacc. 170 p. 403 Java; 176 p. 18 Taf. XIII Fig. 2 Java; B.  
 636. *Z. palmicola* (Fr.) 43 p. 156 (*Conisphaeria palmicola* Fr.) Java.  
*Z. lingens* (Ces.) Sacc. 37 p. 21 (*Sphaeria lingens* Ces.) Sarawak.  
 637. *Hormosperma pusillum* Penz. et Sacc. 170 p. 402 Java; 176 p. 17 Taf. XII Fig. 2 Java; B.  
 638. *Melanomma anceps* v. Höhnel 86 p. 56 Java.  
 639. *M. epiphytica* Rac. 192 Java.  
 640. *M. leptosphaerioides* Penz. et Sacc. 170 p. 401 Java; 176 p. 16 Taf. XI Fig. 4 Java; B.  
 641. *M. tornatum* Sacc. en Paol. 170 p. 401 Java; B.

**Fam. Ceratostomataceae.**

642. *Ceratostomella Bambusina* v. Höhnel 86 p. 63 Java.  
 643. *C. polyrrhynchia* Penz. et Sacc. 170 p. 408 Java; 176 p. 23 Taf. XVI Fig. 4 Java; B.  
 644. *Ceratostoma javanica* Henn. et Nym. 76 p. (67) 165 Java.  
 645. *C. piliferum* (Fr.) Fuck. 128 p. 617 (*Sphaeria (Ceratostoma) pilifera* Fr.) Java.  
 646. *Lentomita patellata* (Penz. et Sacc.) v. Höhnel 88 p. 37 Java; 170 p. 398—399 (*Melanopsamma patellata* Penz. et Sacc.) Java; 176 p. 13 Taf. X Fig. 2 (*Melanopsamma patellata* Penz. et Sacc.) Java; B (*Melanopsamma patellata* Penz. et Sacc.)  
 647. *Ophioceras Bambusae* v. Höhnel 86 p. 63 Java.  
 648. *O. dolichostomum* (Berk. et Curt.) Sacc. 170 p. 409 Java; 176 p. 24 Taf. XVII Fig. 3 Java; B  
 649. *O. Hystrix* (Ces.) Sacc. subsp. *tjibodense* Penz. et Sacc. 170 p. 402 Java; 176 p. 24—25 Taf. XVII Fig. 4 Java; B.  
 650. *O. majusculum* Penz. et Sacc. 170 p. 409 Java; 176 p. 25 Taf. XVIII Fig. 1 Java; B.  
 651. *Bactrosphaeria asterostoma* Penz. et Sacc. 76 p. (67) 165 Taf. V Fig. 10 Java; 170 p. 407—408 Java; 176 p. 29 Taf. XVI Java; B.

Fam. **Cucurbitariaceae.**

652. *Nitschkia javanica* Henn. et Nym. 76 p. (69) 167 Java.  
 653. *Eriosphaeria ambigua* v. Höhnel 89 p. 36 Java.  
 654. *E. euchaeta* (Penz. et Sacc.) v. Höhnel 89 p. 36 Java; 175 p. 227  
 (*Venturia euchaeta* Penz. et Sacc.) Java; 176 p. 14—15 Taf. XI  
 Fig. 1 (*Venturia euchaeta* Penz. et Sacc.) Java; B. (*Venturia euchaeta*  
 Penz. et Sacc.)  
 655. *Valetoniella crucipila* v. Höhnel 89 p. 40 Java; 232 p. 12—13  
 Java,  
*Gibbera borneensis* Ces. 37 p. 21 Taf. IV Fig. Sarawak.  
 656. *Gibberidea Zingiberacearum* Rac. 192 Java.  
 657. *Teichospora xenochaeta* Penz. et Sacc. 175 p. 227 Java.  
 658. *Catharinia tetraspora* v. Höhnel 89 p. 44 Java.  
*Cucurbitaria insularis* Ces. 37 p. 20 Taf. III Fig. Sarawak.  
 659. *Astrocystis mirabilis* Berk. et Br. 170 p. 392 Java; 176 p. 6—7  
 Taf. IV Fig. 3 Java; B.

Fam. **Coryneliaceae.**

660. *Corynelia clavata* (L.) Sacc. 76 p. 27 Java.

Fam. **Amphisphaeriaceae.**

661. *Amphisphaeria Amomi* Henn. et Nym. 76 p. (68) 166 Java.  
 662. *A. atro-grana* (C. et E.) Sacc. 170 p. 397 Java; B.  
*A. Beccariana* Ces. 37 p. 21 Taf. III Fig. Sarawak.  
 663. *A. calicarpa* Penz. et Sacc. 170 p. 397 Java; 176 p. 11—12  
 Taf. IX Fig. 1 Java; B.  
 664. *A. edamensis* Henn. et Nym. 76 p. (68) 166 Java.  
*A. enteroxantha* Ces. 37 p. 21 Taf. III Fig. Sarawak.  
*Ceratosphaeria Sarawacensis* (Ces.) Sacc. 37 p. 20 Taf. III Fig.  
 (*Sphaeria Sarawacensis* Ces.) Sarawak.  
 665. *Boerlagella laxa* Penz. et Sacc. 170 p. 405 Java; 176 p. 20  
 Taf. XIV Fig. 3 Java; B.  
 666. *B. velutina* Penz. et Sacc. 170 p. 404—405 Java; 176 p. 19—20  
 Taf. XIV Fig. 2 Java; B.  
*Julella intermedia* Syd. 219 p. 254—255 Deutsch Neu-Guinea.

Fam. **Lophiostomataceae.**

667. *Lophiella Bambusae* Hennings 79 p. 143 Java.  
 668. *Lophiosphaera schizostoma* (Mont.) Lév. 171 p. 524 Java;  
 176 p. 60 Java; B.  
*L. macrostomella* (Ces.) Sacc. 37 p. 20 Taf. III (*Sphaeria macrostomella*  
 Ces.) Sarawak.  
 669. *Rostrella coffeae* Zimm. 258 p. 24—62 Fig. 3—21 Java.  
 670. *Brigantiella pallida* Hennings 79 p. 143—144 Java.  
 671. *Lophionema Bambusae* v. Höhnel 86 p. 49 Fig. 16 Java.

Fam. **Mycosphaerellaceae.**

672. *Neozimmermannia* *Elasticae* Koord. 118 Java.  
 673. *Ascospora* *Coffeae* v. Faber 49 p. 553 Java.  
 673a. *A. ficicola* Lév. 129a, p. 277 Java.  
 674. *A. ophioryzae* Rac. 192 Java.  
 675. *Guignardia javanica* Koord. 119 p. 188 Abb. 16 III 1—7 Java.  
 676. *G. Musae* Rac. 192 Java.  
 677. *G. (Laestadia) Theae* (Rac.) Bern. 17 Java; 168 p. 47 Java; 190 (*Laestadia Theae* Rac.) Java; 264 p. 51 (*Laestadia Theae* Rac.) Java; B. (*Laestadia Theae* Rac.).  
 678. *Laestadia Caesalpiniae* Pat. 163 p. 121 Java.  
 679. *L. minuscula* (Lév.) Sacc. 129a p. 260 (*Sphaeria (foliicola) minuscula* Lév.) Java.  
 680. *L. veneta* Sacc. et Speg. 170 p. 391 Java; B.  
 681. *Stigmatea Hydrocotyles* Rac. 190 Java.  
 682. *S. Pongamiae* Rac. 190 Java.  
 683. *Mycosphaerella congregata* (Lév.) Sacc. 129a p. 261 (*Sphaeria (epiphylla) congregata* Lév.) Java.  
 684. *M. creberrima* (Penz. et Sacc.) 170 p. 397—398 (*Sphaerella creberrima* Penz. et Sacc.) Java; 176 p. 12 Taf. IX Fig. 3 (*Sphaerella creberrima* Penz. et Sacc.) Java; B. (*Sphaerella creberrima* Penz. et Sacc.).  
 685. *M. Elasticae* Koord. 118 p. 303 Java; 119 p. 189 Abb. 16 II 1—7 Java.  
 686. *M. Erythrinae* Koord. 119 p. 189 Abb. 15 Fig. 7—14 Java.  
 687. *M. longispora* (Penz. et Sacc.) 170 p. 397 (*Sphaerella longispora* Penz. et Sacc.) Java; 176 p. 12 Taf. IX Fig. 2 (*Sphaerella longispora* Penz. et Sacc.) Java; B. (*Sphaerella longispora* Penz. et Sacc.).  
 688. *M. Sacchari* (Wakker) 230 (*Sphaerella Sacchari* Wakker) Java.

Fam. **Pleosporaceae.**

689. *Paidania Metastomacearum* Rac. 192 Java.  
 690. *Physalospora Arecae* v. Höhnelt 93 p. 45 Java.  
 691. *P. ceratodontis* Henn. et Nym. 76 p. (69) 167 Java.  
 692. *P. Elasticae* Koord. 118 p. 303 Java; 119 p. 191 Abb. 18, I, 1—4 Java.  
 693. *P. fallaciosa* Sacc. 265 p. 282 Java.  
 694. *P. Hibisci* Rac. 119 p. 190 Java; 190 Java; B.  
 695. *P. Morindae* Koord. 119 p. 190 Abb. 18 II 1—5 Java.  
 696. *P. Symploci* Rac. 190 Java.  
 697. *P. Vanillae* Zimm. 91 p. 183 Java; 266 p. 479 Fig. 8 Java.  
 698. *Apiospora camptospora* Penz. et Sacc. 170 p. 398 Java; 176 p. 12 Taf. IX Fig. 4 Java; B.  
*Venturia calospora* (Speg.) v. Höhnelt 219 p. 254 Deutsch Neu-Guinea.  
 699. *V. elastica* Pass. 119 p. 187 Java.

700. *Didymella Cocconiae* Rac. 192 Java.  
701. *D. maculosa* Penz. et Sacc. 170 p. 398 Java; 176 p. 13 Taf. X Fig. 1 Java; B.  
702. *D. Pandani* v. Höhnelt 95a p. 167 Java.  
703. *Didymosphaeria fuispora* Penz. et Sacc. 170 p. 395—396 Java; 176 p. 10 Taf. VII Fig. 3 Java; B.  
704. *D. impar* Penz. et Sacc. 170 p. 396 Java; 176 p. 10 Taf. VIII Fig. 1 Java; B.  
705. *D. minutella* Penz. et Sacc. 170 p. 396 Java; 176 p. 10 Taf. VII Fig. 4. Java; B.  
706. *D. polysticta* (Berk. et Curt.) Sacc. 170 p. 395 Java.  
707. *D. scabrispora* v. Höhnelt 89 p. 41 Java.  
708. *D. striatula* Penz. et Sacc. 175 p. 227 Java; 176 p. 10—11 Taf. VIII Fig. 2 Java; B.  
*D. tetraspora* Masee 140 p. 124 Sarawak.  
709. *Asterosphaeriella bambusella* v. Höhnelt 95a p. 168 Java.  
710. *Metasphaeria javensis* v. Höhnelt 86 p. 54 Java.  
711. *M. sundapsi* Rac. 192 Java.  
712. *M. tetrasperma* Koord. 118 p. 303 Java; 119 p. 192 Abb. 17 II Java.  
713. *Pseudotthia Vaccinii* Henn. et Nym. 76 p. (69) 167 Taf. V Fig. 13 Java; 87 p. 19 Java.  
714. *Leptosphaeria arundinacea* (Sow.) Sacc. 37 p. 20 (*Sphaeria arundinacea* Sow.) Sarawak; 128 p. 617 (*Sphaeria (seriata) arundinacea* Sow.) Java; 144 (*Sphaeria arundinacea* Sow.) Java; 273 (*Sphaeria arundinacea* Sow.) Java.  
715. *L. Oryzae* v. Breda de Haan 32 Java.  
716. *L. Sacchari* v. Breda de Haan 229 Java; 239 p. 5. 6. Pl. II Fig. 2 Pl. III Fig. 2 Java.  
*L. scabiens* (Ces.) Sacc. 37 p. 20 (*Sphaeria scabiens* Ces.) Sarawak.  
717. *L. (Asterosphaeria) Trochus* (Penz. et Sacc.) v. Höhnelt 86 p. 53—54 Java; 170 p. 401 (*Melanomma Trochus* Penz. et Sacc.) Java; 176 p. 16 Taf. XII Fig. 1 (*Melanomma Trochus* Penz. et Sacc.) Java; B. (*Melanomma Trochus* Penz. et Sacc.)  
718. *Ophiochaete Raciborskii* Penz. et Sacc. 170 p. 406 Java; 176 p. 21—22 Taf. XV Fig. 4 Java; B.  
719. *Ophiobolus javanicus* Penz. et Sacc. 170 p. 406 Java; 176 p. 21 Taf. XV Fig. 3 Java; B.  
720. *Ceuthocarpon depokense* Penz. et Sacc. 170 p. 405 Java; 176 p. 20—21 Taf. XV Fig. 1 Java; B.  
721. *C. tjibodense* Penz. et Sacc. 170 p. 405 Java; 176 p. 20 Taf. XIV Fig. 4 Java; B.  
722. *Leptospora gregaria* Penz. et Sacc. 170 p. 407 Java; 176 p. 22 Taf. XVI Fig. 1 Java B.  
723. *L. sparsa* Penz. et Sacc. 170 p. 407 Java; 176 p. 22 Taf. XVI Fig. 2 Java; B.

724. *Acerbia calmigena* Penz. et Sacc. 170 p. 405—406 Java; 176 p. 21 Taf. XV Fig. 2 Java; B.  
 725. *Pleospora herbarum* (Pers.) Rab. 107 p. 15—16 Java; 142 p. 36) Java.  
 726. *Gibellina concentrica* Rac. 190 Java.

Fam. **Massariaceae.**

727. *Massariopsis substriata* v. Höhnel 95a p. 170 Java.  
 728. *Massariella javanica* (Penz. et Sacc.) v. Höhnel. 95a p. 169 Java; 170 p. 339 (*Pteridiospora javanica* Penz. et Sacc.) Java; 176 p. 13—14 Taf. X Fig. 3 (*Pteridiospora javanica* Penz. et Sacc.) Java; B. (*Pteridiospora javanica* Penz. et Sacc.)

Fam. **Clypeosphaeriaceae.**

739. *Trabutia Stephaniae* Rac. 180 Java.  
 730. *Anthostomella Arthropylli* Koord. 119 p. 195 Java.  
 731. *A. bambusaecola* v. Höhnel 95a p. 181 Java.  
 732. *A. Elasticae* Koord. 118 p. 304 Java; 119 p. 195 Abb. 19 II Java.  
 733. *A. grandispora* Penz. et Sacc. 170 p. 392 Java; 176 p. 6 Taf. IV Fig. 2 Java; B.  
 734. *A. (Atrocystis) mirabilis* (Berk. et Br.) v. Höhnel 86 p. 54 Java.  
 735. *A. obtusispora* Penz. et Sacc. 170 p. 392 Java; 176 p. 6 Taf. IV Fig. 1 Java; B.  
 736. *A. Pandani* (Rabenh.) Sacc. 170 p. 391 Java; 176 p. 6 Taf. III Fig. 4 Java; B.  
 737. *A. Rottlerae* Rac. 190 Java.  
 738. *Linospora capillaris* Penz. et Sacc. 170 p. 409 Java; 176 p. 24 Taf. XVII Fig. 2 Java; B.  
 739. *L. Elasticae* Koord. 118 p. 304 Java; 119 p. 193 Abb. 20 Fig. 1—15 Java.

Fam. **Diaporthaceae.**

740. *Gnomonia setiformis* (Pers.) Sacc. 129a p. 262 (*Sphaeria* (epiphylla) *setiformis* Pers.) Java.  
 741. *Gnomoniella Catappae* Koord. 119 p. 192 Abb. 19 I 1-5 Java.  
 742. *Phomatospora Elasticae* Zimm. 118 Java; 269 p. 15 Java.  
 743. *Diaportha* (*Tetrastaga*) *javanica* Penz. et Sacc. 171 p. 503 Java; 176 p. 35 Taf. XXIV Fig. 4 Java.  
 744. *D. (Chorostate) libera* v. Höhnel 86 p. 66 Java.

Fam. **Coronophoraceae.**

745. *Coronophorella chaetomioides* (Penz. et Sacc.) v. Höhnel 89 p. 45 Java; 170 p. 390-391 (*Enchnoa chaetomioides* Penz. et Sacc.) Java; 176 p. 4 Taf. II Fig. 3 (*Enchnoa chaetomioides* Penz. et Sacc.) Java; B. (*Enchnoa chaetomioides* Penz. et Sacc.)

Fam. **Valsaceae.**

746. *Anthostoma marginato-clypeata* (Penz. et Sacc.) v. Höhnel 89 Java; 170 p. 393 (*Rosellinia* (*Amphisphaerella*) *marginato-clypeata* Penz. et Sacc.) Java; 176 p. 7 Taf. V Fig. 2 (*Rosellinia* (*Amphisphaerella*) *marginato-clypeata* Penz. et Sacc.) Java.
747. *A. (Sphaeranthostoma) sphaerospora* v. Höhnel 94 p. 46 Taf. 13 Fig. Java.
748. *A. (Euanthostoma) tjibodense* Penz. et Sacc. 171 p. 502 Java; 176 p. 33 Taf. XXIII Fig. 4 Java; B.
749. *A. (Fuckelia) valsarioides* Penz. et Sacc. 171 p. 502 Java; 176 p. 34 Taf. XXIV Fig. 2 Java; B.
750. *A. (Fuckelia) Verrucula* Penz. et Sacc. 171 p. 502 Java; 176 p. 33-34 Taf. XXIV Fig. 1 Java; B.
751. *Valsa Fusani* Henn. et Nym. 76 p. (69) 167 Java.
752. *Eutypa aemula* Penz. et Sacc. 171 p. 500 Java; B.
753. *E. bambusina* Penz. et Sacc. 76 p. (70) 168 Java; 171 p. 501 Java; 176 p. 32 Taf. XXIII Fig. 1 Java; B.
754. *E. heteracantha* Sacc. 171 p. 501 Java; B.
755. *Melchioria leucomelaena* Penz. et Sacc. 76 p. 26 Java; 89 p. 27 Java; 170 p. 399—400 Java; 176 p. 14 Taf. X Fig. 4 Java; B.
756. *Rynchosstoma rhytidosporum* Penz. et Sacc. 170 p. 408 Java; 176 p. 24 Taf. XVII Fig. 1 Java; B.
757. *Thyridaria tarda* Bancroft 206 p. 23 Java.

Fam. **Melanconidaceae.**

758. *Valsaria massarioides* Penz. et Sacc. 171 p. 503 Java; 176 p. 34 Taf. XXIV Fig. 3 Java; B.

Fam. **Diatrypaceae.**

759. *Calosphaeria Cinchonae* Zimm. 197 p. 39 Fig. 21a—b Java.
760. *Diatrype parvula* Penz. et Sacc. 171 p. 501 Java; 176 p. 33 Taf. XXIII Fig. 3 Java; B.
761. *D. (Pachytrype) princeps* Penz. et Sacc. 171 p. 501 Java; 176 p. 32—33 Taf. XXIII Fig. 2 Java; B.

Fam. **Melogrammataceae.**

762. *Botryosphaeria inflata* Cooke et Masee 95a p. 143 Java.
763. *B. (?) Nephrodii* v. Höhnel 94 p. 47 Java.
764. *B. phyllachoroidea* Penz. et Sacc. 181 p. 530 Java; 176 p. 5 Taf. III Fig. 2 Java; B.
765. *B. Uncariae* Rac. 192 Java.
766. *B. tjampeana* Rac. 192 Java.
767. *Endothia gyrosa* (Schw.) Fuck 171 p. 503 Java; B.
768. *Winterella eutypoides* Penz. et Sacc. 171 p. 504 Java; 176 p. 35 Taf. XXV Fig. 1 Java; B.
769. *Myrmaecium Milletiae* Rac. 192 Java.

Fam. **Xylariaceae.**

770. *Nummularia minutula* Penz. et Sacc. 171 p. 495 Java; 176 p. 28 Taf. XX Fig. 2 Java; B.
771. *N. tinctor* (Berk.) Ellis 171 p. 494 Java; B.
772. *N. uniapiculata* Penz. et Sacc. 171 p. 494—495 Java; 176 p. 28 Taf. XX Fig. 1 Java; B.
773. *Bolinia tubulina* (Alb. et Schw.) Sacc. 128 p. 616 (*Sphaeria* (glebosa) *tubulina* Alb. et Schw.) Java.
774. *Ustulina vulgaris* Tul. 76 p. (71) 169 Java.
775. *U. zonata* (Lév.) Sacc. 25 p. 8 p. 10 Java; 86 p. 69 Java; 128 p. 616 (*Sphaeria zonata* Lév.) Java; 158 p. 22—23 Java; 171 p. 493—494 Java.
- Hypoxylon approximans* Ces. 37 p. 18 Taf. III Sarawak.
776. *H. annulatum* (Schw.) Mont. 76 p. (70) 168 Java; 171 p. 492 Java; B.
777. *H. anthracoderma* Speg. 171 p. 491 Java.  
*H. anthracodes* Mont. 37 p. 19 Sarawak.
778. *H. Archeri* Berk. 171 p. 492 Java; B.
779. *H. atropurpurea* Fr. 107 p. 18 (*Sphaeria atropurpurea* Fr.) Java; 142 p. 310 (*Sphaeria atropurpurea* Fr.) Java.  
*H. Avellana* Ces. 37 p. 18 Taf. III Sarawak.
780. *H. bifrons* de Not. 171 p. 493 Java; B.
781. *H. bogoriense* v. Höhnelt 86 p. 67 Java.  
*H. coelatum* (Fr.) 37 p. 19 Sarawak.  
*H. coenopus* (Fr.) Ces. 37 p. 18 Sarawak.
782. *H. cohaerens* (Pers.) 107 p. 19 (*Sphaeria cohaerens* Pers.) Java; 142 p. 310 (*Sphaeria Cohaerens* Pers.) Java.  
*H. cohaerens* (Pers.) var. *tenuior* Ces. 37 p. 18 Sarawak.  
*H. comedens* Ces. 37 p. 19 Sarawak.
- 782a. *H. confluens* Tode 43 p. 56 Java.  
*H. deustum* Fr. 37 p. 18 Sarawak.
383. *H. discophorum* Penz. et Sacc. 171 p. 492 Java; 176 p. 26 Taf. XVIII Fig. 4 Java; B.  
*H. fragariae* Ces. 37 p. 18 Taf. III Sarawak.
784. *H. fuscum* (Pers.) Fr. 76 p. (70) 168 Java.  
*H. (?) gangraena* Ces. 37 p. 19 Sarawak.
785. *H. gigaspermum* Hennings 76 p. (70) 168 Java; 86 p. 68 Java.
786. *H. gilva* (Jungh.) Sacc. 107 p. 20 (*Sphaeria gilva* Jungh.) Java; 142 p. 310 (*Sphaeria gilva* Jungh.) Java.
787. *H. Heinricherii* Bres. 33 p. 241 Java.
788. *H. incana* Pers. 128 p. 615 (*Sphaeria incana* P.) Java.  
*H. macrocenangium* Ces. 37 p. 19 Sarawak.
789. *H. marginatum* (Schwein.) Berk. 37 p. 17 Sarawak; 76 p. (70) 168 Java.



790. *H. microcarpum* Penz. et Sacc. 171 p. 492—493 Java; 176 p. 26 Taf. XIX Fig. 1 Java; B.  
*H. micropus* Ces. 37 p. 18 Taf. III Sarawak.
791. *H. microsorum* Penz. et Sacc. 175 p. 225 Java; 176 p. 26—27 Taf. XIX Fig. 2 Java.  
*H. microsporum* Ces. 37 p. 17 Sarawak.
792. *H. microstroma* Penz. et Sacc. 171 p. 491 Java; 176 p. 25—26 Taf. XVIII Fig. 3 Java; B.
793. *H. Oedipus* 142 p. 319 (*Sphaeria* (*Poronia*) *incrassata* Jungh.) Java.  
*H. paucillum* Ces. 37 p. 18 Sarawak.  
*H. pavimentosum* Ces. 37 p. 18 Sarawak.
794. *H. peltata* (Jungh.) Sacc. 107 p. 20 (*Sphaeria peltata* Jungh.) Java; 142 p. 310 (*Sphaeria* (*Pulvinata*) *peltata* Jungh.) Java.
795. *H. perforatum* (Schw.) Sacc. 171 p. 493 Java; B.
796. *H. pistillare* Henn. et Nym. 76 p (71) 169 Java.  
*H. pithodes* Berk. 37 p. 19 Sarawak.
797. *H. polymorphum* Ehr. 10 p. 164 Borneo.
798. *H. polyspermum* Mont. 171 p. 492 Java; B.  
*H. Pseudo-tubulina* Ces. 37 p. 19 Sarawak.
799. *H. rubellum* Penz. et Sacc. 171 p. 491 Java; 176 p. 25 Taf. XVIII Fig. 2 Java; B.
800. *H. rubiginosa* (Pers.) Fr. 76 p. (70) 168 Java; 107 p. 19 (*Sphaeria rubiginosa* Pers.) Java; 142 p. 310 (*Sphaeria* (*connata*) *rubiginosa* Pers.) Java; B.  
*H. serpens* Fr. 37 p. 18 Sarawak.  
*H. stigmoideum* Ces. 37 p. 17 Sarawak.
801. *H. subannulatum* Henn. et Nym. 76 p (70) 168 Java.  
*H. tormentosum* Ces. 37 p. 19 Sarawak.  
*H. udum* Fr. 37 p. 17 Sarawak.
802. *H. undosum* (Lév.) Sacc. 128 p. 616 (*Sphaeria* (*pulvinata*) *undosum* Lév.) Java.
803. *H. vividum* Berk. et Br. 221 Timor.
804. *Daldinea concentrica* (Bolt.) Ces. et de Not. 10 p. 164 (*Hypoxylon concentricum*) Borneo; 107 p. 20 (*Sphaeria concentrica* Pers.) Java; 142 p. 310 (*Sphaeria* (*Pulvinata*) *concentrica* Bolt.) Java; 221 Timor; 273 (*Sphaeria concentrica* Tode) Java; 176a p. 180 (*Sphaeria concentrica*) Rawak; 70 p. 225 Java; 76 p. (71) 169 Java; 163 p. 121 Java; 171 p. 494 Java; B.
805. *D. Warburgii* Henn. 76 p. 27 Celebes.
- 805a. *D. vernicosa* (Schw.) 163 p. 121 Java.
806. *Kretzschmaria gomphoidea* Penz. et Sacc. 171 p. 493 Java; 176 p. 27 Taf. XIX Fig. 3 Java; B.  
*K. novo-guineensis* Hennings 68 p. 7 Deutsch Neu-Guinea; 71 p. 38 Deutsch Neu-Guinea; 214 p. 63 Deutsch Neu-Guinea; 219 p. 255 Deutsch Neu-Guinea.

- Xylaria acicula* Ces. 37 p. 15 Sarawak.
807. *X. allantoidea* Berk. 37 p. 16 Sarawak; 40 p. 118 Englisch Neu-Guinea; 76 p. (71) 169 Java; B.
808. *X. aristata* Mont. 37 p. 15 Sarawak; 171 p. 500 Java; B.
809. *X. axifera* Mont. 37 p. 15 Sarawak; 171 p. 499 Java; B.  
*X. caespitulosus* Ces. 37 p. 15 Sarawak  
*X. calocephala* Syd. 219 p. 255 Fig. IF Deutsch Neu-Guinea.
810. *X. carpopphila* (Pers.) Fr. 70 p. 224 Deutsch Neu-Guinea; 71 p. 38 Deutsch Neu-Guinea; 171 p. 499—500 Java; 214 p. 63 Deutsch Neu-Guinea; B.
811. *X. castorea* Berk. 134 p. 951 Java.  
*X. complanata* Ces. 37 p. 16 Sarawak.
812. *X. compuncta* (Jungh.) Berk. 170 p. 21 Fig. 11 (*Sphaeria compuncta* Jungh.) Java; 142 p. 310 (*Sphaeria* (*Pulvinata*) *compuncta* Jungh.) Java.  
*X. corniformis* Fr. 37 p. 17 Sarawak.
813. *X. curpressiformis* (Mich.) Becc. 37 p. 17 Sarawak; 171 p. 498 Java; B.  
*X. dealbata* Berk. et Curt. 40 p. 118 Englisch Neu-Guinea.
814. *X. diceras* Lév. 171 p. 496 Java; B.
815. *X. dichotoma* Lév. 37 p. 17 (*Xylaria dichotoma* Kunze) Sarawak; 171 p. 500 Java; B.
816. *X. digitata* (L.) Grev. 76 p. (71) 169 Java; 273 (*Sphaeria digitata* Ehr.) Java.
817. *X. digitata* (L.) Grev. var. *dubia* Jungh. 107 p. 23 (*Sphaeria digitata* Ehrb. var. *dubia* Jungh.) Java.
818. *X. digitata* (L.) Grev. var. *torulosa* Jungh. 107 p. 22 (*Sphaeria digitata* Ehrb. var. *torulosa* Jungh.) Java.
819. *X. echinata* (Lév.) Fr. 128 p. 615 (*Sphaeria echinata* Lév.) Java.
820. *X. exaltata* Berk. et Br. 221 Timor.  
*X. fissilis* Ces. 37 p. 16 Sarawak.
821. *X. fistulosa* (Lév.) Fr. 128 p. 615 (*Sphaeria fistulosa* Lév.) Java.
822. *X. furcata* Fr. 85 p. 10 Java; 128 p. 616 (*Sphaeria dichotoma* Lév.) Java.
823. *X. Gardneri* Berk. 163 p. 121 Java; B.
824. *X. gigantea* (Zipp.) Lév. 33 p. 240 Java; 37 p. 16 (*Xylaria gigantea* (Zipp.) Ces.) Sarawak; 128 p. 614 (*Sphaeria gigantea* Zipp. und *Sphaeria tabacina* Lév.) Java; 171 p. 495 Java; B.
825. *X. globosa* (Sp. et Fr.) Mont. 171 p. 497 Java; B.
826. *X. globosa* (Sp. et Fr.) Mont. var. *minor* 171 p. 497 Java.
827. *X. Gomphus* Fr. 128 p. 615 (*Sphaeria Gomphus* Fr.) Java.
828. *X. gracillima* Fr. 128 p. 615 (*Sphaeria gracillima* Fr.) Java; 144 (*Sphaeria gracillima* Fr.) Java; 273 (*Sphaeria gracillima* Fr.) Java.
829. *X. gracilis* Kl. 142 p. 310 (*Sphaeria digitata* Fr.) Java.  
*X. Guepini* (Fr.) Ces. 37 p. 17 Sarawak.

830. *X. haemorrhordalis* Berk. et Br. 171 p. 498 Java; 176 p. 30 Java; B.
831. *X. heloidea* Penz. et Sacc. 171 p. 498 Java; 176 p. 30 Taf. XXI Fig. 3 Java; B.
832. *X. holobapha* Berk. 171 p. 495—496 Java; 176 p. 28—29 Taf. XX Fig. 3 Java; B.
833. *X. humilis* Penz. et Sacc. 171 p. 497—498 Java; 176 p. 29 Taf. XXI Fig. 2 Java; B.
834. *X. hyperythra* Mont. 171 p. 496 Java; B.
835. *X. Hypoxylon* (L.) Grev. 76 p. (71) 169 Java; 107 p. 22 (*Sphaeria Hypoxylon* L.) Java; 109 p. 388 (*Sphaeria Hypoxylon*) Java; 142 p. 310 (*Sphaeria Hypoxylon* Fr.) Java; 273 (*Sphaeria Hypoxylon* Ehrb.) Java.  
*X. Hypoxylon* (L.) Grev. var. *mucronata* Berk. 37 p. 16 Sarawak.  
*X. intermedia* Ces. 37 p. 16 Sarawak.
836. *X. involuta* (Klotzsch) Sacc. 40 p. 118 Englisch Neu-Guinea; 76 p. (71) 169 Java; 171 p. 495 Java; B.
837. *X. janthino-velutina* (Mont.) 128 p. 616 (*Sphaeria janthino-velutina* Mont.) Java; 144 (*Sphaeria janthino-velutina* Mont.) Java; 273 (*Sphaeria janthino-velutina* Mont.) Java.
838. *X. Kegeliana* Lév. 171 p. 499 Java; B.
839. *X. leucosticta* Penz. et Sacc. 171 p. 496 Java; 176 p. 29 Taf. XXI Fig. 1 Java.
840. *X. Lingua* (Lév.) Fr. 70 p. 224 Java; 76 p. 27 und p. (71) 169 Java; 128 p. 614 (*Sphaeria Lingua* Lév. Java; 144 (*Sphaeria Lingua* Lév.) Java; 202 p. 297 Tab. V Fig. 5 Java; 273 (*Sphaeria Lingua* Lév.) Java.  
*X. massula* Ces. 37 p. 15 Taf. III Sarawak.  
*X. mauritiensis* Hennings 219 p. 255 Deutsch Neu-Guinea.  
*X. melanaxis* Ces. 37 p. 16 Sarawak.
841. *X. microceras* (Mont.) Berk. 128 p. 615 (*Sphaeria microceras* Mont.) Java.
842. *X. mucronata* (Schw.) Sacc. 171 p. 499 Java; B.
843. *X. multifida* (Kze.) Cooke 128 p. 616 (*Sphaeria multifida* Kze.) Java.
844. *X. multiplex* (Kze. et Fr.) Berk. et Curt. 273 (*Sphaeria multiplex* Kze.) Java.
845. *X. nigripes* Klotzsch. 76 p. (71) 169 Java; 85 p. 10 Java; 171 p. 497 Java; 202 p. 299 Taf. VI Fig. 8 Java; B.  
*X. novo-guineensis* Rehm. 70 p. 224 Deutsch Neu-Guinea; 71 p. 38 Deutsch Neu-Guinea; 76 p. 27 Neu-Guinea; 202 p. 298 Taf. V Fig. 6 Neu-Guinea; 214 p. 63 Deutsch Neu-Guinea.
846. *X. oocephala* Penz. et Sacc. 171 p. 500 Java; 176 p. 30—31 Taf. XXII Fig. 1 Java; B.  
*X. phyllophyla* Ces. 37 p. 15 Sarawak.

847. *X. pilaeformis* Berk. et Curt. 171 p. 497 Java; B.  
*X. plebeia* Ces. 37 p. 16 Sarawak; 221 Timor.
848. *X. polymorpha* (Pers.) Grev. 37 p. 16 Sarawak; 76 p. 27 Celebes,  
 p. (71) 169 Java; 107 p. 23 (*Sphaeria polymorpha* Pers.) Java; 142  
 p. 310 (*Sphaeria polymorpha* Fr.) Java; 144 (*Sphaeria polymorpha*  
 Fr.) Java; 163 p. 121 Java; 273 (*Sphaeria polymorpha* Fr.) Java.
849. *X. polysticha* Penz. et Sacc. 171 p. 498—499 Java; 176 p. 30  
 Taf. XXI Fig. 4 Java; B.
850. *X. retipes* (Lév.) Fr. 129a p. 257 (*Sphaeria retipes* Lév.) Java; 144  
 (*Sphaeria retipes* Lév.) Java; 273 (*Sphaeria retipes* Lév.) Java.  
*X. rhizocola* Mont. 37 p. 16 Sarawak.  
*X. Rhizomorpha* Mont. 37 p. 15 Sarawak.  
*X. Schweinitzii* Berk. et Curt. 221 Timor.
851. *X. scopiformis* Mont. 74 p. 508 Neu-Guinea; 76 p. (71) 169  
 Java; 138 p. 123 Englisch Neu-Guinea; 163 p. 121 Java; 171  
 p. 497 Java; 214 p. 64 Deutsch Neu-Guinea; 273 (*Sphaeria scopi-*  
*formis*) Java; B.
852. *Xylaria scruposa* (Fr.) Berk. 128 p. 615 (*Sphaeria scruposa* Fr.)  
 Java.
853. *X. subterranea* (Schw.) Sacc. 171 p. 499 Java; B.
854. *X. tenuissima* (Zipp.) Fr. 128 p. 615 (*Sphaeria tenuissima* Zipp.)  
 Java.
855. *X. Thyrsus* (Berk.) Sacc. 128 p. 615 (*Sphaeria Thyrsus* Berk.) Java.
856. *X. torrubiodes* Penz. et Sacc. 171 p. 226 Java; 176 p. 29 Taf. XX  
 Fig. 4 Java; B.
857. *X. trichopoda* Penz. et Sacc. 175 p. 226 Java; 176 p. 31 Taf. XXII  
 Fig. 4 Java; B.
858. *X. varians* Penz. et Sacc. 175 p. 225 Java; 176 p. 31 Taf. XXII  
 Fig. 2 Java.
859. *X. ventricosa* Berk. 43 p. 56 Java.  
*X. Weinlandii* Henn. 78 p. 341 Neu-Guinea; 215 p. 28 Deutsch  
 Neu-Guinea.
860. *X. Xanthophaea* Penz. et Sacc. 175 p. 226 Java; 176 p. 31 Taf. XXII  
 Fig. 3 Java; B.
861. *Thamnomycetes Warburgii* Hennings 70 p. 224—225 Neu-Gui-  
 nea; 71 p. 38 Neu-Guinea; 76 p. 27 (*Xylaria Warburgii* Henn.)  
 Neu-Guinea und p. (71) 169 (*Xylaria Warburgii* Henn.) Java; 214  
 p. 64 Deutsch Neu-Guinea.  
*Poronia Oedipus* Mont. 37 p. 14 Sarawak.
862. *Penzigia macrospora* Penz. et Sacc. 171 p. 494 Java; 176 p.  
 27—28 Taf. XIX Fig. 4 Java; B.

Fam. **Laboulbeniaceae.**

*Dichomyces Belonuchi* Thaxt. 215 p. 300 Deutsch Neu-Guinea.

**Basidiomycetes.**

## Hemibasidii

Fam. **Ustilaginaceae.**

863. *Ustilago Coicis* Brefeld. 190 Java.  
U. *leucoderma* Berk. 37 p. 26 Sarawak.
864. *U. montaniensis* Ell. et Everh. 141 p. 265 Holländisch Neu-Guinea.
865. *U. Nawaschi* Rac. 192 Java.
866. *U. nuda* (Jens.) 66 p. 24—26 Java.
867. *U. Ophiuri* Hennings 76 p. 1 Java.
868. *U. Sacchari* Rabenh. 125 Java; 229 Java; 230 Java; B.
869. *U. Treubii* Solms Laubach 218 p. 79—92 Taf. IX Fig. 1—15 Java; B.
870. *U. tritici* (Pers.) Rost. 66 p. 24—26 Java; 160 p. 1, 6 Java.
871. *U. utriculosa* (Nees.) Tul. 175 p. 231 Java; B.
872. *U. endotricha* (Berk.) B.
873. *Cintractia javanica* Rac. 192 Java.
874. *Poikilosporium bogoriense* Rac. 190 Java.
875. *Tolyposporium bogoriense* Rac. 192 Java.

Fam. **Tilletiaceae.**

876. *Tilletia horrida* Takahashi 209 p. 1 Java; 211 p. 322 Java.
877. *Entyloma Nephrolepidis* Rac. 190 Java.
878. *Sphacelotheca Hydropiperis* (Schum.) de Bary 76 p. 2 Java.
879. *Melanotaenium Selaginellae* Hennings et Nyman 76 p. 2 Java.
880. *Tubercina javanica* Koord. 119 p. 196 Abb. 21 Fig. 1—7 Java.
881. *Urocystis Anemones* (Pers.) 61 p. 91 Java.
882. *Graphiola Arengae* Rac. 190 Java; B.
883. *G. macrospora* Penz. et Sacc. 175 p. 232 Java; B.
884. *G. phoenicis* (Moug.) Poit. B.
885. *Farysia javanica* Rac. 87 p. 1 Java; 192 Java.

## Uredinales.

Fam. **Endophyllaceae.**

886. *Endophyllum Dichroae* Rac. 193 p. 274 Java.
887. *E. Griffithsiae* Rac. 190 Java; B.

Fam. **Schizosporaceae.**

888. *Masseella javanica* Hennings 76 p. 32 Java.

Fam. **Melampsoraceae.**

889. *Cronartium Kemangae* Rac. 190 Java; B.
890. *C. malloti* Rac. 190 Java.
891. *Dietelia Eviae* Rac. 190 Java.
892. *Phacopsora Elettariae* (Rac.) v. Höhnelt 95c p. 44—45 Java; 190  
(*Schroeteriaster Elettariae* Rac.) Java; B.

893. *P. Curcumae* v. Höhnel 95c p. 44—45 Java; 93 p. 1 (*Klastopsora Curcumae* v. Höhnel) Java.

Fam. **Pucciniaceae.**

- Gymnosporangium phaeosporum* Ces. 37 p. 26 (*Ceratitium phaeosporum* Ces.) Sarawak.
894. *Hamaspora longissima* Körn. 190 p. 21 Java; B.
895. *H. gedeanae* Rac. 193 p. 275 Java.
896. *Hemileia vastatrix* Berk. et Br. 46 Java; 50 Java; 70 p. 216 Java; 76 p. 3 Java; 256 Java; 260 p. 441 Java; 264a p. 643 Java; 267 p. 25—34—71 Fig. 18—21 Pl. I Fig. 15—18, 29—30, 43. Java; 268 Java; B.
897. *Hemileiopsis Strophanti* Rac. 190 Java; B.
898. *H. Wrightii* Rac. 190 Java; B.  
*Uromyces Albizziae* Hennings 68 p. 4 Deutsch Neu-Guinea.
899. *U. Cedrelae* Hennings 119 p. 199 Abb. 23 Fig. 1—3 Java.
900. *U. discoideus* Rac. 193 p. 267 Java.
901. *U. Euphorbiae-javanicae* Ed. Fischer 61 p. 91 Java.
902. *U. Inocarpus* Rac. 190 Java.  
*U. Kärnbachii* Hennings 68 p. 4—5 Deutsch Neu-Guinea.
903. *U. Kühnii* Krüg. 125 Java.  
*U. Malloii* Hennings 68 p. 46 Deutsch Neu-Guinea.
904. *U. Mucunae* Rabenh. 175 p. 231 Java.
905. *U. Payenae* Rac. 193 p. 268 Java.
906. *U. Phaseoli* (Pers.) Link. 190 Java.
907. *U. Sacchari* Krüger; 125 Java; B.
908. *U. Thelymitrae* Mc. Alp. 61 p. 92 Java; 91 p. 175 Java; 193 p. 267 (*Uromyces Thelymitrae* Rac). Java.
909. *U. Wurthii* Ed. Fischer 61 p. 91 Java.
910. *Gerwasia Rubi* Rac. 193 p. 271 Java.
911. *Puccinia amboinensis* Thüm. 220 p. 4 Ambon.
912. *P. brevispora* Rac. 190 Java.
913. *P. Cesatii* Schroet. 119 p. 198 Java.
914. *P. consimilis* Hennings 73 p. 10 Java.
915. *P. Curculigo* Rac. 190 Java; B.
916. *P. Cypripedii* Arthur 91 p. 176 Java.
917. *P. Endiviae* Pass. 61 p. 95 Java.
918. *P. exhausta* Dietel 61 p. 93 Java.
919. *P. Geophilae* Rac. 190 Java; B.
920. *P. macrocarya* Rac. 190 Java.
921. *P. Mapaniae* Rac. 190 Java; B.
922. *P. Moringae* Koord. 119 p. 198 Abb. 23 IV Java.
923. *P. (Hemipuccinia) Oldenlandiae* Hennings 68 p. 5 Java.
924. *P. periodica* Rac. 175 p. 231 Java; 190 Java; B.
925. *P. Pimpinellae* (Strauss) Mart. 61 p. 94 Java.

926. *P. purpurea* Cooke 76 p. 2 Java.  
927. *P. Puspa* Rac. 193 p. 273 Java.  
928. *P. Prainiana* Barcl. 175 p. 232 Java.  
929. *P. Solmsii* Hennings 190 Java; B.  
930. *P. Thwaitesii* Berk. 70 p. 217 Sumatra; 74 p. 495 Deutsch Neu-Guinea; 76 p. 2 Java; 119 p. 198 Abb. 22 I Java; 175 p. 232 Java; 190 Java; 214 p. 35 Deutsch Neu-Guinea; B.  
931. *P. Thwaitesii* Berk. var. *novo-guineensis* Hennings 68 p. 5 Neu-Guinea.  
932. *P. Toddaleae* Rac. 193 p. 272 Java.  
933. *P. Toreniae* Rac. 190 Java.  
934. *P. Wurthii* Ed. Fischer 61 p. 93 Java.  
935. *P. Xanthoxyli* Ed. Fischer 61 p. 93 Java.  
936. *Goplana Aporosae* Rac. 192 Java.  
937. *G. Michaeliae* Rac. 190 Java.  
938. *G. mirabilis* Rac. 192 Java.  
939. *Triphragmium pulchrum* Sacc. 190 Java; B.  
940. *T. Thwaitesii* Berk. et Br. 76 p. 3 Java; 175 p. 232 Java; 190 Java; B.  
941. *Sphaerophragmium Mucunae* Rac. 193 p. 273 Java.  
942. *Skierka Agallocha* Rac. 193 p. 275 Java.  
943. *S. Canarii* Rac. 126 p. 197 Abb. 22 II Java; 190 Java; B.  
944. *Uromycladium Tepperianum* (Sacc.) Mc. Alpine 70 p. 216 (*Uromyces Tepperianus* Sacc.) Java; 76 p. 2 (idem) Java; 163 p. 120 (idem) Java; 264 p. 803 (idem) Java; 193 p. 269 Java; B. (idem).  
*Aecidium Adenostemmae* Hennings 74 p. 596 Deutsch Neu-Guinea; 214 p. 36 Deutsch Neu-Guinea.  
945. *A. cinnamomi* Rac. 190 Java; B.  
946. *A. Clerodendri* Hennings 68 Holländisch Neu-Guinea; 76 p. 4 Java.  
947. *A. Dichrocephali* Hennings 76 p. 4 Java.  
948. *A. Elaeocarpi* Rac. 193 p. 276 Java.  
949. *A. Eleagni* Diet. 190 Java.  
*A. fragiforme* Ces. 37 p. 26 Sarawak.  
950. *A. Griffithsiae* Hennings 76 p. 4 Java.  
951. *A. Ipomoeae* Thüm. 175 p. 232 Java; 190 Java; B.  
*A. Kärnbachii* Hennings 68 p. 5 Deutsch Neu-Guinea; 214 p. 36 Deutsch Neu-Guinea.  
*A. Lauterbachii* Hennings 71 p. 23 Deutsch Neu-Guinea; 214 p. 36 Deutsch Neu-Guinea.  
952. *A. Litsaeae* Pat. 175 p. 232 Java; B.  
953. *A. Mori* Barkley 193 p. 277 Java.  
954. *A. moricola* Hennings 79 p. 140—141 Java.  
955. *A. Oleae* Hennings 70 p. 217 Java; 76 p. 4 Java.

- A. Phyllanthi Hennings 68 p. 6 Deutsch Neu-Guinea; 214 p. 36  
Deutsch Neu-Guinea.
956. A. Paramignyae Rac. 193 p. 277 Java.  
A. Puerariae Hennings 68 p. 6 Deutsch Neu-Guinea; 214 p. 36  
Deutsch Neu-Guinea.
957. A. Puspa Rac. 190 Java.
958. A. rhytismoides Rac. 190 Java.  
A. Sarawacense Ces. 37 p. 26 Sarawak.
959. A. Thelymotrae Rac. 190 Java.
960. Caecoma Anthurii Har. var. Alocasiae Rac. 193 p. 278 Java.
961. C. arundinae Rac. 190 Java; B.
962. C. Clerodendri Rac. 190 Java.
963. Uredo Acori Rac. 190 Java; B.  
U. Albizziae Hennings 214 p. 36 Deutsch Neu-Guinea.  
U. Alocasiae Hennings 68 p. 6 Deutsch Neu-Guinea; 214 p. 36  
Deutsch Neu-Guinea.
964. U. Antidesmae Rac. 190 Java; B.
965. U. Antidesmae dioicae Rac. 190 Java; B.
966. U. Arundinariae Syd. 190 Java.
967. U. Brideliae Koord. 119 p. 201 Java.
968. U. Cannae Wint. 175 p. 232 Java; B.
969. U. Cedrelae Hennings 79 p. 140 Java; B.
970. U. Chonemorphae Rac. 190 Java; 193 p. 278 Java; B.
971. U. Cinchonae Hennings 79 p. 140 Java; 197 p. 3 Java.
972. U. clerodendricola Hennings 79 p. 140 Java.
973. U. Derris Hennings 70 p. 217 Java; 76 p. 3 Java.
974. U. Dianellae Rac. 190 Java; B.  
U. Dischidiae Hennings 74 p. 495 Deutsch Neu-Guinea; 214 p. 36  
Deutsch Neu-Guinea.
975. U. Dioscoreae aculatae Rac. 190 Java; B.
976. U. Dioscoreae alatae Rac. 190 Java; B.
977. U. Dioscoreae filiformidis Rac. 190 Java; B.
978. U. Dodonaeae Koord. 119 p. 201 Java.
979. U. Freycinetiae Rac. 190 Java.
980. U. Geophilae Hennings et Nyman. 76 p. 3 Java.
981. U. Gossypii Rac. 190 Java; B.  
U. Jacquemontiae Hennings 71 p. 23 Deutsch Neu-Guinea; 214 p.  
37 Deutsch Neu-Guinea.  
U. Kärnbachii Hennings 71 p. 23 Deutsch Neu-Guinea; 214 p. 37  
Deutsch Neu-Guinea.
982. U. Kühnii (Krüg.) Went et Wakker 229 Java.
983. U. Lanneae v. Höhnel 93 p. 1 Java.  
U. Malloti Hennings 214 p. 37 Deutsch Neu-Guinea.
984. U. moricola Hennings 193 p. 278 Java; 79 p. 140 Java.



985. *U. orientale* Rac. 193 p. 279 Java.  
 986. *U. pedicellata* Rac. 193 p. 279 Java.  
 987. *U. Phaji* Rac. 190 Java; 91 p. 178 Java; B.  
 988. *U. Premnae* Koord. 119 p. 200 Abb. 23 III Java.  
 989. *U. Raciborskii* Koord. 119 p. 201 Abb. 23 II Java; 190 (*U. Pithecolobii* Rac.) Java.  
 990. *U. Tectonae* Rac. 119 p. 201 Java; 190 Java; B.  
 991. *U. Vitexi* Rac. 193 p. 279 Java.

## Auriculariales.

Fam. **Auriculariaceae.**

992. *Stypinella incrustans* (Rac.) 192 (*Helicobasidium incrustans* Rac.) Java.  
 993. *Platyglœa Hymenolepidis* Rac. 192 Java.  
 994. *Jola javensis* Pat. 163 p. 119 Pl. XXV Fig. 7—15 Java; 164 p. 97 Java; 193 p. 226 Java.  
 995. *Auricularia ampla* Pers. 273 Java; 176a p. 177 Rawak.  
 996. *A. Auricula-Judae* (L.) Schröter 10 p. 164 (*Exidia Auricula Judae* Fr.) Java; 40 p. 117 (*Hirneola Auricula Judae* Fr.) Englisch Neu-Guinea; 47 p. 67 Verlateneiland; 71 p. 23 Deutsch Neu-Guinea; 74 p. 496 Deutsch Neu-Guinea; 76 p. 5 Celebes und Liukiu eil.; 76 p. (39) 137 Java; 96 p. 37 Taf. VI Fig. 1a—5 Java. 98 Java; 118 p. 304 Java; 119 p. 202 Java; 163 p. 118 Java; 204 p. 126—127 Taf. LVI Fig. 4 (*Boletus quintus auris murina*) Ambon.  
*A. cornea* Ehrenb. 221 Timor.  
 997. *A. delicata* (Fr.) Hennings 33 p. 240 (*Hirneola delicata* (Fr.) Bres.) Java; 71 p. 24 Java und Deutsch Neu-Guinea; 76 p. (39) 137 Java; 83 p. 65 Java; 96 p. 37 (*Laschia velutina* Lév.) Java; 107 p. 76 (*Merulius affinis* Jungh.) Java; 127 p. 217 (*Laschia velutina* Lév.) Java; 128 p. 603 (*Laschia delicata* Fr.) Java; 128 p. 612 (*Laschia velutina* Lév.) Java; 128 p. 613 (*Merulius affinis* Jungh.) Java; 132 p. 2 (*Merulius affinis* Jungh.) Java; 142 p. 317 (*Merulius affinis* Jungh.) Java; 214 p. 37 Deutsch Neu-Guinea; 219 p. 252 (*Hirneola affinis* (Jungh.) Bres.) Deutsch Neu-Guinea; 221 (*Hirneola affinis* (Jungh.) Bres.) Timor.  
*A. lobata* Sommerf. 37 Borneo.  
 998. *A. mesenterica* (Dietel) Fr. 76 p. 5 Java; 135 p. 1015 Verlateneiland; 144 (*Phlebia mesenterica* Fr.) Java; 221 (*Auricularia mesenterica* Bull.) Timor; 273 (*Phlebia mesenterica* Fr.) Java.  
*A. nobilis* (Lév.) 221 (*Hirneola nobilis* Lév.) Timor.  
 999. *A. pellucida* (Jungh.) 107 p. 26 (*Exidia pellucida* Jungh.) Java; 142 p. 311 (*Exidia pellucida* Jungh.) Java.

1000. *A. polytricha* (Mont.) 40 p. 117 (*Hirneola polytricha* Mont.) Englisch Neu-Guinea; 107 p. 25 Fig. 13 (*Exidia purpurascens* Jungh.) Java; 127 p. 218 (*Exidia purpurascens* Jungh.) Java, Borneo, Sumatra; 128 p. 613 (*Exidia purpurascens* Jungh.) Sumatra, Borneo; 138 p. 123 (*Hirneola polytricha* Fr.) Englisch Neu-Guinea; 142 p. 311 (*Exidia purpurascens* Jungh.) Java; 163 p. 18 Java; 273 (*Exidia purpurascens* Jungh.) Java.
1001. *A. reflexa* (Berk.) Bres. 34 p. 551 Borneo; 37 p. 10 (*Auricularia sordescens* Ces.) Sarawak; 127 p. 214 (*Phlebia rugosissima* Lév.) Java; 128 p. 611 (*Phlebia rugosissima* Lév.) Java.
1002. *A. tenuis* (Lév.) 127 p. 219 (*Exidia tenuis* Lév.) Borneo; 128 p. 613 (*Exidia tenuis* Lév.) Borneo; 144 (*Exidia tenuis* Lév.) Java; 273 (*Exidia tenuis* Lév.) Java.
1003. *A. tremellosa* (Fr.) Hennings 40 p. 117 (*Laschia tremellosa* Fr.) Englisch Neu-Guinea; 43 p. 55 (*Laschia tremellosa* Fr.) Java; 71 p. 24 Deutsch Neu-Guinea; 96 p. 37 (*Laschia tremellosa* Fr.) Java; 138 p. 122 (*Laschia tremellosa* Fr.) Englisch Neu-Guinea; 214 p. 38 Deutsch Neu-Guinea.
1004. *Tjibodasia pezizoides* Holterm. 96 p. 44—48 Taf. V Fig. 20—23 Java.
1005. *Höhnelomyces javanicus* Weese 231 Java.

Fam. **Pilacraceae.**

1006. *Pilacre Petersii* Berk. et Curt. 175 p. 252 Java; B.

Tremellineae.

Fam. **Tremellaceae.**

1007. *Heterochaete javanica* v. *Höhnel* 86 p. 18 Fig. 5 Java.
1008. *H. Léveillei* Pat. 163 p. 117 Java; B.
1009. *Sebacina incrustans* Tul. 96 p. 73 Taf. IV Fig. 1—7b Java.
1010. *Exidia carnosia* Holterm. 96 p. 80—81 Taf. IV Fig. 12—15 Java.
1011. *E. glandulosa* (Bull.) Fr. 163 p. 117—118 Java.
1012. *Ulocolla papillosa* Holterm. 96 p. 77—78 Taf. IV Fig. 8—11e Java.
1013. *Tremella elastica* Zoll. 144 Java; 271 p. 380 Java; 273 Java; 67a p. 302 Java.
1014. *T. fuciformis* Berk. 76 p. 5, (40) 138 Java; 82 Java; 163 p. 117 Java; 221 Timor.
1015. *T. luteo-rubescens* Holterm. 96 p. 82-83 Taf. V. Fig. 1—13 Java.
1016. *T. mesenterica* Retz. 271 p. 380 Java.
1017. *T. mucoroidea* Pat. 163 p. 117 Pl. XXV Fig. 1—6 Java; 164 p. 100 Java.
1018. *T. silvestris* Holterm. 96 p. 83—84 Taf. V Fig. 14—19 Java.
1019. *Gyrocephalus exoticus* Pers. 176a p. 176—177 Rawak.
1020. *Clavariopsis pinguis* Holterm. 76 p. 6 Java; 96 p. 85—86 Taf. IV Fig. 16—20 Java.

1021. *Tremellodon gelatinosus* (Scop.) Fr. var. *bogoriense* Holterm. 76 p. 5 Java; 96 p. 76 Taf. III Fig. 13—14 Java.
1022. *T. gelatinosus* (Scop.) Fr. var. *celebica* Hennings 76 p. 5 Celebes.
1023. *Septobasidium Cinchonae* Rac. 192 Java; 197 p. 20—21 Fig. 13 Java.
1024. *S. frustulosum* (Berk. et Curt.) Pat. 192 Java; 163 p. 118—119 Java.
1025. *S. frustulosum* (Berk. et Curt.) Pat. var. *crassum* Pat. 76 p. (40) 138 Java; 163 p. 119 Java.  
*S. granulosum* Syd. 219 p. 253 Deutsch Neu-Guinea.
1026. *S. Henningsii* Pat. 76 p. (40) 138 Java; 192 Java.
1027. *S. humile* Rac. 192 Java.
1028. *S. Momp* (Tanaka) Rac. 76 p. (40) 138 (*Septobasidium bogoriense* Pat.) Java; 192 Java; 197 p. 21—22 Java.
1029. *S. pedicellatum* (Schwein.) Pat. var. *album* 76 p. (40) 138 Java.
1030. *S. rubiginosum* Pat. 76 p. (39) 137 Java; 163 p. 118 Java; 192 Java; B.
1031. *Ordonia orthobadion* Rac. 192 Java.
1032. *Mohortia tropica* Rac. 192 Java.
1033. *Platyglœa javanica* Pat. 166 p. 190 Java.

#### Dacryomycetinae.

#### Fam. **Dacryomycetaceae.**

1034. *Dacryomyces luridus* Holterm. 96 p. 53—54 Taf. VII Fig. 20—25 Java.
1035. *D. odoratus* Holterm. 96 p. 54—55 Taf. VII Fig. 16—19 Java.
1036. *D. rubidus* Holterm. 96 p. 55 Taf. VII Fig. 13—15 Java.
1037. *Guepinia coryneoides* Hennings 76 p. 6 Java.
1038. *G. discinoides* Hennings et Nyman 76 p. 6 Java; 76 p. (40) 138 (*Guepinia merulina* (Pers.) Quélet) Java.
1039. *G. ramosa* Curr. 76 p. 6 Java.
1040. *G. spathularia* (Schw.) Fr. 9 p. 335 (*Guepinia fissa* Berk.) Java; 34 p. 551 Borneo; 37 p. 10 (*Guepinia Palmiceps* Berk.) Borneo; 37 p. 10 (*Guepinia fissa* Berk.) Sarawak; 47 p. 67 (*Guepinia fissa* Berk.) Krakatau; 74 p. 496 (*Guepinia fissa* Berk.) Deutsch Neu-Guinea; 76 p. 6 (*Guepinia fissa* Berk.) Java; 83 p. 65 Java; 107 p. 78 Fig. 41 (*Cantharellus redivinus* Jungh.) Java; 108 p. 289 (*Cantharellus spathulatus* Jungh.) Fig. 4 a, b, c, d. Java; 134 p. 956 (*Guepinia fissa* Berk.) Krakatau; 135 p. 1015 (*Guepinia spathulata* (Jungh.) Verlateneiland.; 138 p. 123 Englisch Neu-Guinea; 142 p. 318 (*Cantharellus redivinus* Jungh.) Java; 142 p. 320 (*Cantharellus spathulatus* Jungh.) Java; 144 (*Guepinia fissa* Berk.) Java; 214 p. 38 (*Guepinia fissa* Berk.) Deutsch Neu-Guinea; 219 p. 252 Deutsch Neu-Guinea; 221 Timor; 273 (*Guepinia fissa* Berk.) Java.

1041. *Calocera cornea* (Batsch) Fr. 43 p. 56 Java; 219 p. 252 Deutsch Neu-Guinea.  
 1042. *C. Guepinia* Holterm. 96 p. 59 Taf. VII Fig. 3—6 Java.  
 1043. *C. major* Holterm. 96 p. 57 Taf. VII Fig. 1—2b Java.  
 1044. *C. minor* Holterm. 96 p. 57—58 Taf. VI Fig. 7a-d Java.  
 1045. *C. ochroleuca* Lév. 127 p. 217 Java; 128 p. 612 Java; 128 p. 612 (*Cyraria oryzaeformis* Jungh.) Java.  
 1046. *C. odorata* Holterm. 96 p. 56—57 Taf. VIII Fig. 1a-d Java.  
 1047. *C. problematica* Holterm. 96 p. 58 Taf. VI Fig. 6a-c Java.  
 1048. *C. variabilis* Holterm. 96 p. 59—60 Taf. VII Fig. 7—12 Java.

### Exobasidiineae.

#### Fam. Exobasidiaceae.

1049. *Exobasidium affine* Rac. 192 Java; 197a p. 3 Java.  
 1050. *E. javanicum* Rac. 192 Java.  
 1051. *E. Symploci fasciculatae* Rac. 190 Java; B.  
 1052. *E. Vaccinii* (Fuck.) Woron. 163 p. 117 Java.  
 1053. *E. vexans* Bern. 23 p. 8 Pl. I Java.  
 1054. *E. vulcanicum* Rac. 190 Java.  
 1055. *Kordyana Pinangae* Rac. 190 Java.  
 1056. *K. Tradescantiae* (Pat.) Rac. 190 Java; B.  
 1057. *Lelum ustilaginoides* Rac. 190 Java.

### Hymenomycetinae.

#### Fam. Hypochnaceae.

1058. *Hypochnus Gardeniae* Zimmerm. 262 p. 102 Fig. 2 Java.  
*H. ruberrimus* Ces. 37 p. 10 Sarawak.  
 1059. *Hypochnus serus* (Pers.) Fr. 163 p. 116 Java; B.  
 1060. *H. Theae* Bern. 17 Java; 169 p. 47 Java.  
 1061. *Pachysterigma grisea* Rac. 190 Java; B.

#### Fam. Thelephoraceae.

1062. *Tulasnella Cinchonae* Rac. 192 Java; 197 p. 22—23 Java.  
 1063. *Corticium amorphum* (Pers.) Fr. 70 p. 217—218 Java.  
*C. Berkeleyanum* Ces. 37 p. 10 Sarawak.  
 1064. *C. calceum* Fr. 76 p. (41) 139 Java; 163 p. 116 Java; B.  
 1065. *C. ceraceum* Berk. et Rav. 76 p. (41) 139 Taf. V Fig. 1 (*Cerocorticium bogoriense* Henn. et Nym.) Java; 76 p. (41) 139 (*Cerocorticium tjibodense* Hennings) Java; 91 p. 4 Java.  
 1066. *C. cerebrinum* Pat. 163 p. 116 Java.  
 1067. *C. coeruleum* Fr. 40 p. 117 Englisch Neu-Guinea; 166 p. 188 Java.

1068. *C. salmonicolor* Berk. et Br. 1a p. 20 (*Corticium javanicum* Zimmerm.) Java; 14 (Cort. jav. Zimm.) Java; 14a (Cort. jav. Zimm.) Java; 20 (Cort. jav. Zimm.) Java; 21 (Cort. jav. Zimm.) Java; 62 p. 266 (Cort. jav. Zimm.) Java; 64 (Cort. jav. Zimm.) Java; 119 p. 203 (Cort. jav. Zimm.) Java; 169 p. 137 (Cort. jav. Zimm.) Java; 194 p. 409 Fig. 1 (Cort. jav. Zimm.) Java; 195 p. 5 Fig. 1 (Cort. jav. Zimm.) Java; 196 (Cort. jav. Zimm.) Java; 197 p. 11—13 Fig. 6—12 Java; 201a p. 55 (Cort. jav. Zimm.) Java; 203 p. 59 (Cort. jav. Zimm.) Borneo (Sarawak); 206 p. 21 Pl. IV Java; 223 (Cort. jav. Zimm.) Java; 254 p. 5 (Cort. jav. Zimm.) Java; 257 (Cort. jav. Zimm.) Java; 262 p. 102—103 Fig. 3 (Cort. jav. Zimm.) Java; 264 p. 51 (Cort. jav. Zimm.) Java; 264 p. 803 (Cort. jav. Zimm.) Java; 265 p. 148 (Cort. jav. Zimm.) Java; 267 p. 51—53 Fig. 34 (Cort. jav. Zimm.) Java; 268 (Cort. jav. Zimm.) Java; 269 p. 14, 20 (Cort. jav. Zimm.) Java.
1069. *C. lacteum* Fr. 163 p. 116 Java.  
*C. laeve* Fr. 40 p. 117 Englisch Neu-Guinea.
1070. *C. ochraceum* (Fr.) 107 p. 35 (*Thelephora ochracea* Fr.) Java; 142 p. 312 (*Thelephora ochracea*) Java.
1071. *C. papyraceum* (Jungh.) Fr. 107 p. 36 (*Thelephora papyracea* Jungh.) Java; 142 p. 312 (*Thelephora papyracea* Jungh.) Java.
1072. *C. Theae* Bern. 21 Java.
1073. *Wiesnerina secunda* v. Höhnelt 93 p. 4 Fig. 1 Java.
1074. *Peniophora Coffeae* Zimm. 262 p. 102 Java.
1075. *Aleurodiscus javanicus* Henn. 76 p. (41) 139 Java; 83 p. 65 Java.  
*Hymenochaete adusta* (Lév.) Bres. 221 Timor.
1076. *H. attenuata* (Lév.) 127 p. 212 (*Stereum attenuatum* Lév.) Java; 128 p. 611 (*Stereum attenuatum* Lév.) Java.  
*H. leonina* Berk. et Curt. 138 p. 123 Englisch Neu-Guinea.
1077. *H. noxia* Berk. 25 p. 8, 10 Java; 64 Java; 67 p. 289—295 Java; 158 p. 19, 24 Java; 206 p. 19 Java.  
*H. phaea* Berk. 40 p. 117 Englisch Neu-Guinea.  
*H. radiosa* Hennings 74 p. 497 Deutsch Neu-Guinea; 214 p. 38 Deutsch Neu-Guinea.
1078. *H. rubiginosa* (Schr.) Lév. 10 p. 163 Borneo; 37 p. 10 Sarawak.
1079. *H. semilugens* (Kalchbrenner) Bres. 34 p. 550 Borneo.
1080. *H. spadicea* Berk. et Br. 76 p. (42) 140 Java.
1081. *H. tjibodensis* Hennings 76 p. (42) 140 Java.
1082. *Bonia Winkleri* (Bres.) 34 p. 551 (*Mycobinia Winkleri* Bres.) Borneo.
1083. *Stereum affine* Lév. 34 p. 550 Borneo; 127 p. 210 Java, Sumatra; 128 p. 610 Java, Sumatra.
1084. *S. annosum* Berk. et Br. 76 p. (41) 139 Java.

- S. bellum* Kunze 74 p. 497 Deutsch Neu-Guinea; 214 p. 39 Deutsch Neu-Guinea.  
*S. Berkeleyanum* Ces. 37 p. 10 Sarawak.  
*S. bicolor* Fr. 40 p. 117 Englisch Neu-Guinea.  
*S. Bolleanum* Mont. 221 Timor.  
*S. (Apus) Boryanum* Fr. 40 p. 117 Englisch Neu-Guinea.  
 1085. *S. Bresadoleanum* Lloyd 135 p. 1015 Verlateneil.  
 1086. *S. cinereo-badium* Klotzsch 176a p. 175–176 (*Thelephora moluccana* Pers.) Rawak.  
 1087. *S. cinereum* Lév. 127 p. 211 Sumatra; 128 p. 611 Sumatra.  
*S. complicatum* Fr. 138 p. 122 Englisch Neu-Guinea.  
 1088. *S. crenatum* Lév. 33 p. 240 (*Stereum princeps* Jungh.) Java; 107 p. 38–40 Fig. 22 (*Thelephora princeps* Jungh.) Java; 127 p. 210 *Stereum (Apus) princeps* Lév.) Java; 127 p. 210 Java; 128 p. 610 Java; 134 p. 951 (*Stereum princeps*) Java; 142 p. 312 (*Thelephora princeps* Jungh.) Java; 163 p. 116 (*Stereum princeps* Jungh.) Java; 221 Timor; 273 (*Thelephora princeps* Jungh.) Java, Sumatra; B. (*Stereum princeps* Jungh.).  
*S. Curreyi* Sacc. 219 p. 251 Deutsch Neu-Guinea.  
*S. cyathiforme* Fr. 40 p. 117 Englisch Neu-Guinea; 138 p. 122 Englisch Neu-Guinea.  
*S. elegans* Fr. 40 p. 117 Englisch Neu-Guinea.  
 1089. *S. effusum* Berk. 11 Aroe-eil.  
*S. fasciatum* Fr. 138 p. 122 Englisch Neu-Guinea.  
 1090. *S. ferrugineum* Pers. 127 p. 211 Sumatra; 128 p. 610 Sumatra; 273 (*Thelephora ferrugineum* Pers.) Java.  
*S. fissum* Berk. 219 p. 251 Deutsch Neu-Guinea.  
 1091. *S. Friesi* Lév. 273 (*Thelephora Friesi* Lév.) Java.  
 1092. *S. glabrum* Lév. 144 Java; 273 (*Thelephora glabrum* Lév.) Java.  
 1093. *S. hirsutum* (Willd.) Fr. 76 p. (41) 139 Java; 127 p. 211 Java; 128 p. 610 Java; 144 Java; 144 (*Thelephora hirsutum* Willd.) Java; 163 p. 116 Java; 273 (*Thelephora hirsutum* Willd.) Java.  
 1094. *S. induratum* Berk. 76 p. (41) 139 Java; 11 Aroe-eil.  
 1095. *S. involutum* Klotzsch 10 p. 163 Borneo; 40 p. 117 Englisch Neu-Guinea.  
 1096. *S. Junghuhnii* Fr. 61a p. 109 Java; 107 p. 40 (*Thelephora stricta* Jungh.) Java.  
 1097. *S. (Apus) Kurzianum* Cooke 43 p. 55 Java.  
 1098. *S. lobatum* Fr. 9 p. 335 Java; 40 p. 117 Englisch Neu-Guinea; 70 p. 218 Java; 71 p. 24 Java und Deutsch Neu-Guinea; 76 p. 6, (41) 139 Java; 83 p. 65 Java; 127 p. 211 Java, Sumatra; 128 p. 610 Java, Sumatra; 141a p. 191–192 (*Thelephora lobata* Kunze) Java; 144 Java; 214 p. 39 Deutsch Neu-Guinea; 221 Timor.  
 1099. *S. luteo-badium* (Fr.) 273 (*Thelephora luteo-badium* Fr.) Bima.

1100. *S. Malloti* Berk. 83 p. 65 Java.  
*S. Mellisii* B. 40 p. 117 Englisch Neu-Guinea.
1101. *S. muscicolum* Pat. 163 p. 116 Taf. XXIV Fig. 14-17 Java.
1102. *S. obliquum* Mont. et Berk. 9 p. 334-335 Java; 129a p. 147 (*Thelephora obliqua* Lév.) Java; 144 Java; 219 p. 251 Deutsch Neu-Guinea; 273 (*Thelephora obliqua* Mont. et Berk.) Java.  
*S. ochroleucum* Fr. 37 p. 10 Sarawak.
1103. *S. oillosum* (Lév.) 273 (*Thelephora* (*Stereum*) *oillosum* Lév.) Java.
1104. *S. Ostrea* (Nees.) Bres. 26 (*Thelephora Ostrea* Bl. et Nees) Java; 34 p. 550 (*Stereum Ostrea* f. *concolor* Jungh.) Borneo; 47 p. 68 (*Stereum concolor* Jungh.) Krakatau, Verlateneil.; 47 p. 68 Krakatau, Verlateneil.; 107 p. 37 (*Thelephora Ostrea* Nees.) Java; 107 p. 38 (*Thelephora concolor* Jungh.) Java; 127 p. 211 Java; 128 p. 610 Java; 134 p. 951 Java; 142 p. 312 (*Thelephora concolor* Jungh.) Java; 142 p. 312 (*Thelephora Ostrea* Nees) Java.
1105. *S. perlatum* Berk. 47 p. 68 Verlateneil.; 134 p. 965 Verlateneil.
1106. *S. purpureum* Fr. 127 p. 211 Java; 128 p. 610 Java.
1107. *S. rigidum* Lév. 127 p. 211 Java; 128 p. 611 Java.
1108. *S. sanguinolentum* (Alb. et Schw.) Fr. 76 p. (41) 139 Java.
1109. *S. spectabile* Mey. 163 p. 116 Java; B.  
*S. submembranaceum* Hennings 74 p. 497 Deutsch Neu-Guinea; 219 p. 39 Deutsch Neu-Guinea.
1110. *S. tenellum* Kalchbr. 220 p. 3 Ambon.
1111. *S. tjibodense* Hennings 76 p. (42) 140 Java.  
*S. (Mes.) Thozétii* B. 40 p. 117 Englisch Neu-Guinea.  
*S. versicolor* Fr. 138 p. 122 Englisch Neu-Guinea.
1112. *S. villosum* Lév. 127 p. 213 Java; 128 p. 611 Java.
1113. *Thelephora acanthacea* Lév. 129a p. 147 Java; 144 Java; 163 p. 115 Java; 273 Java; B.
1114. *T. (Merisma) acicularis* Jungh. 127 p. 207 Java; 128 p. 609 Java; 144 (*Merisma aciculare* Lév.) Java; 273 Java.
1115. *T. allutacea* Pers. 144 Java; 273 Java.
1116. *T. (Merisma) Ambinensis* Lév. 127 p. 207 Ambon; 128 p. 609 Ambon; 273 Java.
1117. *T. anthocephala* Fr. 43 p. 56 Java.
1118. *T. arida* Fr. 107 p. 36 Java; 142 p. 312 Java.
1119. *T. (?) acroleuca* Pat. 166 p. 188 Java.
1120. *T. badia* Kunze 273 Java.
1121. *T. bidentata* Pat. 163 p. 115 Taf. XXIV Fig. 11-13 Java.  
*T. caperata* Berk. et Mont. 71 p. 24 Deutsch Neu-Guinea; 214 p. 39 Deutsch Neu-Guinea.
1122. *T. (Merisma) capillaris* Lév. 127 p. 208 Java; 128 p. 609 Java; 273 (*Merisma capillare* Lév.) Java.
1123. *T. (Merisma) Cladonia* Schwein. 127 p. 207 Ambon.

1124. *T. coccinea* Jungh. 107 p. 36 Java; 142 p. 312 Java.  
 1125. *T. compressum* Lév. 273 (*Merisma compressum* Lév.) Java.  
 1126. *T. discolor* Zoll. et Mor. 271 p. 384 (*Himantia Discolor* Zoll. et Mor.) Java.  
 1127. *T. dolosa* Lév. 127 p. 209 Java; 128 p. 610 Java.  
 1128. *T. fusco-pallida* Jungh. 107 p. 34 (*Himantia fusco-pallida*) Java.  
 1129. *T. implexum* Lév. 144 Java; 273 Java.  
     *T. lamellata* B. 40 p. 117 Englisch Neu-Guinea.  
     *T. multipartita* Fr. 37 p. 10 Sarawak.  
 1130. *T. nondumevoluta* Lév. 273 Java.  
 1131. *T. paradoxa* Lév. 127 p. 206 Java; 128 p. 609 Java.  
 1132. *T. radicans* Berk. 213a p. 525 Java. (?)  
     *T. regularis* Schw. 40 p. 117 Englisch Neu-Guinea.  
 1133. *T. Serrei* Pat. et Har. 167 p. 116 Java.  
 1134. *T. striata* Jungh. 107 p. 40 Java; 142 p. 312—313 Java.  
 1135. *T. spongiosa* Lév. 273 Java.  
 1136. *T. surinamensis* Lév. 273 Java.  
 1137. *T. viridula* Bres. 33 p. 240 Java.  
 1138. *T. tjibodensis* Hennings 76 p. (42) 140 Java.  
 1139. *T. Zollingeri* Sacc. 67a p. 304 (*Thelephora spec. nov.*) Java; 213a p. 530 Java.  
 1140. *Cladoderris Blumei* Lév. 127 p. 213 Java; 128 p. 611 Java.  
 1141. *C. crassa* Fries 76 p. 4 Celebes; 219 p. 251 Deutsch Neu-Guinea.  
 1142. *C. dendritica* (Pers.) Berk. 10 p. 163 Borneo; 34 p. 550 Borneo; 37 p. 10 Taf. IV Fig. Sarawak; 40 p. 117 Englisch Neu-Guinea; 71 p. 25 Deutsch Neu-Guinea; 74 p. 498 Deutsch Neu-Guinea; 138 p. 122 Englisch Neu-Guinea; 166 p. 188 Java; 176a p. 176 (*Thelephora dendritica* Pers.) Rawak; 214 p. 40 Deutsch Neu-Guinea.  
 1143. *C. elegans* Fr. 108 p. 290 Fig. 7 (*Cymatoderma elegans* Jungh.) Java; 127 p. 206 (*Cymatoderma elegans* Jungh.) Java, Sumatra; 128 p. 609 (*Cymatoderma elegans* Jungh.) Sumatra; 142 p. 320 (*Cymatoderma elegans* Jungh.) Java; 163 p. 115 Java; 273 (*Cymatoderma elegans* Jungh.) Java, Sumatra.  
 1144. *C. formosa* Lév. 127 p. 214 Java; 128 p. 611 Java; 144 Java; 273 Java.  
 1145. *C. infundibuliformis* Fr. 134 p. 951 Java.  
     *C. Schumanniana* Hennings 71 p. 25 Deutsch Neu-Guinea; 214 p. 40 Deutsch Neu-Guinea.  
     *Beccariella insignis* Ces. 37 p. 10 Sarawak.  
     *Craterellus hypolyssoides* Ces. 37 p. 10 Sarawak.  
     *C. spathularius* 37 p. 10 Sarawak.  
 1146. *Phlebophora rugulosa* Lév. 273 Java.  
 1147. *P. silvestris* (Holterm.) 97 p. 104 Taf. XI Fig. 2a-d (*Van Romburghia silvestris* Holterm.) Java.  
 1148. *P. Solmsiana* Hennings 33 p. 238 Java; 76 p. 7, (42) 140 Java.



1149. *Cyphella auricularioides* Hennings 76 p. 7 Java.  
 1150. *C. byssacea* Hennings et Nyman 76 p. 7 Java.  
 1151. *C. candida* Jungh. 107 p. 28 Fig. 16 Java; 142 p. 311 Java.  
 1152. *C. crucibuliformis* Lév. 273 Java.  
 1153. *C. integra* Zoll. et Mor. 273 Java.  
 1154. *C. Musae* Jungh. 107 p. 28 Fig. 25 Java; 142 p. 311 Java.  
 1155. *C. reniformis* Pat. 163 p. 115 Java.  
     *C. scariosa* Ces. 37 p. 11 Sarawak.  
     *C. theiacantha* Syd. 219 p. 253 Deutsch Neu-Guinea.  
 1156. *C. villosa* (Pers.) Karst. 107 p. 29 (*Peziza villosa* Pers.) Java;  
     142 p. 311 (*Peziza villosa* Pers.) Java; 219 p. 253 Deutsch Neu-  
     Guinea.  
 1157. *Discocyphella marasmioides* Hennings et Nyman 76 p. (43)  
     141 Java.  
     *Podoscypha alutacea* Bres. 219 p. 251 Taf. I B Deutsch Neu-  
     Guinea.

Fam. **Clavariaceae.**

1158. *Typhula hyalina* Jungh. 107 p. 32 Fig. 18 Java; 142 p. 312  
     Java.  
 1159. *Physalacria Bambusae* v. Höhnelt 86 p. 16 Java.  
 1160. *Clavaria abietina* Pers. 128 p. 612 Java.  
 1161. *C. alcicornis* Zoll. et Mor. 67a p. 302—303 Java; 129a p. 155  
     Java; 144 Java; 271 p. 382 Java; 273 Java.  
 1162. *C. amethystina* Bull. 67a p. 302 Java; 271 p. 381 Java.  
 1163. *C. amoena* Zoll. 67a p. 302 Java; 144 Java; 271 p. 380 Java.  
 1164. *C. byssiseda* Pers. 67a p. 302 Java; 271 p. 381 Java.  
 1165. *C. capillaris* Lév. 144 Java.  
 1166. *C. compressa* (Lév.) 129a p. 153 (*Eriocladus compressus* Lév.)  
     Java; 144 Java.  
 1167. *C. corniculata* Schaeff. 144 Java; 271 p. 382 Java; 273 Java.  
 1168. *C. coronata* Zipp. 127 p. 215 Java; 128 p. 612 Java.  
 1169. *C. cristata* Pers. 107 p. 32 Java; 109 p. 368 Java; 142 p. 312  
     Java.  
 1170. *C. cristulata* Hennings et Nyman. 76 p. 8 Java.  
 1171. *C. Dozyii* Lév. 127 p. 216 Java; 128 p. 612 Java.  
 1172. *C. echinospora* Berk. et Br. 76 p. (43) 141 Java; 219 p. 252  
     Deutsch Neu-Guinea.  
 1173. *C. fasciculata* Pers. 67a p. 302 (*Clavaria phoenicea* Zoll.) Java;  
     144 Java; 271 p. 381 Java; 273 Java.  
 1174. *C. filiformis* Hennings et Nyman 76 p. 8 Java.  
 1175. *C. Fleischeriana* Hennings 76 p. 9 Java.  
 1176. *C. fragilis* Fr. 43 p. 56 Java.  
 1177. *C. furcata* Hennings et Nyman 76 p. 9 Java.

1178. *C. fusiformis* Sow. 33 p. 240 Java; 219 p. 253 Deutsch Neu-Guinea.
1179. *C. gracillima* Wakker 230 Java.
1180. *C. helvola* Pers. 273 Java.
1181. *C. implexa* Lév. 129a p. 154 Java.
1182. *C. Janseiana* Holterm. 96 p. 103—104 Taf. XI Fig. 1a-c Java.
1183. *C. Kunzii* Fr. 144 Java.
1184. *C. laeta* Berk. et Br. 70 p. 218 Sumatra; 76 p. 8 Sumatra.
1185. *C. liguloides* Hennings et Nyman. 76 p. 8 Java.
1186. *C. lilacina* Jungh. 127 p. 216 Java; 128 p. 612 Java.
1187. *C. nigra* Lév. 127 p. 213 Sumatra; 128 p. 612 Sumatra.
1188. *C. Nymaniana* Hennings 76 p. 9 Java.
1189. *C. phaeocladia* Pat. 166 p. 189 Java.
1190. *C. purpurea* Fl. Dan. 273 Java.
1191. *C. spiralis* Jungh. 107 p. 32 Fig. 19 Java; 142 p. 312 Java.
1192. *C. stricta* (Pers.) 109 p. 368 Java.
1193. *C. strigosa* Hennings et Nyman 76 p. 8 Java.
1194. *C. subaurantiaca* Hennings 76 p. 8 Java.  
*C. subfistulosa* Hennings 74 p. 498 Deutsch Neu-Guinea; 214 p. 40 Deutsch Neu-Guinea.
1195. *C. tenuissima* Lév. 129a p. 156 Java.
1196. *C. tjibodensis* Hennings 76 p. (43) 141 Java.
1197. *C. trichotoma* Lév. 127 p. 216 Borneo; 128 p. 612 Borneo.
1198. *C. typhoidea* Hennings 76 p. (43) 141 Java.
1199. *C. umbrina* Lév. 129a p. 155 Java; 144 Java; 273 Java.
1200. *C. Zippelii* Lév. 33 p. 239 Java; 86 p. 15—16 Java; 90 p. 2 (*Clavaria cyanocephala* Berk. et Curt.) Java; 127 p. 215 Java; 128 p. 612 Java; 163 p. 116 Java; 166 p. 189 (*Clavaria aeruginosa* Pat.) Java; B.
1201. *C. Zollingeri* Lév. 129a p. 155 Java; 144 Java; 273 Java.
1202. *Pterula capillaris* (Lév.) 127 p. 208 (*Merisma capillaris* Lév.) Java.
1203. *P. dendroidea* (Jungh.) Fr. 107 p. 33 Fig. 20 (*Clavaria dendroides* Jungh.) Java; 127 p. 209 (*Thelephora dendroides* Jungh.) Java; 128 p. 609 (*Thelephora dendroides* Jungh.) Java; 142 p. 312 (*Clavaria dendroides* Jungh.) Java; 144 (*Merisma dendroides* Lév.) Java; 163 p. 115 Java; B.
1204. *P. fulvescens* Bres. 34 p. 551 Borneo.  
*P. grandis* Syd. 219 p. 252 Fig. I E Deutsch Neu-Guinea.
1205. *P. hirsuta* Hennings 76 p. 9 Java.
1206. *P. multifida* Fr. 76 p. 9 Java.
1207. *P. pungens* Lév. 76 p. (45) 143 Java; 129a p. 157 (*Merisma pungens* Lév.) Java; 144 (*Merisma pungens* Lév.) Java; 273 (*Merisma pungens* Lév.) Java.  
*P. Timorensis* Torrend 221 Timor.

1208. *Lachnocladium aciculare* Jungh. et Lév. 127 p. 207 Java.  
1209. *L. albidum* Pat. 166 p. 188 Java.  
1210. *L. articulatum* Hennings 76 p. (44) 142 Java.  
1211. *L. cornicularioides* Hennings 76 p. (45) 143 Java.  
1212. *L. echinosporum* Bres. 34 p. 551 Borneo.  
1213. *L. Englerianum* Henn. 76 p. 8, (44) 142 Java, Celebes.  
1214. *L. funale* (Lév.) Sacc. 127 p. 208 (*Thelephora funalis* Lév.) Java;  
128 p. 609 (*Thelephora funalis* Lév.) Java.  
1215. *L. furcellatum* Lév. 40 p. 117 Englisch Neu-Guinea; 70 p. 218  
Sumatra; 76 p. 8 Sumatra, p. (44) 142 Java; 83 p. 65 Java.  
1216. *L. Janseanum* (Holtermann) Hennings 76 p. (45) 143 Java.  
*L. Lauterbachii* Hennings 71 p. 25 Deutsch Neu-Guinea; 214 p. 40  
Deutsch Neu-Guinea; 219 p. 252 Deutsch Neu-Guinea.  
1217. *L. palmatum* Hennings 76 p. (44) 142 Java.  
1218. *L. pteruliformis* Hennings 76 p. (45) 143 Java.  
1219. *L. ramalinooides* Hennings 76 p. (45) 143 Java.  
1220. *L. rameale* Berk. et Br. 141 p. 266 Holländisch Neu-Guinea.  
1221. *L. Sarasinii* Hennings 76 p. 7 Taf. I Fig. 7 Celebes.  
1222. *L. scoparium* (Lév) Sacc. 127 p. 207 (*Thelephora scoparia* Lév.)  
Java; 128 p. 609 (*Thelephora scoparia* Lév.) Java.  
1223. *L. simplex* Henn. 76 p. (44) 142 Java.  
1224. *L. subarticulatum* Hennings 76 p. (44) 142 Java.  
1225. *L. zandbaiense* Hennings et Nyman 76 p. (44) 142 Java.  
1226. *Sparassis Wentii* Oud. 157 Java; *L.* (nicht i. lit.)  
*Grandinia glabrescens* Berk. et Rav. 37 p. 9 Sarawak.  
1227. *G. microthelia* Lév. 127 p. 205 Java; 128 p. 608 Java.  
*Odontia cremorina* Bres. 219 p. 251 Deutsch Neu-Guinea.  
1228. *O. cretacea* Hennings et Nyman 76 p. (45) 143 Java.  
*O. (?) farinacea* Ces. 37 p. 9 Sarawak.  
1229. *Phlebia rugosissima* Lév. 127 p. 214 Java.  
1230. *Lopharia javanica* Hennings et Nyman 76 p. (46) 144 Java.  
1231. *Radulum mirabile* Berk. et Br. 37 Borneo.  
1232. *R. subquercinum* Hennings 76 p. (46) 144 Java.  
*Hydnum Boveanum* Mont. 221 Timor.  
1233. *H. (Dryodon) caperatum* Pat. 163 p. 114 Java.  
*H. Cesati* Berk. 37 p. 9 Sarawak.  
1234. *H. citrinum* Zoll. et Mor. 271 p. 386 Java; 273 Java.  
1235. *H. (Hericium) coralloides* Scop. 163 p. 114 Java.  
*H. ferrugineum* Fr. 37 p. 9 Sarawak.  
1236. *H. fuscum* Pers. 127 p. 205 Java; 128 p. 608 Java.  
1237. *H. (Acia) glaucum* Pat. 163 p. 115 Java.  
1238. *H. helvolum* Zipp. 127 p. 204 Java; 128 p. 608 Java.  
1239. *H. (Radulum) herpotodon* Lév. 129a p. 145 Java; 144 Java;  
273 Java.

1240. *H. (Dryodon) javanicum* Pat. 163 p. 114 Java.  
*H. (Apus) luteovirens* Ces. 40 p. 117 Englisch Neu-Guinea.  
*H. neo-guineense* Hennings 71 p. 25 Deutsch Neu-Guinea; 214 p. 41 Deutsch Neu-Guinea.
1241. *H. niveum* Pers. 129 p. 145 Java; 144 Java; 273 Java,
1242. *H. ochraceum* Pers. 47 p. 67 Krakatau; 129a p. 145 Java; 134 p. 965 Krakatau; 144 Java; 273 Java.
1243. *H. phaeodon* Lév. 129b p. 125 Java.
1244. *H. rawakense* Pers. 37 p. 9 Sarawak; 71 p. 25 Deutsch Neu-Guinea; 176a p. 175 Rawak; 214 p. 41 Deutsch Neu-Guinea.
1245. *H. roseo-maculatum* Henn. et Nyman 76 p. 10 Java.
1246. *H. rufulum* Lév. 127 p. 205 Java; 128 p. 608 Java; 273 Java.
1247. *H. Sarasinii* Hennings 76 p. 9 Taf. I Fig. 2 Java.
1248. *H. sclerodontium* Mont. et Berk. 9 p. 333 Java.
1249. *H. spathulatum* (Schw.) 134 p. 951 Java.
1250. *H. tenuiculum* Lév. 129a p. 145 Java; 144 Java; 273 Java.  
*Irpex depauperatus* Berk. et Br. 219 p. 251 Deutsch Neu-Guinea.
1251. *I. flavus* Klotzsch 10 p. 164 Borneo; 36 p. 508 Java; 40 p. 117 Englisch Neu-Guinea; 76 p. (47) 145 (*Polystictus flavus* Jungh.) Java; 107 p. 46 Fig. 25 (*Polyporus flavus* Jungh.) Java; 127 p. 193 (*Polyporus flavus* Jungh.) Sumatra; 128 p. 605 (*Polyporus flavus* Jungh.) Sumatra; 132 p. 3 (*Polystictus flavus* Jungh.) Java; 141a p. 181 (*Polyporus flavus* Jungh.) Java; 142 p. 313 (*Polyporus flavus* Jungh.) Java; 163 p. 40 (*Trametes flava* Klotzsch) Java; 221 Timor.
1252. *I. flavus* (Jungh.) Klotzsch var. *orbicularis* Jungh. 107 p. 48 Fig. 26 Java.  
*I. pellicula* (Jungh.) Bres. 221 Timor.
1253. *Sistotrema autochthon* Mont. et Berk. 9 p. 332—333 Java; 144 Java; 273 Java.
1254. *S. citreolum* Jungh. 127 p. 205 Java; 128 p. 608 Java.

Fam. **Polyporaceae.**

1255. *Solenia calamicola* Hennings et Nyman 76 p. 7 Java.
1256. *S. subfasciculata* Hennings et Nyman 76 p. 7 Java.
1257. *S. zandbaiensis* Hennings et Nyman 76 p. (42) 140 Java.
1258. *Merulius Corium* Fr. 166 p. 187 Java.  
*M. Crocicreas* Ces. 37 p. 9 Sarawak.
1259. *M. cuticularis* Lév. 273 Java.
1260. *M. similis* Berk. et Br. f. *pileata* 36 p. 508 Java.
1261. *Poria appositus* (Lév.) 129a (*Polyporus appositus* Lév.) p. 14 Java; 144 (*Polyporus appositus* Lév.) Java; 273 (*Polyporus appositus* Lév.) Java.  
*P. Archeri* Berk. 219 p. 250 Deutsch Neu-Guinea.

1262. *P. borbonica* Pat. 36 p. 505 Java.
1263. *P. byssogena* (Jungh.) 107 p. 43 Fig. 23 (*Polyporus byssogenus* Jungh.) Java; 132 p. 2 (*Polyporus byssogenus* Jungh.) Java; 134 p. 951 Java; 142 p. 313 (*Polyporus byssogenus* Jungh.) Java.  
*P. corticola* Fr. 40 p. 117 Englisch Neu-Guinea.
1264. *P. fuligo* (Berk. et Br.) Cooke 36 p. 504 Java.
1265. *P. hyalina* (Berk.) Cooke 36 p. 505 Java.
1266. *P. hypolateritia* 25 p. 8 Java; 158 p. 19—24 Java.  
*P. interrupta* Berk. et Br. 219 p. 250 Deutsch Neu-Guinea.  
*P. Ledermannii* Syd. 219 p. 250 Deutsch Neu-Guinea.  
*P. Lindbladii* Berk. 40 p. 117 Englisch Neu-Guinea.  
*P. luctuosa* (Ces.) 37 p. 7 (*Polyporus luctuosa* Ces.) Sarawak.  
*P. membranincta* Berk. 219 p. 250 Deutsch Neu-Guinea.
1267. *P. medulla-panis* Pers. 36 p. 505 Java.  
*P. mellea* Sacc. 138 p. 122 Englisch Neu-Guinea.
1268. *P. nitida* Pers. 36 p. 505 Java.
1269. *P. pellicula* Jungh. 107 p. 44 Java; 142 p. 313 Java.
1270. *P. Radula* (Pers.) Fr. 76 p. (46) 144 Java.  
*P. Ravenalae* (Berk. et Br.) 37 p. 6 (*Polyporus Ravenalae* Berk. et Br.) Sarawak.  
*P. rufitincta* Berk. et Br. 219 p. 250 Deutsch Neu-Guinea.  
*P. sarawacensis* (Berk.) 37 p. 7 (*Polyporus sarawacensis* Berk.) Sarawak.
1271. *P. subambigua* Bres. 36 p. 505 Java.
1272. *P. vulgaris* Fr. 18 p. 313 (*Polyporus vulgaris* Fr.) Java; 107 p. 42 (*Polyporus vulgaris* Fr.) Java.
1273. *P. roseo-albus* Jungh. 107 p. 43 (*Polyporus roseo-albus* Jungh.) Java; 133a p. 284 (*Fomes roseo-albus* Jungh.) Java; 142 p. 313 (*Polyporus roseo-albus* Jungh.) Java.
1274. *Fomes atro-albus* Hennings 36 p. 496 Java; 76 p. (46) 144 Java; 133a p. 219 Fig. 574 Java.  
*F. bistratosus* Berk et Cooke 40 p. 116 Englisch Neu-Guinea.
1275. *F. calcitratus* Berk. et Curt. 33 p. 238 Java; 221 Timor.
1276. *F. caliginosus* Berk. 37 p. 5—6 Sarawak; 40 p. 116 Englisch Neu-Guinea; 47 p. 67 Krakatau; 76 p. 10 Celebes; 134 p. 905 Krakatau.
1277. *F. caryophylli* (Rac.) Bres. 36 p. 498 Java; 133a p. 254—255 Java; 190 (*Trametes caryophylli* Rac.) Java.
1278. *F. Cesatianus* Henn. 133a p. 279 Borneo.
1279. *F. conchatus* (Pers.) Fr. 74 p. 499 Deutsch Neu-Guinea; 76 p. (47) 145 Java; 138 p. 121 Englisch Neu-Guinea; 214 p. 42 Deutsch Neu-Guinea.  
*F. connatus* Fr. 40 p. 116 Englisch Neu-Guinea.
1280. *F. cremorinus* Cesati 133a p. 279 Borneo.  
*F. Curreyi* Sacc. 138 p. 121 Englisch Neu-Guinea.
1281. *F. fastuosus* Lév. 36 p. 497 Java.

1282. *F. ferreus* Berk. 10 p. 163 Borneo; 40 p. 116 Englisch Neu-Guinea.
1283. *F. fomentarius* (Lév.) Fr. 40 p. 116 Englisch Neu-Guinea; 107 p. 63 (*Polyporus fomentarius* Lév.) Java; 142 p. 315 (*Polyporus fomentarius* Fr.) Java.
1284. *F. furcatus* Jungh. 107 p. 69 Fig. 35 (*Polyporus furcatus* Jungh.) Java; 132 p. 3 (*Polyporus furcatus* Jungh.) Java; 133a p. 280 Java; 142 p. 316 (*Polyporus furcatus* Jungh.) Java; L.
1285. *F. glabrescens* Berk. 36 p. 496 Java.  
*F. hemitephrus* Berk. 40 p. 116 Englisch Neu-Guinea.
1286. *F. Höhnelii* Bres. 36 p. 499 Java; 133a p. 281 Java.
- 1286a. *F. holosclerus* Berk. 10 p. 163 Borneo; 40 p. 116 Englisch Neu-Guinea.
1287. *F. hornodermus* Mont. 133a p. 214—215 Fig. 570 Java.
1288. *F. igniarius* (Lév.) Fr. 107 p. 63 (*Polyporus igniarius* Lévy.) Java; 142 p. 315 (*Polyporus igniarius*) Java; 271 p. 388 (*Polyporus igniarius* Fr.) Java.  
*F. incrassatus* Berk. 40 p. 116 Englisch Neu-Guinea; 138 p. 121 Englisch Neu-Guinea.  
*F. inflexibiles* Berk. 40 p. 116 Englisch Neu-Guinea.
1289. *F. inflexibilis* Berk. var. *javanicus* 36 p. 498 Java.
1290. *F. Kermes* Berk. et Br. 76 p. (47) 145 (*Polyporus ochrocroceus* Hennings et Nyman) Java; 133 p. 2 (*Fomes albo-marginatus* Zipp.) Java; 133a p. 278 (*Fomes albo-marginatus*) Java, p. 231 und 283 (*Fomes ochrocroceus*) Java.
1291. *F. Koningsbergii* Lloyd 133a p. 270 Java; 134 p. 951 Java; B.
1292. *F. lamaensis* (Murr.) Sacc. 133a p. 245 Java; L.
1293. *F. latissimus* Bres. 35 p. 75 Java.
1294. *F. ligneus* Berk. 76 p. (47) 145 Java.
1295. *F. lignosus* (Kl.) Bres. 134 p. 951 (*Polyporus lignosus*) Java; 219 p. 250 Deutsch Neu-Guinea; 36 p. 496 Java; 40 p. 116 (*Polyporus Auberianus* Mont.) Englisch Neu-Guinea; 74 p. 500 (*Polyporus Auberianus* Mont.) Deutsch Neu-Guinea; 76 p. (46) 144 (*Fomes Auberianus* Mont.) Java; 83 p. 65 (*Fomes Auberianus* Mont.) Java; 138 p. 121 (*Polyporus Auberianus* Mont.) Englisch Neu-Guinea; 163 p. 111 (*Fomes Auberianus* Mont.) Java; 214 p. 43 (*Polyporus Auberianus* Mont.) Deutsch Neu-Guinea; B (*Polyporus Auberianus* Mont.).  
*F. longipes* Lév. 40 p. 116 Englisch Neu-Guinea.  
*F. loricatus* P. 40 p. 116 Englisch Neu-Guinea.
1296. *F. Gregorii* Smith 36 p. 497 (*Fomes aulaxinus* Bres.) Java; 133a p. 278 Java.  
*F. mastoporus* Lév. 37 p. 4 Sarawak.
1297. *F. melanodermus* Pat. 36 p. 496 Java; 133a p. 261 Java; 163 p. 113 (*Xanthochrous melanodermus* Pat.) Java.

1298. *F. melanodermus* Pat. var. *tomentosa* Bres. 36 p. 497 Java.
1299. *F. melanoporus* (Mont.) Cooke 36 p. 499 Java; 37 p. 6 (*Polyporus melanoporoides* Ces.) Sarawak; 133a p. 240 Java; 138 p. 120 Borneo.
1300. *F. minutulus* Hennings 34 p. 549 Borneo; 133a p. 251 Fig. 593, Borneo.  
*F. nigrolaccatus* Cooke 40 p. 116 Englisch Neu-Guinea.
1301. *F. ochroleucus* Berk. 135 p. 1015 Verlateneiland; 166 p. 187 Java; 221 Timor.
1302. *F. opacus* Berk. 10 p. 163 Borneo.
1303. *F. pachyphloeus* Pat. 131h p. 36 Fig. 361 Java; 133a p. 260—261 Fig. 600 Java. 163 p. 111 Java; L.
1304. *F. pachyphloeus* Pat. var. *stipitatus* Bres. 33 p. 238 Java.
1305. *F. Pala* (Lév.) 133 p. 4 (*Polyporus Pala*) Java.
1306. *F. pectinatus* (Klotzsch) Cooke. 9 p. 332 (*Polyporus pullus* Mont. et Berk.) Java; 36 p. 497 Java; 36 p. 499 (*Fomes Korthalsii* (Lév.) Cooke) Java; 37 p. 6 (*Polyporus Hasskarlii* Lév.) Sarawak; 40 p. 116 Englisch Neu-Guinea; 40 p. 117 (*Polystictus Hasskarlii* Lév.) Englisch Neu-Guinea; 71 p. 26 Deutsch Neu-Guinea; 127 p. 190 (*Polyporus Hasskarlii* Lév.) Java; 127 p. 191 (*Polyporus Korthalsii* Lév.) Sumatra; 128 p. 604 (*Polyporus Hasskarlii* Lév.) Java; 128 p. 600 (*Polyporus sideroides* Lév.) Sumatra; 128 p. 604 (*Polyporus Korthalsii* Lév.) Sumatra; 131g p. 161 (*Polyporus Korthalsii* Lév.) Java; 133 p. 3 (*Polyporus Hasskarlii* Jungh.) Java; 95c p. 38—39 (*F. Korthalsii* (Lév.) Cooke) Java; 133 p. 5 (*Polyporus sideroides* Korth.) Java; 133a p. 253 (*Fomes pullus*) Java; 133a p. 281 (*Fomes Hasskarlii*) Java; 133a p. 277, 282 (*Fomes Korthalsii*) Java; 144 (*Polyporus pullus* Mont. et Berk.) Java; 144 (*Polyporus Korthalsii* Lév.) Java; 163 p. 113 (*Xanthochrous Korthalsii* Lév.) Java; 214 p. 43 Deutsch Neu-Guinea; 273 (*Polyporus Korthalsii* Lév.) Java; 273 (*Polyporus pullus* Mont. et Berk.) Java; L.
1307. *F. perpusillus* (Pers.) 133 p. 4 Java.
1308. *F. piceus* Ces. 37 p. 5 Sarawak; 133a p. 284 Borneo.
1309. *F. polyzonus* (Pers.) 133a p. 269—270 Java.
1310. *F. pusiolus* Ces. 36 p. 494 Java; 37 p. 6 Sarawak.  
*F. pyrrocreas* Cooke 39 p. 11 Englisch Neu-Guinea; 40 p. 117 Englisch Neu-Guinea.
1311. *F. rimosus* (Berk.) 10 p. 163 (*Polyporus rimosus*) Borneo; 70 p. 219 Java; 76 p. 10 Java.
1312. *F. roseoporus* (Pat.) 133a p. 215 Java; 163 p. 111 Java; B. (*Polyporus roseoporus* Pat.)
1313. *F. rufo-flavens* Berk et Curt. 37 p. 5 Sarawak; 133a p. 278 (*Fomes canalicatus* Pat.) Java.

- F. sanguinarius* Klotzsch 37 p. 6 Sarawak.
1314. *F. scalaris* Berk. 40 p. 116 Englisch Neu-Guinea; 133a p. 238 Fig. 585 Java.
1315. *F. semitosus* Berk. 4 p. 334 Java; 37 p. 5 Sarawak; 206 p. 15 Java; 213 Java.
1316. *F. senex* Nees 40 p. 116 Englisch Neu-Guinea; 133a p. 259 Fig. 598 Java; 138 p. 121 Englisch Neu-Guinea.
1317. *F. subtornatus* Murr 133a p. 269 Java.  
*F. superpositus* Berk. 40 p. 116 Englisch Neu-Guinea.
1318. *F. testaceo-fuscus* Bres. 36 p. 498 Java.
1319. *F. ulmarius* Fr. 36 p. 496 Java.
1320. *F. velutinus* (Pers.) Bres. 36 p. 498 Java; 37 p. 6 Sarawak; 107 p. 59 (*Polyporus velutinus*) Java; 142 p. 315 (*Polyporus velutinus* Pers.) Java.
1321. *F. velutinus* (Pers.) Bres. var. *stratosus* Jungh. 107 p. 59 (*Polyporus velutinus* var. *stratosus* Jungh.) Java.
1322. *F. velutinus* (Pers.) Bres. var. *lutescens* Pers. 127 p. 186 (*Polyporus velutinus* var. *lutescens* Pers.) Java; 128 p. 602 (*Polyporus velutinus* var. *lutescens* Pers.) Java.
1323. *F. zelandicus* Cooke 36 p. 497 Java.
1324. *Ganoderma amboinense* (Lam.) Pat. 10 p. 162 (*Polyporus amboinensis* Fr.) Borneo; 33 p. 238 Java; 34 p. 549 Borneo; 70 p. 219 (*Fomes amboinensis* (Lam.) Fr.) Java, N. Celebes, Deutsch Neu-Guinea; 71 p. 26 Deutsch Neu-Guinea; 76 p. 10 (*Fomes amboinensis* (Linn.) Fr.) Java, N. Celebes, Holländisch Neu-Guinea; 76 p. (47) 145 (*Fomes amboinensis* (Lam.) Fr.) Java; 83 p. 65 (*Fomes amboinensis* (Lam.)) Java; 107 p. 67 (*Polyporus amboinensis* Fr.) Java; 127 p. 182 (*Polyporus amboinensis* Fr.) Java; 141a p. 176 (*Polyporus amboinensis* Fr.) Java; 142 p. 316 (*Polyporus amboinensis* Fr.) Java 163 p. 113 Java; 204 p. 128 Taf. LVII Fig. 1—3 und E (*Fungus elatus cochlearis*) Ambon; 214 p. 41 (*Fomes amboinensis* (Lam.) Fr.) Deutsch Neu-Guinea; 220 p. 3 (*Polyporus amboinensis* Fr.) Deutsch Neu-Guinea; 273 (*Polyporus amboinensis* Nees.) Java; B.
1325. *G. amboinense* (Lam.) Pat. var. *Pisachapani* Nees. 48a p. 1—8 Taf. (*Polyporus Pisachapani* Nees) Java; 67a p. 304 (*Polyporus Pisachapani* Nees) Java; 107 p. 68 (*Polyporus amboinensis* var. *Pisachapani* Nees) Java; 131g p. 107 (*Ganoderma Pisachapani*) Java; 271 p. 387 (*Polyporus Pisachapani* Nees) Java.
1326. *G. applanatum* (Fr.) Bres. 36 p. 502 Java; 10 p. 163 (*Polyporus applanatus* Fr.) Borneo; 47 p. 67 (*Fomes applanatus* (Pers.)) Krakatau; 134 p. 965 (*Fomes applanatus*) Krakatau.
1327. *G. asperulatum* Murrill 34 p. 549 Borneo.



1328. *G. australe* Fr. 10 p. 163 (*Polyporus australis* Fr.) Borneo; 11 p. 44 (*Polyporus australis* var. *applanata*) Ternate; 40 p. 116 (*Fomes australis*) Englisch Neu-Guinea; 70 p. 219 (*Fomes australis* Fr.) Java, Bonin eil.; 71 p. 26 Deutsch Neu-Guinea; 74 p. 499 (*Fomes australis* Fr.) Deutsch Neu-Guinea; 76 p. 10 (*Fomes australis* Fr.) Java, Celebes; 127 p. 189 (*Polyporus australis* Fr.) Java; 128 p. 603 (*Polyporus australis* Fr.) Java; 128 p. 603 (*Polyporus dubius* Jungh.) Java; 133a p. 283 (*Fomes australis* Fr.) Java; 138 p. 120 (*Fomes australis* Sacc.) Borneo; 141a p. 179 (*Polyporus australis* Fr.) Java; 144 (*Polyporus australis*) Java; 163 p. 114 Java; 214 p. 41 (*Fomes australis* Fr.) Deutsch Neu-Guinea; 273 (*Polyporus australis* Fr.) Java.
- G. cervinum* Bres. 219 p. 249—250 Taf. I A Deutsch Neu-Guinea.
1329. *G. cochlear* (Nees) Murr. 26 (*Polyporus Cochlear* Blume et Nees.) Java; 131g. p. 103 Java; 273 (*Polyporus cochlear* Nees) Java; B; L.
1330. *G. fasciatum* Lév. 163 p. 114 Java.
1331. *G. gibbosum* (Nees) Pat. 26 (*Polyporus gibbosus* Nees) Java; 107 p. 66 (*Polyporus gibbosus* Nees) Java; 134 p. 951 (*Polyporus gibbosus*) Java; 142 p. 316 (*Polyporus gibbosus* Nees) Java; 163 p. 114 Java.
- 1331a. *G. gibbosum* (Nees) Pat. var. *pulchella* 36 p. 501 Java.
1332. *G. Höhnelianum* Bres. 36 p. 502 Java.
1333. *G. javanicum* Lév. 131g p. 109 Java; 163 p. 112 (*Phaeolus Javanicus* Pat.) Java; 163 p. 113 Taf. XXIV Fig. 8—10 (*Xanthochrous Javanicus* Pat.) Java.
1334. *G. laccatum* Pat. 36 p. 500 Java; 163 p. 114 Java.
- G. Lauterbachii* Hennings 74 p. 499 Deutsch Neu-Guinea; 214 p. 42 (*Fomes Lauterbachii* Henn.) Deutsch Neu-Guinea.
1335. *G. leucophaeum* (Mont.) 134 p. 951 Java.
1336. *G. Lingua* (Nees) 26 (*Polyporus lingua* Nees) Java; 37 p. 4. (*Polyporus Lingua* Nees) Sarawak; 107 p. 66 (*Polyporus Lingua* Nees) Java; 131g p. 104 Fig. 399 Java, Sumatra, Neu-Guinea; 142 p. 316 (*Polyporus Lingua* Nees) Java; 273 (*Polyporus Lingua* Nees) Java.
1337. *G. lucidum* (Leys.) Karst. 10 p. 162 (*Polyporus lucidus* Fr.) Borneo; 33 p. 238 Java; 40 p. 116 (*Fomes lucidus* Fr.) Englisch Neu-Guinea; 138 p. 120 (*Polyporus lucidus* Fr.) Borneo; 144 (*Polyporus lucidus* Fr.) Java; 163 p. 114 Java; 185 (*Polyporus lucidus* Leys.) Java; 197a p. 213 Fig. 1 (*Polyporus lucidus* Leys.) Java; 214 p. 42 (*Fomes lucidus* (Leys.) Fr.) Deutsch Neu-Guinea; 220 p. 3 (*Polyporus lucidus* Fr.) Deutsch Neu-Guinea; 273 (*Polyporus lucidus* Pers.) Java; B.
1338. *G. lucidum* (Leys.) Karst var. *japonicum* Fr. 36 p. 500 Java.

- G. macer* Berk. 221 Timor.
1339. *G. multiplicatum* (Mont.) Pat. 36 p. 500 Java.
1340. *G. nigricans* Fr. 142 p. 315 (*Polyporus nigricans* Fr.) Java; 271 p. 386 (*Polyporus nigricans* Fr.) Java.
- G. nitens* Fr. 221 Timor.
- G. nutans* Fr. 71 p. 26 Deutsch Neu-Guinea; 214 p. 42 (*Fomes nutans*) Deutsch Neu-Guinea.
1341. *G. oroleucum* Pat. et Har. 107 p. 63 (*Polyporus tropicus* Jungh.) Java; 132 p. 4—8 (*Polyporus tropicus* Jungh.) Java; 133b p. 370 (*Polyporus tropicus*) Java; 133b p. 383 Java; 142 p. 315 (*Polyporus tropicus* Jungh.) Java; 167 p. 118 Java.
- G. ochrolaccatum* (Mont.) Pat. var. *cornucopiae* Hennings 68 p. 6—7 Deutsch Neu-Guinea; 71 p. 26 Deutsch Neu-Guinea.
1342. *G. placopum* (Lév.) 129a p. 124 (*Polyporus placopus* Lév.) Java; 131g p. 105 Java; 144 (*Polyporus placopus*) Java; L.
1343. *G. praetervisum* (Pat.) 70 p. 219 (*Fomes praetervisum* (Pat.) Sumatra; 76 p. 10 (*Fomes praetervisum* (Pat.) Sacc.) Sumatra; 214 p. 43 (*Fomes praetervisum* Pat.) Deutsch Neu-Guinea.
- G. praetervisum* Pat. forma *mesopoda* Pat. 71 p. 27 Deutsch Neu-Guinea.
1344. *G. rivulosum* Pat. et Har. 131g. p. 111 (*Amaurodermus rivulosus*) Java; 167 p. 119 Fig. 1 Java.
1345. *G. rugosum* (Nees) Pat. 26 (*Polyporus rugosus* Nees) Java; 33 p. 238 Java; 40 p. 116 (*Fomes rugosus* Nees) Englisch Neu-Guinea; 138 p. 120 (*Fomes rugosus* Sacc.) Borneo; 163 p. 114 Java; 36 p. 500 Java; 107 p. 72 (*Polyporus rugosus* Nees) Java.
1346. *G. semilaccatum* (Berk.) 127 p. 193 (*Polyporus rhodophaeus* Lév.) Java; 128 p. 603—604 (*Polyporus rodophaeus* Lév.) Java; 131g p. 129 (*Lignosus rhodophaeus*) Java; 133 p. 5 Java; 133b. p. 385 Java; L.
1347. *G. testaceum* (Lév.) Pat. 36 p. 501 Java.
1348. *G. tornatum* (Pers.) Bres. 36 p. 502 Java; 176a p. 173 (*Polyporus tornatus*) Rawak.
1349. *G. triviale* Bres. 36 p. 501 Java.
1350. *G. umbrinum* Bres. 36 p. 501 Java.
1351. *Polyporus abnormis* Lév. 127 p. 186—187 Java; 128 p. 602 Java.
1352. *P. aculeatus* Lév. 129a p. 137 Java; 144 Java; 273 Java.
1353. *P. adustus* (Willd.) Fr. 36 p. 494 Java; 219 p. 249 Deutsch Neu-Guinea.
1354. *P. Agaricon* Zoll. 131g. p. 145 Java.
1355. *P. albo-marginatus* Zipp. 127 p. 191 Java; 128 p. 604 Java.

1356. *P. anebus* Berk. 10 p. 163 Borneo; 36 p. 495—496 (*Polyporus subpruinatus* Bres.) Java; 40 p. 116 Englisch Neu-Guinea; 74 p. 500 (*Polystictus subpictilis* Hennings) Deutsch Neu-Guinea; 107 p. 54 Fig. 29 (*Polyporus bicolor* Jungh.) Java; 127 p. 188 (*Polyporus vulneratus* Lév.) Java; 128 p. 603 (*Polyporus vulneratus* Lév.) Java; 132 p. 2 (*Polyporus bicolor* Jungh.) Java; 133b p. 387 (*Polyporus subpictilis* Henn.) Java; 133b. p. 387 (*Polyporus subpruinatus* Bres.) Java; 133b. p. 388 (*Polyporus vulneratus* Lév.) Java; 142 p. 314 (*Polyporus bicolor* Jungh.) Java; 214 p. 49 (*Polystictus subpictilis* Hennings) Deutsch Neu-Guinea.
1357. *P. annularis* Fr. 36 p. 493 Java; 107 p. 53 Fig. 28 (*Polyporus annulatus* Jungh.) Java; 131g p. 131 Fig. 428 (*Polyporus annulatus*) Java; 131g p. 145 Java; 132 p. 2 (*Polyporus annulatus* Jungh.) Java; 142 p. 314 (*Polyporus annulatus* Jungh.) Java.
1358. *P. arcuatus* (Zoll.) Pat. 144 (*Boletus arcuatus* Zoll.) Java; 161 p. 256 Holländisch Neu-Guinea; 271 p. 388 (*Boletus arcuatus* Zoll.) Java; 273 (*Boletus arcuatus* Zoll.) Java.
1359. *P. arcularius* (Batsch.) Fr. 34 p. 549 Borneo; 107 p. 72 Fig. 37 (*Polyporus umbilicatus* Jungh.) Java; 131g p. 179 (*Polyporus umbilicatus* Jungh.) Java; 132 p. 5 (*Polyporus umbilicatus* Jungh.) Java; 142 p. 316 (*Polyporus umbilicatus* Jungh.) Java; 221 (*Polyporus umbilicatus* Jungh.) Timor.
1360. *P. arenatus* Lloyd 131g p. 126 Holländisch Neu-Guinea.
1361. *P. atypus* Lév. 40 p. 116 Englisch Neu-Guinea; 127 p. 184 Java; 128 p. 601 Java; 131g p. 145 Java; 133 p. 2 Java.
1362. *P. auriscalpium* Pers. 10 p. 162 Borneo.
1363. *P. baccatus* Pers. 273 Java
1364. *P. bataviensis* Holterm. 96 p. 106 Taf. XI Fig. 4a-b Java.  
*P. Beccarianus* Ces. 37 p. 4 Sarawak; 131g p. 187 Borneo.  
*P. betulinus* Fries. 138 p. 121 Englisch Neu-Guinea.
1365. *P. Blanchetianus* Mont. 47 p. 67 Verlateneiland; 134 p. 965 Verlateneiland.
1366. *P. bogoriensis* Holterm. 96 p. 94—95, 110 Taf. IX Fig. 1—8 Java.
1367. *P. Boucheanus* Fr. 10 p. 162 Borneo.
1368. *P. caesius* (Schr.) Fr. 36 p. 493—494 Java.
1369. *P. canaliculatus* Pat. 165 p. 153 Java.
1370. *P. carneus* Blume et Nees 26 Java; 36 p. 496 (*Fomes carneus* Bl. et Nees) Java; 107 p. 59 Java; 107 p. 63 (*Polyporus punctatus* Jungh.) Java; 132 p. 4 (*Polyporus punctatus* Jungh.) Java; 133a p. 284 (*Fomes punctatus* Jungh.) Java; 142 p. 315 Java; 142 p. 316 (*Polyporus punctatus* Jungh.) Java; 144 Java; 271 p. 386 Java; 273 Java.
1371. *P. caudicinus* (Schaeff.) Schröt. 76 p. 10 (47) 145 Java.

- P. ciliatus* Fr. 214 p. 43 Deutsch Neu-Guinea.
1372. *P. cinerascens* Lév. 37 p. 7 Sarawak; 127 p. 184 Java; 128 p. 601 Java; 133 p. 3 Java.
1373. *P. cinnabarinus* Fr. 67a p. 305 Java; 127 p. 189 Sumatra; 128 p. 603 Sumatra; 220 p. 3 Deutsch Neu-Guinea.
1374. *P. citrinus* Zoll. 67a p. 304 Java.
1375. *P. cohaerens* Lév. 129a p. 132 Java; 144 Java; 273 Java.
1376. *P. concrescens* Mont. 36 p. 495 Java; 135 p. 1015 Verlateneiland.
1377. *P. contractus* Berk. 273 Java.  
*P. cremorinus* Ces. 37 p. 5 Sarawak.
1378. *P. croceopallens* Lloyd 133b p. 331 Java.  
*P. crocitinctus* Berk. et Curt. 37 p. 6 Sarawak.  
*P. cuticularis* Fr. 40 p. 116 Englisch Neu-Guinea.
1379. *P. decrescens* Zoll. 67a. p. 304—305 Java; 131g. p. 145 Java; 271 p. 387 Java.  
*P. demissus* Berk. 40 p. 116 Englisch Neu-Guinea.
1380. *P. dermatodes* Lév. 37 p. 6 Sarawak; 107 p. 45 Fig. 24 (*Polyporus cervino-gilvus* Jungh.) Java; 132 (*Polyporus cervino-gilvus* Jungh.) Java; 142 p. 313 (*Polyporus cervino-gilvus* Jungh.) Java.
1381. *P. dermoporus* Pers. 176a p. 170 Rawak.  
*P. dichrous* Fr. 71 p. 27 Deutsch Neu-Guinea; 214 p. 44 Deutsch Neu-Guinea; 219 p. 249 Deutsch Neu-Guinea.
1382. *P. Dickensii* Berk. 36 p. 493 Java.
1383. *P. dictyopus* Mont. 36 p. 492 Java.
1384. *P. discifer* Pat. 131g. p. 145 Java; 163 p. 111 (*Leucoporus discifer* Pat.) Java; B.
1385. *P. conchoides* Mont. 133b. (*Thelephora doloda* Lév.) Java.
1386. *P. Dozyanus* Lév. 133b. p. 348 Java.
1387. *P. durus* Jungh. 107 p. 62 Java; 132 p. 3 Java; 133b p. 341 Java; 142 p. 315 Java.
1388. *P. effusus* Lév. 273 Java.
1389. *P. elatinus* Berk. 134 p. 951 Java.  
*P. eriopus* Ces. 37 p. 4 Sarawak.
1390. *P. eurocephalus* Berk. et Br. 36 p. 493 Java.  
*P. evolutus* Berk. et Cooke 71 p. 27 Deutsch Neu-Guinea; 214 p. 44 Deutsch Neu-Guinea.
1391. *P. fasciatus* Fr. 273 Java.  
*P. flabellato-lobatus* Hennings 74 p. 500 Deutsch Neu-Guinea; 214 p. 44 Deutsch Neu-Guinea.
1392. *P. floccosus* Jungh. 107 p. 49 Fig. 27 Java; 132 p. 3 Java; 142 p. 313 Java.
1393. *P. floccosus* Jungh. var. *solitaria* Jungh. 107 p. 50 Java.
1394. *P. frondosus* (Schäff.) 144 (*Boletus frondosus* Schäff.) Java.
1395. *P. fulvellus* Bres. 133b p. 370 Java.

1396. *P. fulvus* Jungh. 37 p. 5 Sarawak; 273 Java.
1397. *P. fusco-purpureus* (Boud.) 176a p. 172—173 Rawak.
1398. *P. gilvus* Schwein. 36 p. 495 Java; 37 p. 6 (*Polyporus caesiellus* Ces.) Sarawak; 37 p. 8 (*Favolus auriculaeformis* Ces.) Sarawak; 71 p. 27 Deutsch Neu-Guinea; 74 p. 499 Deutsch Neu-Guinea; 76 p. (47) 145 Java; 127 p. 192 (*Polyporus trachodes* Lév.) Java; 127 p. 194 (*Polyporus auriculaeformis* Jungh.) Java; 128 p. 604 (*Polyporus trachodes* Lév.) Java; 128 p. 605 (*Polyporus auriculaeformis* Jungh.) Java; 133 p. 5 (*Polyporus trachodes*) Java; 133 p. 2 (*Polyporus auriculaeformis* Jungh.) Java; 133b p. 376 (*Polyporus caesiellus* Ces.) Borneo; 133b p. 388 (*Polyporus trachodes* Lév.) Java; 214 p. 45 Deutsch Neu-Guinea.
1399. *P. Goethartii* Bres. 35 p. 75 Java; 133b p. 345 Java.  
*P. gogolensis* Hennings 71 p. 27 Deutsch Neu-Guinea; 133b p. 379 Deutsch Neu-Guinea; 214 p. 44 Deutsch Neu-Guinea.
1400. *P. grammocephalus* Berk. 33 p. 238 Java; 37 p. 5 Sarawak; 40 p. 115 Englisch Neu-Guinea; 47 p. 67 Krakatau; 71 p. 28 Deutsch Neu-Guinea; 74 p. 500 Deutsch Neu-Guinea; 76 p. (47) 145 Java; 83 p. 65 Java; 134 p. 965 Krakatau; 135 p. 1015 Verlateneiland; 166 p. 187 Java; 214 p. 44 Deutsch Neu-Guinea; 221 Timor; 273 Java.
1401. *P. hirto-lineatus* Pat. 133g p. 145 Java; 163 p. 111 (*Leucoporus hirto-lineatus* Pat.) Java.
1402. *P. hypoxanthus* Bres. 36 p. 494 Java.
1403. *P. immaculatus* Lloyd 133b p. 299—300 Fig. 637 Neu-Guinea.
1404. *P. incompletus* Ces. 37 p. 5 Sarawak; 131g p. 145 Borneo.  
*P. isidioides* Berk. 40 p. 116 Englisch Neu-Guinea.
1405. *P. Janseanus* Hennings et Nyman 76 p. 11 Java.
1406. *P. Junghuhnii* Fr. 36 p. 496 Java; 107 p. 52 (*Polyporus fusco-albus* Jungh.) Java; 132 p. 3 (*Polyporus fusco-albus* Jungh.) Java; 142 p. 314 (*Polyporus fusco-albus* Jungh.) Java.
1407. *P. lacer* Sacc. 131g p. 146 Java.
1408. *P. lateralis* Pers. 176a p. 175 Rawak.
1409. *P. leptopus* Pers. 176a p. 169 Rawak.
1410. *P. Lévèillei* Cooke 131g. p. 147 Java.
1411. *P. lichenoides* Mont. 144 Java; 273 Java.
1412. *P. macroporus* Lév. 133b. p. 382 Java.
1413. *P. manubriatus* Lév. 131g p. 145 Sumatra; 273 Sumatra.
1414. *P. melaenus* Lév. 129a p. 131 Java; 144 Java; 133b p. 358—359 Java; 273 Java.
1415. *P. melaleucus* Bres. 36 p. 492 Java.
1416. *P. microscopicus* Jungh. 107 p. 52 Java; 132 p. 4 Java; 133b. p. 382 Java; 142 p. 314 Java.

1417. *P. minimus* Jungh. 107 p. 64 Java; 142 p. 316 Java.  
1418. *P. niveus* Jungh. 107 p. 48 Java; 132 p. 4 Java; 133b p. 383 Java; 142 p. 313 Java.  
1419. *P. notopus* Lév. 127 p. 194 Java; 128 p. 605 Java; 131g p. 47 Java; 133 p. 4 Java.  
1420. *P. novo-guineensis* Hennings 71 p. 28 Deutsch Neu-Guinea; 131g p. 170 Neu-Guinea; 1311 p. 87 und 90 Neu-Guinea; 214 p. 45 Deutsch Neu-Guinea.  
1421. *P. ochraceus* Pers. 127 p. 186 Sumatra; 128 p. 602 Sumatra.  
1422. *P. ostreiformis* Berk. 36 p. 494 Java; 36 p. 494 (*Polyporus griseus* Bres.) Java; 133b p. 379 (*Polyporus griseus* Bres.) Java.  
1423. *P. perversus* Lloyd 47 p. 67 Krakatau; 134 p. 965 Krakatau.  
1424. *P. Pilotae* Schw. 36 p. 496 (*Polyporus croceus* (Pers.) Fr.) Java.  
*P. plebejus* Berk. 71 p. 28 Deutsch Neu-Guinea; 214 p. 45 Deutsch Neu-Guinea.  
*P. portentosus* Berk. 40 p. 116 Englisch Neu-Guinea.  
1425. *P. princeps* (Pat.) 166 p. 187 (*Xanthochrous princeps* Pat.) Java.  
1426. *P. rigidulus* Lév. 273 Java; B.  
1427. *P. rubidus* Berk. 10 p. 163 Borneo; 40 p. 116 Englisch Neu-Guinea; 221 Timor.  
*P. russiceps* Berk. et Br. 40 p. 115 Englisch Neu-Guinea.  
*P. scruposus* Fr. 40 p. 116 Englisch Neu-Guinea.  
*P. subradiatus* Bres. 219 p. 247 Deutsch Neu-Guinea.  
1428. *P. sulphureus* (Bull.) Fr. 36 p. 493 (*Polyporus miniatus* Jungh.) Java; 70 p. 219 Java; 83 p. 65 Java; 107 p. 68 Fig. 34 (*Polyporus miniatus* Jungh.) Java; 131g p. 154 Fig. 45<sup>4</sup> (*Polyporus miniatus*) Java; 132 p. 4 (*Polyporus miniatus* Jungh.) Java; 134 p. 951 Java; 142 p. 316 (*Polyporus miniatus* Jungh.) Java; L.  
1429. *P. superpositus* (Berk.) 131g p. 122 Fig. 421 (*Lignosus superpositus*) Neu-Guinea.  
1430. *P. tephronotus* Berk. 36 p. 493 Java.  
1431. *P. tomohoniensis* Hennings 76 p. 11 Taf. I Fig. 4 Celebes.  
1432. *P. trigonus* Lév. 129a p. 125 Java; 144 Java; 273 Java.  
1433. *P. turbinatus* (Pat. et Har.) 167 p. 117 (*Leucoporus turbinatus*) Java.  
1434. *P. udus* Jungh. 108 p. 289 Fig. 5—6 Java; 131g. p. 145 Java; 142 Java.  
1435. *P. varius* Fr. 127 p. 183 Java; 128 p. 601 Java; 144 Java; 273 Java.  
1436. *P. varius* Fr. var. *javanicus* Lév. 76 p. (47) 145 Java; 129a p. 127 Java; 144 Java; 273 Java.  
1437. *P. varius* Fr. var. *purpurascens* Jungh. 273 Java.  
*P. verecundus* Berk. et Curt. 40 p. 116 Englisch Neu-Guinea.  
1438. *P. vibecinus* Fr. 76 p. 11 Java.

1439. *P. Warburgianus* Hennings 76 p. 10 Taf. I Fig. 3 Celebes; 131g p. 186 Fig. 492 Celebes.
1440. *P. Zollingeri* Lév. 129a p. 131 Java; 131g p. 179 Java; 144 Java; 273 Java.
1441. *P. zonalis* Berk. 36 p. 495 (*Polyporus rugulosus* Lév.) Java; 10 p. 163 Borneo; 37 p. 6 Sarawak; 40 p. 116 Englisch Neu-Guinea; 47 p. 67 Krakatau; 71 p. 26 (*Polyporus rugulosus* Lév.) Deutsch Neu-Guinea; 71 p. 28 Deutsch Neu-Guinea; 96 p. 95—96 Taf. IX Fig. 9 12 (*Polyporus polymorphus* Holterm.) Java; 127 p. 189 (*Polyporus rugulosus* Lév.) Java; 128 p. 603 (*Polyporus rugulosus* Lév.) Java; 133 p. 5 (*Polyporus rugulosus*) Java; 133b p. 385 (*Polyporus rugulosus* Lév.) Java; 133b. p. 384 (*Polyporus polymorphus* Holterm.) Java; 133b. p. 380 (*Polyporus* Holtermanni Sacc.) Java; 133b. p. 336 Fig. 675 Java; 144 (*Polyporus rugulosus* Jungh.) Java; 163 p. 110—111 (*Polyporus rugulosus* Lév.) Java; 214 p. 43 (*Fomes rugulosus* Lév.) Deutsch Neu-Guinea; 214 p. 45 Deutsch Neu-Guinea; 219 p. 249 Deutsch Neu-Guinea; 221 Timor; 273 (*Polyporus rugulosus* Jungh.) Java; B. (*Polyporus rugulosus* Jungh.)
1442. *Poronidulus bivalvis* v. Höhnelt 95c. p. 36—38 Fig. 26 Java. *Lloydella Kalchbrennerii* (Mass.) Bres. 221 Timor.
1443. *L. papyracea* (Jungh.) Bres. 219 p. 251 Deutsch Neu-Guinea.
1444. *Polystictus affinis* Nees 10 p. 163 Borneo; 26 Java; 34 p. 550 Borneo; 36 p. 503 Java; 37 p. 5 (*Polyporus squamaeformis* Berk.) Sarawak; 40 p. 116 (*Polystictus squamaeformis* Berk.) Englisch Neu-Guinea; 40 p. 116 Englisch Neu-Guinea; 47 p. 67 Krakatau; 71 p. 30 Deutsch Neu-Guinea; 76 p. 12. p. (48) 146 Java; 83 p. 65 Java; 107 p. 69 Java; 127 p. 183 Java, Sumatra; 128 p. 601 Java, Sumatra; 131g p. 148 (*Polyporus squamaeformis* Berk.) Borneo; 131k (*Polystictus squamaeformis* Berk.) Borneo; 131k. p. 53 und 57 Fig. 340 Java; 134 p. 951 Java; 138 p. 131 Englisch Neu-Guinea; 141 p. 265 Holländisch Neu-Guinea; 142 p. 316 (*Polyporus affinis* Nees) Java; 144 (*Polyporus affinis* Nees) Java; 163 p. 110 (*Microporus affinis* Nees) Java; 214 p. 45 Deutsch Neu-Guinea; 219 p. 249 Deutsch Neu-Guinea; 273 Java; B. (*Polyporus affinis*).
1445. *P. affinis* Nees var. *malanopus* Jungh. 107 p. 70 Fig. 36 Java.
1446. *P. affinis* Nees var. *minor* 70 p. 220 Java.
1447. *P. anisopilus* (Lév.) Lloyd 127 p. 191 (*Polyporus anisopilus* Lév.) Java; 128 p. 604 (*Polyporus anisopilus* Lév.) Java; 133a p. 278 Java.
1448. *P. Blumei* Lév. 47 p. 67 Krakatau; 71 p. 30 (*Polystictus Kurzianus* Cooke) Deutsch Neu-Guinea; 127 p. 184 (*Polyporus dilatatus* Lév.) Java; 127 p. 185 Java; 127 p. 186 (*Boletus convolutus* Zipp.) Java; 127 p. 200 (*Hexagonia Blumei* Lév.) Java; 128 p. 601 (*Polyporus dilatatus* Lév.) Java; 128 p. 602 (*Polyporus Blumei*

- Lév.) Java; 128 p. 602 (*Polyporus convolutus* Zipp.) Java; 128 p. 607 (*Hexagonia Blumei* Lév.) Java; 144 (*Polyporus Blumei* Lév.) Java; 131g p. 134 Fig. 435 (*Polyporus Gaudichaudi*) Java; 131g p. 145 (*Polyporus dilatatus* Lév.) Java; 131g p. 146 (*Polyporus Kurzianus* Cooke) Java; 131i p. 44 (*Hexagonia Blumei*) Java; 133 p. 2—3 Java; 133 p. 3 (*Polyporus (Sector) dilatatus*) Java; 133 p. 3 (*Polyporus convolutus* Zipp.) Java; 134 p. 951 (*Polystictus dilatatus*) Java; 134 p. 965 Krakatau; 135 p. 1015 Verlateneiland; 214 p. 47 (*Polystictus Kurzianus* Cooke) Deutsch Neu-Guinea; 273 (*Polyporus Blumei* Lév.) Java.
1449. *P. carneo-niger* (Berk.) Cooke 36 p. 503 Java.
1450. *P. celebicus* Hennings 76 p. 12 Taf. I Fig. 5 Celebes.  
*P. cingulatus* Fr. 71 p. 29 Deutsch Neu-Guinea; 214 p. 46 Deutsch Neu-Guinea.
1451. *P. cinnamomeus* (Jacq.) Sacc. 36 p. 502 Java.
1452. *P. confertus* Lév. 127 p. 187 Java; 128 p. 603 Java; 133 p. 3 Java.
1453. *P. crenatus* Berk. 47 p. 67 Krakatau; 127 p. 184 Java, Sumatra; 128 p. 601 Java, Sumatra; 134 p. 965 Krakatau.
1454. *P. detonsus* Fr. 71 p. 29 Deutsch Neu-Guinea; 127 p. 185 (*Polyporus murinus* Lév.) Java; 127 p. 186 Java; 128 p. 602 Java; 128 p. 602 (*Polyporus murinus* Lév.) Java; 128 p. 602 (*Polyporus eximius* Blume) Java; 131g p. 147 (*Polyporus murinus* Lév.) Java; 133 (*Polyporus murinus*) Java; 214 p. 46 Deutsch Neu-Guinea.
1455. *P. discipes* (Berk.) Fr. 10 p. 163 (*Polyporus discipes* Berk.) Borneo; 36 p. 502 Java.
1456. *P. elongatus* (Berk.) Fr. 36 p. 503 Java; 40 p. 117 Englisch Neu-Guinea; 127 p. 185 Java; 128 p. 602 Java; 128 p. 602 (*Polyporus foliaceus* Jungh.) Java; 134 p. 951 Java; 163 p. 110 (*Coriolus elongatus* Berk.) Java; 273 (*Polyporus elongatus* Berk.) Soembawa; B. (*Polyporus elongatus*).
1457. *P. extensus* Berk. 43 p. 55 Java.  
*P. Feei* Fr. 40 p. 117 Englisch Neu-Guinea.
1458. *P. fibula* Fr. 36 p. 504 Java.
1459. *P. flabelliformis* (Klotzsch) 10 p. 163 (*Polyporus flabelliformis* Kl.) Borneo; 36 p. 503 Java; 37 p. 5 (*Polyporus flabelliformis* Klotzsch)-Sarawak; 40 p. 116 Englisch Neu-Guinea; 71 p. 30 Deutsch Neu-Guinea; 76 p. 12 Celebes; 76 p. (48) 146 Java; 131g p. 146 (*Polyporus eriopus* Ces.) Borneo; 214 p. 46 Deutsch Neu-Guinea.  
*P. flabelliformis* (Klotzsch) form. apoda 71 p. 30 Deutsch Neu-Guinea.  
*P. florideus* Berk. 71 p. 31 Deutsch Neu-Guinea; 214 p. 46 Deutsch Neu-Guinea.
1460. *P. fumigatus* Bres. 36 p. 503 Java.



1461. *P. funalis* Fr. 107 p. 61 Fig. 33 (*Polyporus Mons Veneris* Jungh.) Java; 131k p. 64 Fig. 353 (*Polyporus Mons Veneris* Jungh.) Java; 132 p. 4 (*Polyporus Mons Veneris* Jungh.) Java; 142 p. 315 (*Polyporus Mons Veneris* Jungh.) Java.
1462. *P. fuscus* Lév. 37 p. 9 (*Favolus transiens* Ces.) Sarawak; 71 p. 30 (*Polystictus cichoriaceus* Berk.) Deutsch Neu-Guinea; 71 p. 32 (*Cyclomyces fuscus* Fr.) Deutsch Neu-Guinea; 129a p. 137 (*Polyporus fuscus* Lév.) Java; 131k p. 62 Java; 131k p. 62 Fig. 350 (*Favolus transiens* Ces.) Java; 144 (*Polyporus fuscus* Lév.) Java; 163 p. 112 (*Cyclomyces Léveillei* Pat.) Java; 214 p. 46 (*Polystictus cichoriaceus* Berk.) Deutsch Neu-Guinea; 214 p. 52 (*Cyclomyces fuscus* Fr.) Deutsch Neu-Guinea; 219 p. 249 (*Polystictus cichoriaceus* Berk.) Deutsch Neu-Guinea; 273 (*Cyclomyces fuscus* Klotzsch) Java; 273 (*Polyporus fuscus* Lév.) Java; B (*Polyporus fuscus* Lév.).
1463. *P. gallopavonis* Berk. et Br. 37 p. 6 (*Polyporus confundens*) Sarawak; 76 p. (48) 146 Java; 131g p. 134 Java; 131g p. 146 (*Polyporus confundens* Ces.) Java.  
*P. glirinus* Kalchbr. 71 p. 30 Deutsch Neu-Guinea; 214 p. 47 Deutsch Neu-Guinea.
1464. *P. Hasseltii* Lév. 127 p. 187 (*Polyporus Hasseltii* Lév.) Java; 128 p. 603 (*Polyporus Hasseltii* Lév.) Java; 133 p. 3 (*Polyporus Hasseltii* Lév.) Java.  
*P. helvolus* Fr. 122 Timor.
1465. *P. hirsutus* Fr. 10 p. 163 (*Polyporus hirsutus* Fr.) Borneo; 40 p. 117 Englisch Neu-Guinea; 43 p. 55 Java; 134 p. 951 Java; 144 (*Polyporus hirsutus* Klotzsch) Java; 163 p. 110 (*Coriolus hirsutus* Fr.) Java; 214 p. 47 Deutsch Neu-Guinea; 273 (*Polyporus hirsutus* Klotzsch) Java; B. (*Polyporus hirsutus*).  
*P. hirsutus* Fr. forma tenuior 221 Timor.  
*P. Hostmanni* Berk. 40 p. 116 Englisch Neu-Guinea.
1466. *P. hydnoides* 47 p. 67 Krakatau.
1467. *P. hypothejus* (Kalchbr.) Cooke 36 p. 504 Java.
1468. *P. Libum* (Berk.) Cooke 36 p. 503 Java.  
*P. lilacino-gilvus* Berk. 71 p. 29 Deutsch Neu-Guinea; 214 p. 47 Deutsch Neu-Guinea.
1469. *P. lineatus* (Pers.) 176a (*Polyporus lineatus*) Molukken.
1470. *P. luteo-olivaceus* Berk. et Br. 135 p. 1015 Verlateneiland; 214 p. 47 Deutsch Neu-Guinea.
1471. *P. luteus* Blume et Nees 26 Java; 33 p. 238 Java; 71 p. 30 Deutsch Neu-Guinea; 76 p. (48) 146 Java; 107 p. 66 (*Polyporus luteus* Nees) Java; 131k p. 341 Java; 142 p. 316 (*Polyporus luteus* Nees) Java; 214 p. 47 Deutsch Neu-Guinea.  
*P. luteus* Blume et Nees forma cupreata Torrend 221 (*Polyporus luteus* Blume et Nees f. cupreata Torrend) Timor.

- P. malaiensis* Cooke 40 p. 116 Englisch Neu-Guinea.
1472. *P. meleagris* (Berk.) Cooke 36 p. 503 Java; 40 p. 116 Englisch Neu-Guinea.
1473. *P. membranaceus* (Swartz) Berk. 70 p. 220 Java; 76 p. 11, p. (47) 145 Java; 82 Java; 138 p. 120 Borneo.
1474. *P. Menziesii* Berk. 8. p. 378 Sumatra; 40 p. 116 Englisch Neu-Guinea; 131g p. 147 Sumatra.
1475. *P. modestus* Kunze 71 p. 29 Deutsch Neu-Guinea; 127 p. 183 (*Polyporus modestus* Fr.) Java; 128 p. 601 (*Polyporus modestus* Fr.) Java; 214 p. 47 Deutsch Neu-Guinea; 220 p. 3 (*Polyporus modestus* Kunze) Deutsch Neu-Guinea.
- P. mutabilis* Berk. et Cooke 71 p. 30 Deutsch Neu-Guinea; 214 p. 47 Deutsch Neu-Guinea.
1476. *P. nepalensis* Berk. 134 p. 951 Java.
- P. nephridius* Sacc. 40 p. 116 Englisch Neu-Guinea; 138 p. 121 Englisch Neu-Guinea.
1477. *P. nipponoides* Yasuda 47 p. 67 Krakatau.
1478. *P. oblectans* (Berk.) 163 p. 112 (*Xanthochrous oblectans* (Berk.); B.
1479. *P. obliquus* Masee 131g p. 132 (*Petaloides obliquus*) Neu-Guinea; 138 p. 122 Englisch Neu-Guinea.
- P. obstinatus* Cooke 40 p. 117 Englisch Neu-Guinea; 71 p. 29 Deutsch Neu-Guinea; 214 p. 48 Deutsch Neu-Guinea; 221 (*Polyporus obstinatus* Cooke) Timor.
1480. *P. obstinatus* Cooke var. *cornea* Pat. 36 p. 504 Java.
1481. *P. occidentalis* (Klotzsch) Sacc. 10 p. 163 (*Trametes occidentalis* Fr.) Borneo; 36 p. 504 Java; 40 p. 117 Englisch Neu-Guinea; 71 p. 28 Deutsch Neu-Guinea; 76 p. 11 Celebes; 83 p. 65 Java; 144 (*Polyporus occidentalis* Klotzsch) Java; 214 p. 48 Deutsch Neu-Guinea; 221 Timor; 273 (*Polyporus occidentalis* Klotzsch) Java.
- P. occidentalis* (Klotzsch) Sacc. forma *pleuropoda* Henn. 71 p. 29 Deutsch Neu-Guinea.
- P. occidentalis* (Klotzsch) Sacc. forma *mesopoda* Henn. 71 p. 29 Deutsch Neu-Guinea.
- P. ochrotinctus* Sacc. 138 p. 121 Englisch Neu-Guinea.
1482. *P. pellucida* Jungh. 132 p. 4 Java.
1483. *P. perdurans* (Kalchbr.) Bres. 36 p. 502 Java.
1484. *P. pergamenus* Fr. 127 p. 187 (*Polyporus splendens* Lév.) Java; 128 p. 602 (*Polyporus splendens* Lév.) Java; 133 p. 2 Java; 133 p. 5 (*Polyporus splendens* Lév.) Java.
- P. personatus* (Berk. et Br.) 37 p. 6 (*Polyporus personatus* Berk. et Br.) Sarawak.
- P. Peradeniae* Berk. et Br. 37 p. 6 (*Polyporus Peradeniae* Berk. et Br.) Sarawak.

- P. pinsitus* Fr. 221 Timor.
1485. *P. platypilus* Lév. 127 p. 192 (*Polyporus platypilus* Lév.) Java; 128 p. 605 (*Polyporus platypilus* Lév.) Java; 133 p. 4 (*Polyporus platypilus* Lév.) Java.
1486. *P. plicatus* Blume 127 p. 185 (*Polyporus plicatus* Blume) Java; 128 p. 601 (*Polyporus plicatus* Blume) Java; 133 p. 4 Java.
- P. pterygodes* Fr. 219 p. 249 Deutsch Neu-Guinea.
1487. *P. rasipes* Berk. 33 p. 239 Java; 36 p. 503 (*Polystictus obovatus* (Jungh.) Bres.) Java; 40 p. 117 Englisch Neu-Guinea; 107 p. 65 (*Polyporus obovatus* Jungh.) Java; 131g p. 141 Fig. 445 (*Polystictus obovatus*) Java; 132 p. 4 (*Polyporus obovatus*) Java; 142 p. 316 (*Polyporus obovatus* Jungh.) Java; 219 p. 249 (*Polystictus obovatus* (Jungh.) Bres.) Deutsch Neu-Guinea.
- P. rufo-cinerescens* Hennings 74 p. 501 Deutsch Neu-Guinea; 214 p. 48 Deutsch Neu-Guinea.
1488. *P. russogramme* Berk. 11 p. 45 Ternate; 40 p. 116 Englisch Neu-Guinea.
1489. *P. sacer* Fr. 71 p. 31 Deutsch Neu-Guinea; 144 (*Polyporus sacer* Fr.) Java; 273 (*Polyporus sacer* Fr.) Java.
1490. *P. sanguineus* (Linn.) Nees 9 p. 332 (*Polyporus sanguineus* Fr.) Java; 10 p. 163 (*Polyporus sanguineus* Fr.) Borneo; 34 p. 550 Java; 40 p. 116 Englisch Neu-Guinea; 47 p. 67 Krakatau; 67a p. 304 (*Polyporus sanguineus* Fr.) Java; 71 p. 28 Deutsch Neu-Guinea; 107 p. 56 (*Polyporus sanguineus* L.) Java; 122 Timor; 127 p. 132 (*Polyporus sanguineus* Fr.) Java, Sumatra; 134 p. 951 Java; 134 p. 965 Krakatau; 138 p. 121 Englisch Neu-Guinea; 141a p. 177—178 (*Polyporus sanguineus* Fr.) Java, Sumatra, Borneo; 142 p. 314 (*Polyporus sanguineus* Fr.) Java; 144 (*Polyporus sanguineus*) Java; 163 p. 110 (*Microporus sanguineus* Fr.) Java; 176a p. 170—171 (*Polyporus sanguineus*) Molukken; 214 p. 49 Deutsch Neu-Guinea; 219 p. 249 Deutsch Neu-Guinea; 271 p. 387 (*Polyporus sanguineus* Fr.) Java; 273 (*Polyporus sanguineus* Fr.) Java, Sumatra; B. (*Polyporus sanguineus*).
- P. scaber* F. 214 p. 49 Deutsch Neu-Guinea.
1491. *P. sideroides* Lév. 36 p. 495 (*Polyporus sideroides* Lév.) Java; 127 p. 182 (*Polyporus sideroides* Lév.) Sumatra; 163 p. 112 (*Xanthochrous sideroides* Lév.) Java; 144 (*Polyporus sideroides* Lév.) Java; 273 (*Polyporus sideroides* Lév.) Java.
1492. *P. stereinus* Berk. et Cooke 36 p. 495 (*Polyporus Liebmanni* Fr.) Java; 76 p. (47) 145 Java; 74 p. 591 Deutsch Neu-Guinea; 214 p. 49 Deutsch Neu-Guinea.
- P. submembranaceus* Berk. 138 p. 121 Englisch Neu-Guinea.

1493. *P. tabacinus* Mont. 36 p. 504 (*Polystictus spadiceus* (Jungh.) Cooke) Java; 40 p. 116 (*Polystictus microcyclus* Lév.) Englisch Neu-Guinea; 40 p. 116 (*Fomes spadiceus* Berk.) Englisch Neu-Guinea; 62 p. 11 Celebes; 76 p. (47) 145 Java; 107 p. 54 Fig. 30 (*Polyporus spadiceus* Jungh.) Java; 127 p. 188 (*Polyporus microcyclus* Zipp.) Java; 127 p. 188 (*Polyporus spadiceus* Jungh.) Java; 128 p. 603 (*Polyporus microcyclus* Zipp.) Java; 131i p. 45 (*Hexagona tabacina* Lév.) Java; 131k p. 62 (*Polystictus microcyclus* Lév.) Java; 131k p. 62 Fig. 347 (*Polystictus spadiceus* Jungh.) Java; 131k p. 62 Fig. 350 (*Hexagona tabacinus* Lév.) Java; 132 p. 4 (*Polyporus spadiceus*) Java; 133 p. 4 (*Polyporus microcyclus* Zipp.) Java; 142 p. 314 (*Polyporus spadiceus* Jungh.) Java; 219 p. 250 (*Hexagona tabacina* Lév.) Deutsch Neu-Guinea; 273 (*Hexagona tabacina* Lév.) Java; 273 (*Polyporus tabacinus* Mont.) Java.
1494. *P. tenuissimus* (Lév.) 127 p. 188 (*Polyporus tenuissimus* Lév.) Java; 128 p. 603 (*Polyporus tenuissimus* Lév.) Java; 133 p. 5 Java.
1495. *P. umbrinellus* Bres. 33 p. 239 Java.
1496. *P. unguiformis* (Lév.) 129a p. 138 (*Polyporus unguiformis* Lév.) Java; 144 (*Polyporus unguiformis* Lév.) Java; 273 (*Polyporus unguiformis* Lév.) Java.
1497. *P. venulosus* (Jungh.) 47 p. 67 (*Polyporus venulosus* Jungh.) Verlateneiland; 107 p. 57 (*Polyporus venulosus* Jungh.) Java; 132 p. 5 Java; 134 p. 67 (*Polyporus venulosus* Jungh.) Verlateneiland; 142 p. 314—315 (*Polyporus venulosus* Jungh.) Java; 144 (*Polyporus venulosus* Jungh.) Java; 273 (*Polyporus venulosus* Jungh.) Java.  
*P. versatilis* (Berk.) Sacc. 71 p. 29 Deutsch Neu-Guinea; 214 p. 49 Deutsch Neu-Guinea.
1498. *P. versicolor* (L.) Fr. 36 p. 504 Java; 76 p. (47) 145 Java; 107 p. 58 (*Polyporus versicolor* L.) Java; 127 p. 186 (*Polyporus versicolor* Fr.) Java; 134 p. 951 Java; 142 p. 315 (*Polyporus versicolor* Fr.) Java; 163 p. 110 (*Coriolus versicolor*) Java; 176a p. 174 (*Polyporus versicolor*) Rawak; 273 (*Polyporus versicolor*) Java; B (*Polyporus versicolor* Fr.)
1499. *P. versicolor* (L.) Fr. var. *undulatus* Jungh. 107 p. 58 (*Polyporus versicolor* var. *undulatus* Jungh.) Java.  
*P. vilis* (Ces.) 37 p. 6 (*Polyporus vilis* Ces.) Sarawak.
1500. *P. vinosus* (Berk.) 33 p. 239 Java; 36 p. 504 (*Polystictus badius* (Jungh.) Bres.) Java; 40 p. 116 (*Polyporus vinosus* Berk.) Englisch Neu-Guinea; 47 p. 67 (*Polyporus vinosus* Berk.) Verlateneiland; 129a p. 126 (*Polyporus tristis* Lév.) Java; 133b p. 342 Fig. 679 (*Polyporus vinosus*) Java; 133b p. 375 (*Polyporus badius* Jungh.) Java; 133b p. 388 (*Polyporus tristis* Lév.) Java; 134 p. 965 (*Polyporus vinosus* Berk.) Verlateneiland; 144 (*Polyporus badius* Jungh.) Java; 144 (*Polyporus tristis* Lév.) Java; 273 (*Polyporus tristis* Lév.) Java; 273 (*Polyporus badius* Jungh.) Java.

- P. virgineus* Fr. 40 p. 116 Englisch Neu-Guinea.
1501. *P. vittatus* Berk. 36 p. 503 Java; 221 Timor.
1502. *P. xanthopus* Fries 9 p. 331 (*Polyporus xanthopus* Fr.) Java; 26 (*Polyporus Katui* Ehrenb.) Java; 34 p. 549 Borneo; 37 p. 4—5 (*Polyporus polychrous* Ces. f. *mesopoda*) Sarawak; 40 p. 116 Englisch Neu-Guinea; 47 p. 67 Krakatau; 70 p. 221 Z. Celebes; 71 p. 31 Deutsch Neu-Guinea; 76 p. 12 Celebes; 76 p. (48) 146 Java; 83 p. 65 Java; 107 p. 70 (*Polyporus xanthopus* Fr.) Java; 134 p. 67 Krakatau; 135 p. 1015 Verlateneiland; 138 p. 120 Borneo; 138 p. 121 Englisch Neu-Guinea; 141a p. 175—176 (*Polyporus xanthopus* Fr.) Java; 142 p. 316 (*Polyporus xanthopus* Fr.) Java; 214 p. 49—50 Deutsch Neu-Guinea; 220 p. 3 (*Polyporus xanthopus* Fr.) Timor; 221 (*Polyporus xanthopus* Fr.) Timor.
1503. *P. xanthopus* Fr. var. *rhodopus* Lév. 144 (*Polyporus xanthopus* Fr. var. *rhodopus* Lév.) Java; 163 p. 110 (*Microporus xanthopus* Fr. var. *rhodopus* Lév.) Java; 273 (*Polyporus xanthopus* var. *rhodopus* Lév.) Java.
1504. *P. xanthopus* Fr. var. *leucopus* Jungh. 107 p. 71 (*Polyporus xanthopus* Fr. var. *leucopus* Jungh.) Java.
1505. *P. zonatus* Fr. 36 p. 504 Java.  
*P. zonatus* Fr. var. *pygmaea* 37 p. 6 (*Polyporus zonatus* Fr. var. *pygmaea*) Sarawak.
1506. *Trametes acuta* Lév. 127 p. 196 Sumatra; 128 p. 606 Sumatra; 133 p. 2 Java.
1507. *T. albida* (Lév.) 33 p. 239 Java; 273 (*Polyporus albidus* Lév.) Java.
- 1507a. *T. asper* (Jungh.) 107 p. 60 Fig. 31 (*Polyporus asper* Jungh.) Java; 132 p. 2 (*Polyporus asper*) Java; 142 p. 315 (*Polyporus asper* Jungh.) Java; 144 (*Polyporus asper* Jungh.) Java; 273 (*Polyporus asper*) Java.
1508. *T. aspera* Lév. 40 p. 115 Englisch Neu-Guinea; 47 p. 67 Krakatau, Verlateneiland; 134 p. 965 Krakatau, Verlateneiland; 163 p. 109 (*Lenzites aspera* Klotzsch) Java; 214 p. 51 (*Lenzites aspera* Klotzsch) Deutsch Neu-Guinea; B (*Lenzites aspera* Kl.).  
*T. aspera* Lév. form. *subglabra* 71 p. 34 (*Lenzites aspera* form. *subglabra*) Deutsch Neu-Guinea.
1509. *T. aurora* (Ces.) 37 p. 5 (*Polyporus aurora* Ces.) Sarawak; 131g p. 145 (*Polyporus aurora* Ces.) Borneo.
1510. *T. badia* Berk. 10 p. 163 Borneo.  
*T. colliculosa* Berk. 37 p. 7 Sarawak.
1511. *T. corrugata* (Pers.) Bres. 129a p. 136 (*Polyporus corrugatus* de Vriese et Lév.) Java; 176a p. 172 (*Polyporus corrugatus*) Rawak; 219 p. 250 Deutsch Neu-Guinea; 40 p. 115 (*Lenzites corrugata* Kl.) Englisch Neu-Guinea.
1512. *T. crenulata* Berk. 134 p. 951 Java.

- T. discolor* Sacc. et Berl. 221 Timor.  
*T. elegans* (Spreng) Fr. 71 p. 31 Deutsch Neu-Guinea; 40 p. 115 Englisch Neu-Guinea; 214 p. 50 Deutsch Neu-Guinea.  
*T. fibrosa* Fr. 71 p. 31 Deutsch Neu-Guinea; 214 p. 50 Deutsch Neu-Guinea.  
 1513. *T. fuscella* Lév. 47 p. 68 Krakatau; 133 p. 2 Java; 134 p. 965 Krakatau; 135 p. 1015 Verlateneiland; 273 (*Polyporus fuscellus* Lév.) Flores.  
 1514. *T. glabra* Lév. 33 p. 239 Java; 221 Timor.  
 1515. *T. heteropora* Mont. 134 p. 951 Java.  
 1516. *T. hispidula* Berk. et Curt. 134 p. 951 Java.  
 1517. *T. hydnoides* (Swartz) Fr. 70 p. 221 Celebes; 71 p. 31 Deutsch Neu-Guinea; 76 p. 12 Celebes; 127 p. 195 Java, Sumatra; 128 p. 605 Java, Sumatra; 214 p. 50 Deutsch Neu-Guinea.  
 1518. *T. incana* (Lév.) Quél. 221 Timor; 273 (*Polyporus incanus* Lév.) Java.  
*T. lactinea* Berk. 40 p. 117 Englisch Neu-Guinea; 138 p. 122 Englisch Neu-Guinea.  
*T. ludificans* Ces. 37 p. 7 Sarawak.  
 1519. *T. Meyenii* Klotzsch 47 p. 68 Krakatau; 134 p. 965 Krakatau.  
 1520. *T. Moritzianus* (Lév.) 129a p. 130 (*Polyporus Moritzianus* Lév.) Java; 144 (*Polyporus Moritzianus* Lév.) Java; 273 (*Polyporus Moritzianus* Lév.) Java.  
*T. Mulleri* Berk. 40 p. 117 Englisch Neu-Guinea.  
 1521. *T. parvula* Bres. 36 p. 506 Java.  
 1522. *T. Perrottetii* Lév. 127 p. 195 Java; 128 p. 605 Java.  
 1523. *T. Persoonii* Fr. 10 p. 163 Borneo; 37 p. 7 (*Daedalea sanguinea* Klotzsch) Sarawak; 40 p. 117 (*Polystictus Persoonii* Fr.) Englisch Neu-Guinea; 47 p. 68 Krakatau, Verlateneiland; 70 p. 219 (*Polystictus Persoonii* Fr.) Java; 71 p. 28 (*Polystictus Personii* Fr.) Deutsch Neu-Guinea; 74 p. 500 (*Polystictus Persoonii* Fr.) Deutsch Neu-Guinea; 76 p. 11 (*Polystictus Persoonii* Fr.) Java, Celebes; 107 p. 51 (*Polyporus indecorus* Jungh.) Java; 127 p. 198 (*Daedalea sanguinea* Klotzsch) Java, Sumatra; 128 p. 606 (*Daedalea sanguinea* Klotzsch) Java, Sumatra; 128 p. 606 (*Polyporus gonoporus* Jungh.) Java; 132 p. 3 (*Polyporus indecorus* Jungh.) Java; 134 p. 965 Krakatau, Verlateneiland; 135 p. 1015 Krakatau, Verlateneiland; 138 p. 122 (*Polystictus Persoonii* Sacc.) Englisch Neu-Guinea; 141a p. 186—187 (*Daedalea sanguinea* Klotzsch) Sumatra; 142 p. 314 (*Polyporus indecorus* Jungh.) Java; 163 p. 110 (*Trametes sanguinea* Klotzsch) Java; 214 p. 48 (*Polystictus Persoonii* Fr.) Deutsch Neu-Guinea.  
*T. Persoonii* Fr. f. *crassior* 221 Timor.  
*T. Persoonii* Fr. f. *resupinata* Henning 71 p. 28 Deutsch Neu-Guinea.

1524. *T. pusilla* (Pers.) 37 p. 4 (*Polyporus rhipidius* Berk.) Sarawak; 133 p. 5 (*Polyporus pusillus* Pers.) Java; 184 Java.  
*T. Rhizophorae* Reichardt 71 p. 31 Deutsch Neu-Guinea; 214 p. 50 Deutsch Neu-Guinea.  
*T. rhizomorpha* Berk. 221 Timor.
1525. *T. rigida* (Lév.) 127 p. 189 (*Polyporus rigidus* Lév.) Java; 127 p. 603 (*Polyporus rigidus* Lév.) Java; 133 p. 3 (*Polyporus rigidus*) Java.
1526. *T. serpens* Pers. 176a p. 173 Taf. 2 Fig. 2 Rawak.
1527. *T. similis* Bres. 36 p. 505 Java.  
*T. Sprucei* Berk. 40 p. 117 Englisch Neu-Guinea.
1528. *T. stereoides* (Fr.) Bres. 36 p. 506 Java.
1529. *T. tegularis* (Lév.) 129 p. 131 (*Polyporus tegularis* Lév.) Java; 144 (*Polyporus tegularis* Lév.) Java; 273 (*Polyporus tegularis* Fr.) Java.
1530. *T. Theae* Zimm. 262 p. 101 Fig. 1 Java; 264 p. 51 Java.
1531. *T. tuberculata* Bres. 36 p. 505 Java.
1532. *T. versatilis* Berk. 10 p. 163 Borneo; 37 p. 7—8 Sarawak; 127 p. 195 Java; 128 p. 605 Java; 141a p. 182—183 Fl. 138 Fig. 1 Java.
1533. *T. versiformis* (Berk.) 36 p. 492 (*Polyporus versiformis* Berk.) Java; 134 p. 951 Java.
1534. *T. vittata* Lév. 127 p. 196 Sumatra; 128 p. 606 Sumatra; 133 p. 5 Sumatra.
1535. *Daedalea citrina* Holterm. 96 p. 97 Taf. IX Fig. 20—22 Java.
1536. *D. flavida* Lév. 127 p. 198 Borneo; 127 p. 198 (*Daedalea lurida* Lév.) Java; 128 p. 606 Borneo; 128 p. 606 (*Daedalea lurida* Lév.) Java; 133 p. 3 Java; 133 p. 4 (*Daedalea lurida*) Java; 273 (*Polyporus lenziteus* Lév.) Sumatra.  
*D. glaberrima* Berk. et Curt. 138 p. 122 Englisch Neu-Guinea.
1537. *D. Höhneltii* Bres. 36 p. 507—508 Java;  
*D. imponens* Ces. 37 p. 7 Sarawak.  
*D. inconcinna* Berk. 40 p. 117 Englisch Neu-Guinea.  
*D. irpifioides* Hennings 74 p. 501 Deutsch Neu-Guinea; 214 p. 50 Deutsch Neu-Guinea.  
*D. lenzitiformis* Ces. 37 p. 7 Sarawak.
1538. *D. microzona* Lév. 144 Java; 129a p. 142 Java.  
*D. platypoda* Lév. 37 p. 7 Sarawak.
1539. *D. polyzona* (Pers.) 176a p. 171—172 (*Polyporus polyzonus* Pers.) Rawak.  
*D. pruinosa* Lév. 37 p. 7 Sarawak.
1540. *D. splendens* Lév. 133 p. 5 Java.
1541. *D. variabilis* Holt. 96 p. 96—97 Taf. I Fig. 13—19 Java.
1542. *Lenzites albolutea* Lloyd 134 p. 951 Java.
1543. *L. applanata* Fr. 40 p. 115 Englisch Neu-Guinea; 129a p. 122 Java; 214 p. 51 Deutsch Neu-Guinea.  
*L. brunneola* Berk. 37 p. 4 Sarawak.

1544. *L. deplanata* (Klotzsch) Fr. 40 p. 115 Englisch Neu-Guinea; 144 (Daedalea deplanata Klotzsch) Java; 163 p. 110 Java; 273 (Daedalea deplanata Klotzsch) Java; B.
1545. *L. Junghuhnii* Lév. 127 p. 180 Java; 128 p. 600 Java; 133 p. 3 Java.
1546. *L. murina* Lév. 127 p. 180 Sumatra; 128 p. 600 Sumatra; 133 p. 4 Sumatra.
1547. *L. platyphylla* Lév. 40 p. 116 (*Polystictus Adami* Berk.) Englisch Neu-Guinea; 107 p. 65 (*Polyporus lacerus* Jungh.) Java; 127 p. 179 Java; 127 p. 197 (*Daedalea aulaxina* Lév.) Java; 128 p. 600 Java; 128 p. 606 (*Daedalea aulaxima* Lév.) Java; 131g p. 146 (*Polyporus lacerus* Jungh.) Java; 132 p. 3—4 (*Polyporus lacerus* Jungh.) Java; 133 p. 4 (*Daedalea platyphylla*) Java; 133 p. 2 (*Daedalea aulaxina*) Java; 134 p. 951 Java; 142 p. 316 (*Polyporus lacerus* Jungh.) Java; 163 p. 109 Java; 273 Java; B.
1548. *L. repanda* (Mont) Fr. 10 p. 162 Borneo; 34 p. 549 (*Lenzites Palisoti* Fr.) Borneo; 37 p. 4 Sarawak; 71 p. 33 Deutsch Neu-Guinea; 107 p. 73 Fig. 39 (*Daedalea indica* Jungh.) Java; 127 p. 180 Java; 128 p. 600 (*Daedalea indica* Jungh.), p. 600 (*Lenzites indica*) und p. 600 Java; 132 p. 3 (*Daedalea indica* Jungh.) Java; 142 p. 317 (*Daedalea indica* Jungh.) Java; 176a p. 168 (*Daedalea repanda*) Rawak; 214 p. 51, Deutsch Neu-Guinea; 220 p. 2 (*Lenzites Palisoti* Fr. var. *Azelii* Fr.) Deutsch Neu-Guinea; 221 (*Lenzites Palisoti* Fr.) Timor.
- L. repanda* (Mont.) Fr. form. *mesopoda minor* 71 p. 33 Deutsch Neu-Guinea.
1549. *L. striata* Fr. 10 p. 162 Borneo; 221 Timor.
- L. tenuis* Berk. 221 Timor.
1550. *L. variegata* Fr. 163 p. 109 Java; B.
1551. *Hexagonia albida* Berk. 37 p. 8 (*Hexagonia Cesatii* Berk.) Sarawak; 40 p. 117 und 118 (*Hexagonia favoloides* Cooke) Englisch Neu-Guinea; 70 p. 221 Sumatra; 71 p. 32 Deutsch Neu-Guinea; 76 p. 12 Sumatra; 131i p. 29—30 Fig. 313—314 (*Hexagonia Cesatii*) Borneo, p. 44 (*Hexagonia favoloides* Cooke) Neu-Guinea und p. 44 (*Hexagonia Cookei*) Neu-Guinea.
1552. *H. apiaria* Fr. 40 p. 177 Englisch Neu-Guinea; 71 p. 31 (*Hexagonia Wightii* Klotzsch) Deutsch Neu-Guinea; 76 p. 12 (*Hexagonia Wightii* (Klotzsch) Celebes; 127 p. 199 Java; 128 p. 607 Java; 131i p. 6 Fig. 279 Neu-Guinea; 176a p. 169—170 Taf. III Fig. 2 (*Polyporus apiarus*) Rawak; 214 p. 51 (*Hexagonia Wightii* Klotzsch) Deutsch Neu-Guinea.
1553. *H. durissima* Berk. et Br. 131i p. 16 Fig. 239 Java.
1554. *H. durissima* Berk. et Br. var. *rhodomela* Bres. 36 p. 507 Java.
1555. *H. glabra* Lév. 131i p. 44 (*Hexagonia lurida* Lév.) Java.
- H. Gunnii* Fr. 221 Timor.



1556. *H. Henschalli* Berk. 131i p. 11 Fig. 286 Java.  
1557. *H. Kurzii* Curr. 34 p. 550 Borneo.  
1558. *H. macrotrema* Jungh. 127 p. 200 (*Hexagonia Molkenboerii* Lév.) Java; 128 p. 607 (*Hexagonia Molkenboerii* Lév.) Java; 131i p. 30—31, Fig. 315 p. 40, 44 Java, Neu-Guinea; 132 p. 4 (*Polyporus macrotrema* Jungh.) Java; 133 p. 4 (*Hexagonia Molkenboerii* Jungh.) Java.  
1559. *H. Miquelii* Lév. 36 p. 506 (*Laschia pustulosa* Jungh.) Java; 107 p. 73 Fig. 38 (*Favolus pustulosus* Jungh.) Java; 131i p. 36 Fig. 326, p. 45 Java; 132 p. 4 (*Favolus pustulosus* Jungh.) Java; 142 p. 317 (*Favolus pustulosus* Jungh.) Java; 271 p. 387 (*Polyporus pustulosus* Zoll. et Mor.) Java; 273 (*Favolus pustulosus* Jungh.) Java.  
1560. *H. polygramma* Mont. 11 p. 44 Ternate; 37 p. 8 Sarawak; 40 p. 117 Englisch Neu-Guinea.  
1561. *H. sericea* Klotzsch 144 Java; 273 Java.  
1562. *H. subaculeata* Ces. 131i p. 45 Borneo.  
1563. *H. tenuis* Hook. 1 Java; 40 p. 117 Englisch Neu-Guinea; 47 p. 67 Krakatau, Verlateneiland; 107 p. 61 Fig. 32 (*Polyporus cervino-plumbeus* Jungh.) Java; 127 p. 199 (*Hexagonia cervino-plumbea* Jungh.) Java; 127 p. 200 (*Hexagonia pulchella* Lév.) Java; 128 p. 606 (*Hexagonia cervino-plumbea* Lév.) Java; 128 p. 607 (*Hexagonia pulchella* Lév.) Java; 131i p. 25 Fig. 305, p. 40 (*Hexagonia pulchella*) Java; 131i p. 44 (*Hexagonia cervino-plumbea* Jungh.) Java; 133 p. 3 (*Hexagonia Blumei*) Java; 133 p. 5 (*Hexagonia pulchella*) Java; 134 p. 965 Krakatau, Verlateneiland; 135 p. 1015 Krakatau, Verlateneiland; 138 p. 122 Englisch Neu-Guinea; 142 p. 315 (*Polyporus cervino-plumbeus* Jungh.) Java; 144 (*Hexagonia cervino-plumbea* Lév.) Java; 163 p. 110 (*Hexagonia cervino-plumbea* Lév.) Java; 273 (*Hexagonia cervino-plumbea* Lév.) Java, Lombok; 34 p. 550 (*Hexagonia bivalvis* (Pers.) Bres.) Borneo; 36 p. 507 (*Hexagonia bivalvis* (Pers.) Bres.) Java; 37 p. 6 (*Polyporus bivalvis* Pers.) Sarawak; 71 p. 30 (*Polystictus bivalvis* Pers.) Deutsch Neu-Guinea; 76 p. 47) 145 (*Polystictus bivalvis* Pers.) Java; 135 p. 1015 (*Hexagonia bivalvis*) Verlateneiland; 176a p. 173—174 (*Polyporus bivalvis*) Rawak; 214 p. 46 (*Polystictus bivalvis* (Pers.)) Deutsch Neu-Guinea; B.  
1564. *H. tenuis* Hook. f. *fasciata* Pat. 163 p. 110 (*Hexagonia cervino-plumbea* Lév. f. *fasciata* Pat.) Java.  
1565. *H. Thwaitesii* Berk. 36 p. 507 Java; 221 Timor.  
1566. *H. vespacea* (Pers.) 176a (*Polyporus vespaceus* Pers.) Rawak; 219 p. 251 (*Elmerina vespacea* (Pers.) Brés.) Deutsch Neu-Guinea.  
1567. *H. vitellina* Ces. 37 p. 8 Sarawak; 131i p. 45 Borneo.  
1568. *Elmerina setulosa* (Hennings) Bres. 36 p. 507 Java.

1569. *Laschia caespitosa* Berk. 214 p. 52 Deutsch Neu-Guinea; 131g p. 178 (*Polyporus Binnendijkii* Cooke) Java.  
*L. caespitosa* Berk. var. *gogolensis* Hennings 71 p. 33 Deutsch Neu-Guinea.
1570. *L. cantharelloides* Pat. 163 p. 109 Taf. XXIV Fig. 5—7 Java.
1571. *L. chloroleuca* 107 p. 76 (*Merulius cucullatus* Jungh.) Java; 127 p. 179 (*Cantharellus Junghuhnii* Mont.) Java; 128 p. 600 (*Cantharellus Junghuhnii* Mont.) Java; 128 p. 600 (*Cantharellus cucullatus* Jungh.) Java; 132 p. 3 (*Merulius cucullatus* Jungh.) Java; 142 p. 317 (*Cantharellus Junghuhnii* Mont.) Java.  
*L. lurida* Ces. 37 p. 9 Sarawak.
1572. *L. minima* Jungh. 36 p. 506 Java.
1573. *Favolaschia bispora* Holterm. 96 p. 105—106 Taf. XI Fig. 5a—b. Java.
1574. *F. calamicola* Hennings et Nyman 76 p. 13 Java.  
*F. grandiuscula* Syd. 219 p. 252 Fig. 1D Deutsch Neu-Guinea.
1575. *F. Holtermannii* Hennings 76 p. (48) 146 Java; 96 p. 106 Taf. XII Fig. 3a-d, Java
1576. *F. javanica* Holterm. 96 p. 106 Taf. XII Fig. 2a-d, Java.  
*F. Ledermannii* Syd. 219 p. 251—252 Fig. 1C Deutsch Neu-Guinea.
1577. *F. nigrostriata* Henn. et Nyman 76 p. 12 Java.
1578. *Porolaschia semipellucida* (Zoll.) Pat. 67 p. 304 (*Favolus semipellucidus* Zoll.) Java; 163 p. 109 Java; 274 p. 201—202 (*Favolus semipellucidus* Zoll. et Mor.) Java.
1579. *P. Tonkinensis* Pat. 166 p. 187 Java.
- 1579a. *Gloeoporus croceopallens* Bres. 36 p. 506 Java.
1580. *G. leptoptopilus* (Lév.) 133 p. 4 (*Polyporus leptopilus*) Java; 133b p. 381 (*Polyporus leptopilus* Lév.) Java.
1581. *G. Rhipidium* (Berk.) Speng. 76 p. (48) 146 Java; 214 p. 52 (*Favolus Rhipidium* Berk.) Deutsch Neu-Guinea.  
*G. Rhipidium* (Berk.) Speng. f. *minor* Hennings 71 p. 32 Deutsch Neu-Guinea.
1582. *Favolus agariceus* Lév. 76 p. (47) 145 (*Polyporus agariceus* Berk.) Java; 127 p. 201 Sumatra; 128 p. 604 Sumatra.  
*F. alutaceus* Berk. et Mont. 40 p. 117 Englisch Neu-Guinea.
1583. *F. arcularius* (Batsch) Lév. 70 p. 219 (*Polyporus arcularius* (Batsch) Deutsch Neu-Guinea; 74 p. 500 (*Polyporus arcularius* (Batsch) Fr.) Deutsch Neu Guinea; 76 p. 11 (*Polyporus arcularius* (Batsch) Fr.) Java, Deutsch Neu-Guinea; 76 p. (47) 145 (*Polyporus arcularius* (Batsch) Fr. Java; 127 p. 201 Java; 128 p. 607 Java; 144 Java; 214 p. 43 (*Polyporus arcularius* (Batsch) Fr.) Deutsch Neu-Guinea; 221 (*Polyporus arcularius* (Bull.) Fr.) Timor; 273 Java.  
*F. arcularius* (Batsch) f. *minor* 71 p. 28 (*Polyporus arcularius* (Batsch) form. *minor*) Deutsch Neu-Guinea.

- F. *Brasiliensis* Lév. 40 p. 117 Englisch Neu-Guinea.
- 1584 F. *cucullatus* Mont. 76 (48) 146 Java.
1585. F. *Junghuhnii* Lév. 33 p. 239 (*Favolus scaber* Berk. var. *fuscus* Ces.) Java; 36 p. 506 Java; 127 p. 202 Java; 128 p. 607 Java; 133 p. 3 Java; 134 p. 951 Java.
- F. *Junghunnii* Lév. var. *caespitosa* 37 p. 8 Borneo.
1586. F. *Leeuwemii* Lloyd 135 p. 1015 Verlateneiland.
1587. F. *moluccensis* Mont. 143 p. 365 Ternate
1588. F. *laciniatus* Lév. 127 p. 203 Java.
- F. *Lauterbachii* Hennings 71 p. 32 Deutsch Neu-Guinea; 214 p. 52 Deutsch Neu-Guinea.
1589. F. *multiplex* Lév. 40 p. 117 Englisch Neu-Guinea; 127 p. 203 Java; 128 p. 608 Java; 133 p. 4 Java.
- F. *novo-guineensis* Hennings 68 p. 7 Deutsch Neu-Guinea; 71 p. 32 Deutsch Neu-Guinea; 214 p. 52 Deutsch Neu-Guinea.
- F. *papulosus* Ces. 37 p. 8 Sarawak.
1590. F. *tessellatus* Mont. 37 p. 8 Sarawak; 127 p. 202 (*Favolus peltatus* Lév.) Java; 128 p. 607 (*Favolus peltatus* Lév.) Java; 133 p. 4 (*Favolus peltatus*) Java; 144 (*Favolus peltatus* Lév.) Java; 273 (*Favolus peltatus* Lév.) Java.
1591. F. *spathulatus* (Jungh.) Bres. 36 p. 507 Java; 107 p. 75 (*Laschia spathulata* Jungh.) Java; 127 p. 203 Java; 128 p. 608 Java; 132 p. 4 (*Laschia spathulatus* Jungh.) Java; 142 p. 317 (*Laschia spathulata* Jungh.) Java.
1592. F. *tener* Lév. 127 p. 202 Sumatra; 128 p. 607 Sumatra; 133 p. 5 Sumatra.
- Cyclomyces* *Beccarianus* Ces. 37 p. 9 Sarawak.
1593. *Hymenogramme crustacea* (Jungh.) Sacc. 67a p. 305 (*Laschia crustacea* Jungh.) Java; 107 p. 75 Fig. 40 (*Laschia crustacea* Jungh.) Java; 127 p. 193 (*Polyporus crustaceus* Lév.) Java; 128 p. 605 (*Polyporus crustaceus*) Java; 132 p. 3 (*Laschia crustacea* Jungh.) Java; 142 p. 317 (*Laschia crustacea* Jungh.) Java.
1594. *H. javensis* Mont. et Berk. 9 p. 330 Taf. XIV Java; 144 Java; 273 Java.
- Boletus* *Braunii* Bres. 221 Timor.
- 1594a. *B. Junghuhnii* v. Höhnel 95c p. 39 Java.
- B. lividus* Bull. 219 p. 247 Deutsch. Neu-Guinea.
- B. longicollis* Ces. 37 p. 4 Taf. I Fig. Matang (Borneo).
1595. *B. luridus* Schaeff. 109 p. 368 Java.
- B. Mandarinus* Ces. 37 p. 4 Taf. II Fig. Borneo.
- 1595a. *B. obscurecoccineus* v. Höhnel 95c. p. 40—41 Java.
- B. subtomentosus* L. 37 p. 4 Borneo.
1596. *B. tjibodensis* Hennings 76 p. 13 Java.
- 1596a. *Suilus atroviolaceus* v. Höhnel 95c. p. 39 Java.

1597. *Tylopilus javanicus* Hennings 76 p. (48) 146 Java.  
 1598. *Filoboletus mycenoides* Hennings 76 p. (48) 146 Taf. V  
 Fig. 2 Java; 85 p. 29 Java.  
 1599. *Ceratomyces bogoriensis* Holterm. 96 p. 98 Taf. VIII Fig. 2a-11c,  
 Java.

Fam. **Agaricaceae.**

(*Cantharelleae*).

- Cantharellus bicolor* Ces. 37 p. 3. Sarawak.  
 1600. *C. congregatus* (Pat.) Sacc. 163 p. 108 (*Dictyolus congregatus*  
 Pat.) Java.  
 1601. *C. dichotomus* Lév. 127 p. 172 (*Agaricus dichotomus* Lév.)  
 Java; 128 p. 597 (*Agaricus dichotomus* Lév.) Java.  
 1602. *C. partitius* Berk. 10 p. 162 Borneo; 219 p. 247 Deutsch Neu-  
 Guinea.  
 1603. *C. ramealis* Jungh. 107 p. 78 Java; 129a p. 121 Java; 142 p. 318  
 Java; 144 Java; 273 Java.  
 1604. *Arrhenia cupuliformis* Hennings 76 p. (49) 147 Java.  
 1605. *Stylobates capitatus* Pat. 166 p. 186 Java.  
 1606. *S. cerebrinus* Pat. 166 p. 183 Java.  
 (*Paxilleae*).  
 1607. *Paxillus cantharelloides* Hennings 76 p. 13 Taf. I Fig. 6  
 Celebes.  
 1607a. *Phylloporus bogoriensis* v. Höhnelt 95c. p. 41 Java.  
 (*Coprineae*).  
 1608. *Bolbitius tjibodensis* Hennings 76 p. 15 Java.  
 1609. *Coprinus atramentarius* (Bull.) 107 p. 85 Java; 142 p. 319  
 Java; 271 p. 389 (*Agaricus atramentarius* Bull.) Java.  
 1610. *C. aurantiacus* Hennings et Nyman 76 p. (49) 147 Java.  
 1611. *C. cinereus* (Bull.) 107 p. 85 (*Agaricus cinereus* Bull.) Java; 142 p.  
 319 (*Agaricus cinereus* Bull.) Java; 271 p. 389 (*Agaricus cinereus*  
 Bull.) Java.  
 1612. *A. ephemerus* Bull. 107 p. 85 (*Agaricus ephemerus* Bull.) Java;  
 142 p. 319 (*Agaricus ephemerus* Bull.) Java; 271 p. 389 (*Agaricus*  
*ephemerus* Bull.) Java.  
 1613. *C. Friesii* Quéf. 166 p. 183 Java.  
*C. micaceus* Bull. 221 Timor.  
 1613a. *C. nebulosus* Zoll. 67a p. 305—306. Java.  
 1613b. *C. microsporus* Berk et Br. 95c. p. 4—5 Java.  
 1614. *C. phalloideus* Hennings et Nyman 76 p. (49) 147 Java.  
 1615. *C. pseudocomatus* Hennings 76 p. 15 Java.  
 (*Hygrophoreae*).  
 1616. *Hygrophorus aurantiacus* Hennings 76 p. (50) 148 Java.  
 1617. *H. badakensis* Hennings 76 p. (50) 148 Java.

1618. *H. ceraceus* (Sow.) 273 (*Agaricus ceraceus* Sow.) Java.  
1619. *H. croceophyllus* Bres. 33 p. 237 Java.  
1620. *H. Fleischerianus* Hennings 76 p. (50) 148 Java.  
1621. *H. lactarioides* Hennings 33 p. 237 Java.  
1622. *H. lurido-flavus* Hennings 76 p. (50) 148 Java.  
1623. *H. gedehensis* Hennings 76 p. (49) 147 Java.  
1624. *H. subvirgineus* Hennings 76 p. (50) 148 Java.  
1625. *H. Sydowianus* Hennings 76 p. (49) 147 Java.  
1626. *H. tjibodensis* Hennings et Nyman. 76 p. 14 Java.  
1627. *Phaeolimacium bulbosum* Hennings 76 p. 14 Java.  
1628. *Limacium subolivaceo-album* Hennings 76 p. (50) 148 Java.  
(Lactarieae).  
*Lactaria novo-guineensis* Hennings 74 p. 503 Deutsch Neu-Guinea; 214 p. 56 Deutsch Neu-Guinea.  
1629. *L. sublignyota* Hennings 76 p. 14 Java.  
1629a. *Russula adusta* (P.) 95c. p. 28 Java.  
1630. *R. alutacea* (Pers.) 107 p. 83 (*Agaricus* (*Russula*) *alutaceus* Pers.) Java; 142 p. 318 (*Agaricus* (*Russula*) *alutaceus* Pers.) Java.  
1631. *R. emetica* (Schaeff.) 109 p. 388 (*Agaricus emeticus* Schaeff.) Java.  
1632. *R. Fleischeriana* Hennings 76 p. 13 Java.  
1633. *R. gedehensis* Hennings 76 p. (51) 149 Java.  
1633a. *R. integra* Fr. 95c p. 28 Java.  
1633b. *R. lepida* Fr. 95c p. 28 Java.  
1633c. *R. lilacea* Quel. 95c p. 28 Java.  
1634. *R. pusilla* Hennings 76 p. (51) 149 Java.  
1634a. *R. sororia* Fr. 95c. p. 28 Java.  
1635. *R. subfragilis* Hennings 76 p. (51) 149 Java.  
1636. *R. viscosa* Hennings 76 p. (51) 149 Java.  
1637. *Russulina gedehensis* Hennings 76 p. 14 Java.  
1638. *R. tjibodensis* Hennings 76 p. 14 Java.  
(Schizophylleae.)  
1639. *Schizophyllum alneum* (L.) Schröt. 9 p. 331 (*Schizophyllum commune* Fr.) Java; 40 p. 115 (*Schizophyllum commune* Fr.) Englisch Neu-Guinea; 47 p. 66 (*Schizophyllum commune*) Krakatau; 70 p. 221 Java; 71 p. 35 Deutsch Neu-Guinea; 76 p. 16 Java, Celebes, p. (51) 149 Java; 107 p. 80 (*Schizophyllum commune* Fr.) Java; 134 p. 951 Java, p. 965 Krakatau; 138 p. 121 (*Schizophyllum commune* Fr.) Englisch Neu-Guinea; 142 p. 318 (*Schizophyllum commune* Fr.) Java; 163 p. 107 (*Schizophyllum commune* Fr.) Java; 183 (*Schizophyllum commune*) Java; 214 p. 53 Deutsch Neu-Guinea; 219 p. 247 (*Schizophyllum commune* Fr.) Deutsch Neu-Guinea; 221 (*Schizophyllum commune* Fr.) Timor; 273 (*Schizophyllum commune* Fr.) Java.

1640. *S. alneum* (L.) Schröt. var. *multifidum* (Batsch.) Fr. 34 p. 549  
(*Schizophyllum commune* var. *multifidum* (Batsch.) Fr.) Borneo; B  
(*Schizophyllum commune* Fr. var. *multifidum*).
1641. *S. lobatum* Bref. 183 Java; 243 p. 158—163 Taf. XII Java.
1642. *Oudemansiella Canarii* (Jungh.) v. Höhnel 85 (*Oudemansiella*  
*apalosarca* (Berk. et Br.) v. Höhnel) Java; 86 p. 1—2 Java; 107  
p. 82 (*Agaricus Canarii* Jungh.) Java; 142 p. 318 (*Agaricus Canarii*  
Jungh.) Java; 76 p. (57) 155 (*Pluteus macroporus* Hennings)  
Java.
- (Marasmieae).
- Anthracophyllum nigrita* (Lév.) Kalchbr. 219 p. 247 Deutsch Neu-  
Guinea.
- Xerotus dasypus* Ces. 37 p. 4 Sarawak.
- 1642a. *X. rawakensis* Pers. 176a p. 168 (*Agaricus Rawakensis*) Rawak.
1643. *X. tomentosus* Klotzsch 107 p. 81 (*Xerotus indicus* Jungh.) Java;  
142 p. 318 (*Xerotus indicus* Jungh.) Java; 144 (*Agaricus* (*Xerotus*).  
*indicus* Jungh.) Java; 273 (*Xerotus indicus* Jungh.) Java.
- Lentinus Beccarianus* Ces. 37 p. 3 Sarawak.
1644. *L. braccatus* Lév. 273 Bima.
- L. brevipes* Cooke 138 p. 120 Englisch Neu-Guinea.
- L. calvescens* Berk. 40 p. 115 Englisch Neu-Guinea.
- 1644a. *L. capronatus* Fr. 176a p. 167—168 Taf. 1 Fig. 6 (*Agaricus*  
*strigosus*) Rawak.
1645. *L. chaetophorus* Lév. 127 p. 177 Java; 128 p. 599 Java.
1646. *L. ciliatus* Lév. 127 p. 175 Molukken; 128 p. 599 Molukken.
- L. crenulatus* Masee 138 p. 121 Englisch Neu-Guinea.
1647. *L. crinitus* (Linn.) Fr. 70 p. 221 Celebes; 76 p. 16 Celebes;  
138 p. 120 Englisch Neu-Guinea; 221 Timor.
1648. *L. dactyliophorus* Lév. 37 p. 3 Sarawak; 127 p. 174 Sumatra;  
128 p. 598 Sumatra; 141a p. 168 Taf. 136 Fig. 2 Java; 144 Java;  
221 Timor; 273 Java.
1649. *L. dichrous* Lév. 273 Soembawa.
1650. *L. djamor* Fr. 273 Java.
1651. *L. echinopus* Lév. 129a p. 118 Java; 144 Java; 273 Java.
- L. exilis* Klotzsch 138 p. 121 Englisch Neu-Guinea.
1652. *L. fasciatus* Berk. 47 p. 66 Verlateneiland; 134 p. 965 Verlateneiland.
- L. glandulosus* Ces. 37 p. 3 Sarawak.
1653. *L. gymnocephalus* Lév. 127 p. 173 Java; 128 p. 598 Java.
- L. holopogonius* Berk. 71 p. 3 Deutsch Neu-Guinea; 214 p. 53  
Deutsch Neu-Guinea.
1654. *L. infundibuliformis* Berk. et Br. 34 p. 549 (*Lentinus javanicus*  
Lév.) Borneo; 129a p. 118 (*Lentinus javanicus* Lév.) Java; 138  
p. 120 Englisch Neu-Guinea; 144 (*Lentinus javanicus* Lév.) Java;  
273 (*Lentinus javanicus* Lév.) Java.

- L. inquinans* Berk. 40 p. 115 Englisch Neu-Guinea.  
*L. Kärnbachii* Hennings 71 p. 34 Deutsch Neu-Guinea; 214 p. 53—54  
Deutsch Neu-Guinea.  
*L. Lauterbachii* Hennings 74 p. 502 Deutsch Neu-Guinea; 214 p. 54  
Deutsch Neu-Guinea.  
*L. Lecomtei* Fr. 40 p. 115 Englisch Neu-Guinea.  
*L. leucochrous* Lév. 37 p. 4 Sarawak; 71 p. 34 Deutsch Neu-Guinea;  
214 p. 54 Deutsch Neu-Guinea.
1655. *L. melanophyllus* Lév. 127 p. 175 Sumatra; 128 p. 599 Sumatra.  
*L. Murrayi* Kalchbr. et Mac Owan 220 p. 2 Deutsch Neu-Guinea.
1656. *L. pergameneus* Lév. 10 p. 162 Borneo; 40 p. 115 Englisch  
Neu-Guinea; 71 p. 34 Deutsch Neu-Guinea; 138 p. 119 Borneo,  
p. 121 Englisch Neu-Guinea; 214 p. 54 Deutsch Neu-Guinea.
1657. *L. polychrous* Lév. 127 p. 175 Java, Sumatra; 128 p. 598 Java,  
Sumatra.
1658. *L. radicans* Cooke 40 p. 115. und 118 Englisch Neu-Guinea;  
166 p. 182 Java.
1659. *L. Sajor-Caju* Fr. 71 p. 34 Java, Neu-Guinea; 74 p. 502 Deutsch  
Neu-Guinea; 76 p. (51) 149 Java; 83 p. 65 Java; 107 p. 83  
(*Agaricus Sajor-Caju* Rumpf.) Java; 138 p. 120 Englisch Neu-  
Guinea; 142 p. 319 (*Agaricus Sajor-Caju* Rumpf.) Java; 204 p. 125  
Taf. LVI Fig. 1 (*Boletus primus infundibiliforma*) Ambon; 214  
p. 54 Deutsch Neu-Guinea.
1660. *L. setiger* Lév. 37 p. 3 Borneo; 141a p. 170 Taf. 136  
Fig. 4 Java.  
*L. strigosus* Fr. 71 p. 34 Deutsch Neu-Guinea; 74 p. 502 Deutsch  
Neu-Guinea; 214 p. 55 Deutsch Neu-Guinea.  
*L. subtigrinus* Hennings 74 p. 502 Deutsch Neu-Guinea; 214 p. 55  
Deutsch Neu-Guinea.  
*L. subnudus* Berk. 40 p. 115 Englisch Neu-Guinea.  
*L. Tanghiniae* Lév. 214 p. 55 Deutsch Neu-Guinea.  
*L. tener* Klotzsch 40 p. 115 Englisch Neu-Guinea.  
*L. tigrinus* (Bull.) Fr. 221 Timor.
1661. *L. Tuber-regium* Fr. 70 p. 221 Celebes; 76 p. 16 Celebes; 204  
p. 120 Taf. LVII Fig. 4 (*Tuber regium*) Ambon.
1662. *L. variabilis* Holterm. 96 p. 111 Taf. X Fig. 1a-d Java,
1663. *L. velutinus* Fr. 40 p. 115 Englisch Neu-Guinea; 47 p. 66 Krakatau;  
127 p. 176 Java; 128 p. 599 Java; 134 p. 965 Krakatau.  
*L. villosus* Klotzsch 74 p. 34 Deutsch Neu-Guinea; 214 p. 55 Deutsch  
Neu-Guinea.
1664. *Panus bogorianus* Hennings et Nyman 76 p. (51) 149 (*Lentinus*  
*bogorianus* Hennings et Nyman) Java.  
*P. conchatus* Fr. 138 p. 120 Borneo.  
*P. copulatus* Ehrbg. 37 p. 3 Sarawak.

- P. Fendleri* Berk. 71 p. 34 Deutsch Neu-Guinea; 214 p. 53 Deutsch Neu-Guinea.
- P. rudis* Fr. 71 p. 35 Deutsch Neu-Guinea; 214 p. 53 Deutsch Neu-Guinea.
- P. torulosus* Fr. 40 p. 115 Englisch Neu-Guinea.
1665. *Marasmius acumiatus* Hennings 76 p. (52) 150 Java.
1666. *M. bambusinus* (Fries) 144 (*Agaricus bambusinus* Fr.) Java; 273 (*Agaricus bambusinus* Fr.) Java.
1667. *M. calopodioides* Hennings 76 p. (53) 151 Java.
1668. *M. Campanella* Holterm. 76 p. (52) 150 Java; 96 p. 105 Taf. XII Fig. 1a-c Java.
- M. caulicinalis* (Bull.) Quélet. 219 p. 247 Deutsch Neu-Guinea.
1669. *M. cepaestipes* Hennings et Nyman. 76 p. (53) 151 Java.
- M. congregatus* Mont. 219 p. 244 Deutsch Neu-Guinea.
1670. *M. depressus* Lév. 144 (*Agaricus depressus* Lév.) Java.
1671. *M. epiphyllus* Fr. 220 p. 2 Ambon.
- M. erumpens* Masee 138 p. 119 Borneo.
1672. *M. Fleischerianus* Hennings 76 p. (52) 150 Java.
1673. *M. fuscatus* (Lév.) 127 p. 169 (*Agaricus fuscatus* Lév.) Java; 128 p. 596 (*Agaricus fuscatus* Lév.) Java.
- M. gogolensis* Hennings 71 p. 35 Deutsch Neu-Guinea; 214 p. 55 Deutsch Neu-Guinea.
1674. *M. helvelloides* Hennings et Nyman 76 p. 15 Java.
- M. Kärnbachii* Hennings 74 p. 503 Deutsch Neu-Guinea; 214 p. 56 Deutsch Neu-Guinea.
1675. *M. Moritzianus* (Lév.) 129a p. 114 (*Agaricus Moritzianus* Lév.) Java; 144 (*Agaricus Moritzianus* Lév.) Java; 273 (*Agaricus Moritzianus* Lév.) Java.
1676. *M. Nymanianus* Hennings 76 p. (52) 150 Java; 83 p. 65 Java-  
*M. oreades* Fr. 37 p. 3 Sarawak.
1677. *M. pangerangensis* Hennings 76 p. (52) 150 Java.
1678. *M. parvulus* (Lév.) 127 p. 168 (*Agaricus parvulus* Lév.) Java; 128 p. 596 (*Agaricus parvulus* Lév.) Java.
1679. *M. plicatus* Wakker 230 Java.
1680. *M. purpureo-brunneolus* Hennings 76 p. (53) 151 Java.
- M. pusillus* Hennings 74 p. 502 Deutsch Neu-Guinea; 214 p. 56 Deutsch Neu-Guinea.
1681. *M. ramentaceus* (Berk.) Pat. 144 (*Agaricus ramentaceus* Berk.) Java; 163 p. 107—108 Taf. XXIV Fig. 1—4 (*Androsaceus ramentaceus* (Berk.) Pat.) Java; 273 (*Agaricus ramentaceus* Berk.) Java.
- M. rhodocephalus* Fr. 74 p. 503 Deutsch Neu-Guinea.
1682. *M. Sacchari* Wakker 224 Java; 226 Java; 229 Java; 230 Java.
1683. *M. sclerophorus* (Korth.) 127 p. 170 (*Agaricus sclerophorus* Korth.) Java; 128 p. 597 (*Agaricus sclerophorus* Korth.) Java.



1684. *M. similis* Berk. et Curt. 43 p. 55 Java.
1685. *M. Sumatrensis* (Lév.) 127 p. 170 (*Agaricus Sumatrensis* Lév.) Sumatra; 128 p. 597 (*Agaricus Sumatrensis* Lév.) Sumatra.
1686. *M. tenuipes* (Lév.) 127 p. 170 (*Agaricus tenuipes* Lév.) Sumatra; 128 p. 576 (*Agaricus tenuipes* Lév.) Sumatra.
1687. *M. tenuissimus* Schw. var. *major* Jungh. 271 p. 389 Java.
1688. *M. trichophorus* Zipp. 127 p. 171 (*Agaricus trichophorus* Zipp.) Java; 128 p. 597 (*Agaricus trichophorus* Zipp.) Java.
1689. *M. venosus* Hennings et Nyman 76 p. (53) 151 Java.
1690. *M. zandbaiensis* Hennings et Nyman 76 p. (52) 150 Java. *Heliumyces pauciradiatus* Ces. 37 p. 3 Sarawak.
1691. *H. pityropus* Lév. 127 p. 178 Java, Sumatra; 128 p. 599 Java, Sumatra.
- (Agariceae.)
- Psathyrella consimilis* Bres. et Hennings 219 p. 247 Deutsch Neu-Guinea.
1692. *P. disseminata* (Pers.) Sacc. 71 p. 35 Deutsch Neu-Guinea; 76 p. (53) 151 Java; 214 p. 56 (*Coprinarius disseminatus* (Pers.) Schröt.) Deutsch Neu-Guinea.
1693. *P. gracilis* Fr. 76 p. (53) 151 Java.
1694. *Panaeolus campanulatus* (L.) Fr. 76 p. 16 (*Chalymotta campanulata* (L.) Karst.) Celebes; 221 Timor.
1695. *P. fimicola* Fr. 76 p. (54) 152 Java.
1696. *P. papilionaceus* Fr. 76 p. (54) 152 (*Chalymotta papilionacea* (Bull.) Karst.) Java; 166 p. 183 Java; 37 p. 3 (*Agaricus papilionaceus* (Bull.)) Sarawak.
- P. retirugis* Fr. 221 Timor.
1697. *P. sphinctrinus* Fr. 76 p. 16 (*Chalymotta sphinctrina* (Fr.) Karst.) Celebes.
1698. *Psathyra conopileus* (Fries) Karst. 76 p. (54) 152 Java.
1699. *P. gyroflexa* Fr. 166 p. 183 Java.
- 1699a. *P. porphyrella* Berk et Br. 95c, p. 33 Java.
1700. *P. spadiceo-grisea* Schaeff. 76 p. (54) 152 Java.
1701. *P. subvinosa* (Berk.) 43 p. 55 (*Agaricus* (*Psathyra*) *subvinosus* Berk.) Java.
- 1701a. *Psilocybe subaeruginascens* v. Höhnelt 95c. p. 30 Java.
1702. *Hypholoma appendiculatum* (Bull.) Sacc. 76 p. (54) 152 Java.
1703. *H. fasciculare* (Huds.) Sacc. 76 p. (54) 152 Java.
1704. *H. phlebophora* (Pat.) 166 p. 102 (*Lacrymaria phlebophora* Pat.) Java.
1705. *Psalliota arginea* Berk. et Br. 86 p. 12—13 Fig. 3 Java.
1706. *P. campestris* (L.) 107 p. 84 (*Agaricus* (*Psalliota*) *campestris* L.) Java; 142 p. 319 (*Agaricus* (*Psalliota*) *campestris* L.) Java.
- P. fastigiata* Bres. 221 Timor,

1707. *P. microcosmus* Berk. et Br. 86 p. 11 Fig. 2 Java.
1708. *P. Rhinocerotis* Jungh. 108 p. 292 (*Agaricus* (*Psalliota*) *Rhinocerotis* Jungh.) Java; 142 p. 320 (*Agaricus* (*Psalliota*) *Rhinocerotis* Jungh.) Java.
- 1708a. *Micropsalliota plumaria* (Berk. et Br.) v. Höhnel 95c p. 32 Java.
- 1708b. *M. pseudovolvolata* v. Höhnel 95c p. 31—32 Java.
- 1708c. *Stropharia aerugineo-maculans* v. Höhnel 95c. p. 30—31 Java.
1709. *S. atrosanguinea* Hennings 76 p. (54) 152 Java, p. 16 Java;
1710. *S. indusiata* Berk. 43 p. 55 Java.
1711. *S. olivacea* Hennings et Nyman 76 p. (54) 152 Java.
1712. *S. pseudopsathyra* Berk. 43 p. 55 Java.
1713. *Crepidotus aurantiacus* Bres. 33 p. 238 Java.
1714. *C. columellifer* Berk. 10 p. 161 Borneo.
1715. *C. luteo-viridis* Hennings 76 p. (54) 152 Java.  
*C. mollis* Schaeff. 37 p. 2 Sarawak.
1716. *C. ostreatoides* Hennings et Hyman 76 d. 17 Java.
1717. *C. schizophylloides* Hennings 76 p. (55) 153 Java.
1718. *C. tjibodensis* Hennings 76 p. 17 Java.
1719. *Galera umbrina* Hennings 76 p. (55) 153 Java.
1720. *Inocybe subgeophylla* Hennings 76 p. (56) 154 Java.
1721. *Naucoria agregata* Hennings 76 p. (55) 153 Java.
1722. *N. badakensis* Hennings 76 p. (55) 153 Java.
1723. *N. bogoriensis* Hennings et Nyman 76 p. (55) 153 Java.
1724. *N. flavo-viridula* Hennings 76 p. 17 Java.
1725. *N. micromegas* Berk. 43 p. 55 Java.
1726. *N. multiferus* Berk. 43 p. 54 Java.  
*N. Myosotis* Fr. 37 p. 2 Sarawak.
1727. *N. subcucumis* Hennings 76 p. (55) 153 Java.
1728. *N. trichialis* Lév. 129a p. 113 (*Agaricus trichialis* Lév.) Java; 144 (*Agaricus trichiatis* Lév.) Java; 273 (*Agaricus trichialis* Lév.) Java.  
*N. triscopoda* Fr. 219 p. 247 Deutsch Neu-Guinea.
1729. *Tubaria bogoriensis* Hennings 76 p. 17 Java.
1730. *T. infundibuliformis* Hennings et Nyman 76 p. (56) 154 Java.
1731. *T. mammosa* Hennings 76 p. (56) 154 Java.
1732. *Flammula javanica* Hennings 71 p. 35 Java.  
*F. paupercula* Ces. 37 Sarawak; 221 Timor.  
*F. penetrans* Fr. 74 p. 504 Deutsch Neu-Guinea; 214 p. 57 (*Naucoria* (*Flammula*) *penetrans* (Fr.) Hennings) Deutsch Neu-Guinea.
1733. *F. tjibodensis* Hennings 76 p. (56) 154 Java.
1734. *Pholiota alutisporus* Berk. 43 p. 54 Java.
- 1734a. *P. sanguineo-maculans* v. Höhnel 95c. p. 29 Java.
1735. *P. submutabilis* Hennings 76 p. (56) 154 Java.

1736. *Locellina illuminans* Hennings 76 p. 18 Taf. I Fig. 8 Celebes; 81 Celebes; 84 Celebes.
1737. *Rozites Nymaniana* Hennings 75 p. 28 Java; 76 p. 18. p. (57) 155 Java.
1738. *Eccilia bogoriensis* Hennings et Nyman 76 p. (57) 155 Java.
1739. *E. zandbaiensis* Hennings et Nyman 76 p. (57) 155 Java.
1740. *Nolanea pallide-flava* Hennings 76 p. 18 (*Leptonia pallide-flava* Hennings) Java; 86 p. 10—11 (*Leptonia pallide-flava* Hennings) Java.
1741. *Pluteus aromaticus* Hennings et Nyman 76 p. (58) 156 Java.
1742. *P. candidus* Hennings 76 p. (58) 156. Java.
1643. *P. ferrugineus* Hennings et Nyman 76 p. 19 Java.
1744. *P. Fleischerianus* Hennings 76 p. 19 Java.  
*P. leoninus* (Schaeff.) Quél. 219 p. 247 Deutsch Neu-Guinea.
1745. *P. subnanus* Hennings et Nyman 76 p. (58) 156 Java.
1746. *Clitopilus bogoriensis* Hennings et Nyman 76 p. (57) 155 Java; 95c. p. 10—11 Java.  
*C. orcellarius* Ces. 37 Borneo.
1747. *Volvaria volvacea* Fr. 83 p. 65 Java; 166 p. 182 Java.
1748. *Pleurotus arrhenioides* Hennings et Nyman 76 p. 20 Java.
1749. *P. aureo-tomentosus* Kalchbr. 33 p. 237 Java.
1750. *P. Bogoriensis* Lév. 127 p. 172 (*Agaricus Bogoriensis* Lév.) Java; 128 p. 597 (*Agaricus Bogoriensis* Lév.) Java.  
*P. craterellus* Dur. et Lév. 219 p. 246 Deutsch Neu-Guinea.
1751. *P. derminus* (Lév.) 33 p. 237 Java; 127 p. 173 (*Agaricus derminus* Lév.) Java; 128 p. 598 (*Agaricus derminus* Lév.) Java.
1752. *P. dictyodes* (Lév.) 129a p. 116 (*Agaricus dictyoides* Lév.) Java; 144 (*Agaricus dictyoides* Lév.) Java; 273 (*Agaricus dictyoides* Lév.) Java.
1753. *P. fissilis* (Lév.) 127 p. 172 (*Agaricus fissilis* Lév.) Java; 128 p. 597 (*Agaricus fissilis* Lév.) Java.  
*P. gilvoscens* Kalchbr. 219p. 247 Deutsch Neu-Guinea.  
*P. lagotis* Berk et Curt. 219 p. 247 Deutsch Neu-Guinea.
1754. *P. lobatus* Hennings et Nyman 76 p. (58) 156 Java.
1755. *P. Sarasini* Hennings 76 p. 20 Celebes.  
*P. semisupinus* Berk. et Br. 37 p. 2 Sarawak.
1756. *P. subulatus* Hennings et Nyman 76 p. (58) 156 Java.
1757. *P. tenuissimus* Jungh. 107 p. 84 Java; 142 p. 319 Java.
- 1757a. *P. tenuissimus e major* Jungh. 67a p. 305 (*Agaricus tenuissimus a major*) Java.
1758. *P. tjibodensis* Hennings 76 p. (58) 156 Java.
1759. *P. venulosus* (Lév.) 129a p. 115 Java; 144 (*Agaricus venulosus* Lév.) Java; 273 (*Agaricus venulosus* Lév.) Java.
1760. *P. Zippilii* Lév. 127 p. 171 (*Agaricus Zippelii* Lév.) Java; 128 p. 597 (*Agaricus Zippelii* Lév.) Java.

1761. *Omphalia cylindraceo-campanulata* (Hennings) v. Höhnel 76 p. (53) 151 (*Marasmius cylindraceo-campanulatus* Hennings) Java; 86 p. 14—15 Fig. 4 (*Marasmius cylindraceo-campanulatus* Hennings) Java.  
O. demissa Fr. 221 Timor.
1762. *O. Martensii* Hennings 69 p. 63—64 Tab VII Fig. 3 Java; 81 Borneo; 84 Borneo; B.  
O. micromeles Berk. et Br. Sarawak.
1763. *O. reversus* Berk. 43 p. 54 Java.
1764. *O. scyphoides* Fr. 220 p. 2 Ambon.
1765. *O. subfibula* Hennings 76 p. (58) 156 Java.
1766. *O. translucens* Hennings 76 p. 20 Taf. I Fig. 9 Java.
1767. *Mycena alcalina* Fr. 76 p. (60) 158 Java.  
M. arachnoideus Berk. et Curt, 37 p. 3 Sarawak.
1768. *M. atro-discus* Hennings et Nyman 76 p. 59 Java.
1769. *M. bambusarum* Berk. 43 p. 54 Java.
1770. *M. breviseta* v. Höhnel 86 p. 9—10 Java.
1771. *M. clavulifera* Berk. et Br. 86 p. 6—8 Textfig. 1 Java.
1772. *M. depressa* Lév. 129a p. 114 Java.
1773. *M. digitalis* Bres. 33 p. 237 Java.
- 1773a. *M. eucystidiata* v. Höhnel 95c p. 24—25 Java.
1774. *M. galericulata* (Scop.) Sacc. 76 p. (60) 158 Java.
1775. *M. granulosa* Hennings 76 p. (59) 157 Java.
1776. *M. illuminans* Hennings 81 p. (309)—(310) Java; 84 Java; 86 p. 4—6 Java.
1777. *M. longiseta* v. Höhnel 86 p. 8—9 Java.
- 1777a. *M. pura* (Pers.) Fr. 95c. p. 26. Java.
1778. *M. rugulosa* (Lév.) 85 Java, synonymem sind 1146—1148.
1779. *M. subacicula* Hennings 76 p. (59) 157 Java.
1780. *M. subcapillaris* Hennings 76 p. (59) 157 Java.
1781. *M. subtintinnabulum* Hennings 76 p. (59) 157 Java.
1782. *M. Tintinnabulum* Fr. 43 p. 54 Java.
1783. *M. viridula* Hennings et Nyman 76 p. (59) 157. Java.
1784. *Hiatula pusilla* Berk. 43 p. 55 Java.
1785. *Collybia eurhiza* (Berk.) v. Höhnel 37 p. 2 Fig. 1a-b (*Agaricus* (*Tricholoma*) *sub-gambosus* Ces.) Borneo, Sarawak; 76 p. 17 (*Flammula Filipendula* Hennings et Nyman) Java; 76 p. 18 (*Pholiota Janseana* Hennings) Java; 76 p. 19 (*Pluteus bogoriensis* Hennings et Nyman) Java; 76 p. 19 (*Pluteus Treubianus* Hennings et Nyman) Java; 85 Java; 127 (*Flammula Filipendula* Hennings et Nyman) Java; 127 p. 28 (*Pholiota Janseana* Hennings et Nyman) Java; 127 p. 28 (*Pluteus Treubianus* Hennings) Java; 166 p. 182 (*Collybia radicata* Pat.) Java.
- 1785a. *C. longipes* (Bull.) 95c Java.

1786. *C. muciflua* v. Höhnelt 86 p. 2—4 Java.  
 1787. *C. subconfluens* Hennings 76 p. (60) 158 Java.  
*Laccaria Hookeri* Masee 138 p. 120 Englisch Neu-Guinea.  
 1787a. *L. laccata* Scop. 95c p. 26 (*Clitocybe laccata*) Java.  
 1788. *Clitocybe flexilis* (Lév.) 127 p. 169 (*Agaricus flexilis* Lév.)  
 Sumatra; 128 p. 596 (*Agaricus flexilis* Lév.) Sumatra.  
 1789. *C. hymenodes* (Lév.) 127 p. 169 (*Agaricus hymenodes* Lév.)  
 Sumatra; 128 p. 596 (*Agaricus hymenodes* Lév.) Sumatra.  
 1790. *Aeruginospora singularis* v. Höhnelt 85 p. 27 Java.  
 1791. *Tricholoma obtecta* (Jungh.) 107 p. 83 (*Agaricus obtectus* Jungh.)  
 Java; 142 p. 318 (*Agaricus obtectus* Jungh.) Java.  
 1792. *Lepiota aurantiaca* Hennings 76 p. 21 Java.  
 1793. *L. celebica* Hennings 76 p. 21 Celebes.  
*L. caepesipes* Sow. 219 p. 246 Deutsch Neu-Guinea.  
 1794. *L. conipes* Berk. 42 p. 105 Java.  
 1795. *L. verrucosa* Hennings et Nyman 76 p. 21 Java.  
*Armillaria distans* Pat. 221 Timor.  
 1796. *A. mellea* (Vahl.) Quélet 83 p. 65 Java; 158 p. 24 Java; 201  
 Java; 95a p. 26 Java.  
 1797. *A. mellea* (Vahl.) Quélet var. *javanica* Hennings 76 p. 20 Java.  
 1797a. *Amanitopsis vaginata* (Bull.) Fr. 95c p. 26 Java.  
 1797b. *A. vaginata* (Bull.) Fr. var. *grisea* DC 95c p. 26 Java.  
 1797c. *A. vaginata* (Bull.) Fr. var. *pallido-carnea* v. Höhnelt 95c p. 26 Java.  
 1797d. *A. vaginata* (Bull.) Fr. var. *angustilamellata* v. Höhnelt 95c p. 26 Java.

### Gasteromycetes.

#### Phallineae.

#### Fam. Clathraceae.

- Clathrus cibarius* (Tul.) Fischer. 70 p. 222 Deutsch Neu-Guinea.  
 1798. *C. triscapus* (Turpin) Fr. 51 p. 67 Java.  
 1799. *Clathrella Treubii* Bern. 16 Java; 131e p. 381—383 (*Clathrus*  
*Traubii*) Fig. 212 Java; 131f p. 56—57 Fig. 72 (*Clathrus Traubii*) Java.  
 1800. *C. pusilla* (Berk.) 58 p. 125 1 Fig. Java.  
 1801. *Laterna* (?) *pentactina* Hennings et Nyman 76 p. 23 Java;  
 174 p. 170 Java.  
 1802. *Simblum gracile* Berk. 131e p. 383 Fig. 213 Java; 131f p. 66  
 Fig. 84 Java.  
 1803. *S. periphragmoides* Klotzsch 51 p. 66 (*Simblum flavescens*)  
 Java; 58 p. 123 1 Fig. Java; 76 p. 22 Java; 131f p. 66 Fig. 83  
 Java; 163 p. 120 Java; 174 p. 157—158 Taf. XXIV Fig 9—11 Java.  
 1804. *Pseudocolus javanicus* (Penzig) 131f p. 52 Fig. 66 Java;  
 174 p. 160—163 Taf. XXIB, XXIV Fig. 12—14, XXV 2—3 (*Colus*  
*javanicus* Penzig.) Java.

1805. *P. rugulosus* Lloyd 131f p. 52 Fig. 67 Java.  
 1806. *Aseroe arachnoidea* Ed. Fischer 131f p. 48 Fig. 55—56 Java;  
 166 p. 191 (*Aseroe rubra* La Bill. var. *Bogoriensis* Pat.) Java; 174 p.  
 164—169 Taf. XXV Fig. 4—13 Textfig. p. 165, Java;  
 1807. *A. rubra* La. Bill. 201a p. 57 Java.  
 1808. *A. rubra* La Bill. var. *Junghuhnii* (Schlecht) 21a Java; 174 p. 164  
 Java; 273 (*Aseroe multiradiata* Zoll.) Java.  
*A. rubra* La Bill. var. *zeylanica* (Berk.) Ed. Fischer. 214 p. 58  
 Deutsch Neu-Guinea.

Fam. **Phallaceae.**

1809. *Mutinus Bambusinus* (Zollinger) Ed. Fischer 54 p. 30—34 Taf.  
 IV-V Fig. 26—31 Java; 76 p. 21 Java, Celebes; 51 p. 55 Java;  
 131d p. 358 Fig. 178—179 Java; 131f. p. 28 Fig. 26 Celebes; 174  
 p. 136—137 Java; 273 Java.  
 1810. *M. borneensis* Ces. 37 p. 12 Taf. I Fig. Sarawak; 51 p. 57 Borneo.  
 1811. *M. Fleischeri* Penzig 131f p. 28 Fig. 27 Java; 174 p. 137—138  
 Taf. XXI A, Taf. XXII Fig. 1—4 Java.  
 1812. *M. minimus* Pat. 166 p. p. 191 Java; 174 p. 138—139 Java.  
 1813. *Jansia elegans* Penz. 131f. p. 33—34 Fig. 32 und 33 Java; 174  
 p. 140—142 Taf. XX A, Taf. XXII Fig. 5—13 Java.  
 1814. *J. Nymaniana* (Hennings) Penz. 58 p. 126 (*Mutinus Nymaninus*  
 (Hennings) Fischer) Java; 76 p. 22 Taf. I Fig. II (*Floccomutinus*  
*Nymanianus* Hennings) Java; 131d p. 387 Fig. 217—218 (*Jansia*  
*rugosa* Penz.) Java; 131f. p. 33 Fig. 30—31 (*Jansia rugosa* Penz.)  
 Java; 170 Java; 174 p. 142—143 Taf. XX B, XXIII Fig. 1—4  
 (*Jansia rugosa* Penzig) p. 169 (*Floccomutinus Nymanianus* Henn.)  
 Java.  
 1815. *Janseella Asteriscus* Hennings et Nyman 76 p. (73) 171 Taf.  
 V. Fig. 19. Java.  
 1816. *Ityphallus celebicus* (Hennings) 59 Java: 76 p. 21 Taf. I Fig.  
 10 (*Phallus celebicus* Hennings) Celebes; 131f. p. 22 Fig 99 (*Phallus*  
*celebicus*) Celebes.  
 1817. *I. costatus* Penzig 174 p. 147—148 Taf. XXIII Fig. 10—11, Taf.  
 XXIV Fig. 1—3, Java.  
 1818. *I. favosus* Penz. 174 p. 148—150 Taf. XXIV Fig. 4—5 und Textfig.  
 p. 149. Java.  
 1819. *I. rugulosus* Ed. Fischer 54 p. 35—38 Taf V. Fig. 32—34 Java.  
 1820. *I. tenuis* Ed. Fischer 51 p. 45 Java; 54 p. 4—22 Taf. 1—3 Fig.  
 1—18, Java; 83 p. 65 (*Phallus tenuis* Ed. Fischer) Java; 131f p.  
 10 und 14 Fig. 3 (*Phallus tenuis*) Java; 174 p. 144—146 Taf.  
 XX II Fig. 6—9, Java.  
*Echinophallus Lauterbachii* Hennings 71 p. 36 (*Ityphallus*  
*Lauterbachii* Hennings) Deutsch Neu-Guinea; 131f p. 24 - 25 Fig.

- 20 (*Clautriavia Lauterbachii*) Deutsch Neu-Guinea; 214 p, 59 Deutsch Neu-Guinea.
1821. *Dictyophora callichroa* (Möll.) 131f p. 20 (*Phallus callichrous*) Java.
1822. *D. multicolor* Berk. et Br. 76 p, 22 (*Dictyophora echinata* Hennings et Nyman) Java; 131f p. 20 Fig 14 (*Phallus multicolor*) Java; 174 p. 154—157 Taf. XIX A, Java.
1823. *D. phalloidea* Desv. 60 p. 1—2 Sumatra; 74 p. 505 Deutsch Neu-Guinea; 76 p. 22 Sumatra; 83 p. 65 Java; 131f p. 18 Fig. 12 (*Phallus indusiatus*) Java, Borneo; 144 Java; 163 p. 120 Java; 174 p. 151—152 Taf. XVI, XVII Java; 215 p. 59 Deutsch Neu-Guinea; 219 p. 254 Deutsch Neu-Guinea; 273 Java.
- D. phalloidea* Desv. forma *aurantiaca* Hennings 214 p. 59 Deutsch Neu-Guinea.
1824. *D. phalloidea* Desv. var. *campanulata* Ed. Fischer 51 p. 31 (*Dictyophora campanulata* Nees.) Java; 51 p. 36 (*Dictyophora daemonum* Rumphius) Java; 54 p. 23—29 (*Dictyophora Campanulata* Nees.) Taf. III—IV Fig. 19—25 Java; 67a p. 301 (*Phallus daemonum* Rumph.) Java; 70 p. 222 Sumatra; 76 p. 22 Java; 131f p. 20 Fig. 15 (*Phallus daemonum*.) Ambon; 204 p. 131 Taf. LVI Fig. 7 (*Phallus daemonum*) Ambon; 271 p. 379 (*Phallus daemonum* Rumph.) Java; L.
1825. *D. phalloidea* var. *Lauterbachii* Fisscher 71 p. 36 Deutsch Neu-Guinea; 76 p. 32 Celebes.
1826. *D. rosea* (Ces.) Ed. Fischer 37 p. 12 (*Hymenophallus roseus* Ces.) Borneo; 51 p. 35 Borneo; 131f p. 20 (*Phallus roseus*) Java.
1827. *Clautriavia merulina* (Berk.) 33 p. 240 (*Dictyophora irpicina* Pat.) Java; 58 p. 126 (*Dictyophora irpicina* Pat.) Java; 131f p. 24 Fig. 19 Java; 166 p. 190 (*Dictyophora irpicina* Pat.) Java; 174 p. 152—154 Taf. XXIII, XXIV, Fig. 6—8, XXV Fig. 1 (*Dictyophora irpicina* Pat.) Java.

#### Hymenogastrineae.

#### Fam. Hymenogastraceae.

1828. *Hymenogaster javanicus* v. Höhnel 85 p. 33 Fig. 2 Java.
- H. mucosus* Petri 177 p. 130 Taf. II, Fig. 11, 13 16 Borneo.
- Octaviana bornensis* Petri 177 p. 128 Taf. II Fig. 12, 19, 20, Taf. III Fig. 4 Borneo.
- Clastrogaster* Beccari Petri 177 p. 126 Taf II Fig. 3—5, 7—9 Borneo.
- C. vulvarius* Petri 177 p. 126 Taf II Fig. 1—2, Taf. III 2, 3, 5—8, 10, 11—13, Taf. IV Borneo.
1829. *Hydnangium javanicum* Hennings 77 p. 27 Java; 85 p. 33 Java.

*Rhizopogon luteolus* Fr. 37 p. 12 (*Splanchnomyces luteus* Corda)  
Sarawak.

1830. *Lycogalopsis Solmsii* Ed. Fischer 53 p. 192—197 Java; 166  
p. 195 Java.

*Lycoperdineae.*

**Fam. Lycoperdaceae.**

1831. *Lycoperdon Bovista* Linn. 67a p. 301 (*Lycoperdon giganteum*  
Batsch.) Java; 70 p. 222 Java; 76 p. 23 Java; 109 p. 368 (*Bovista*  
*gigantea*) Java; 271 p. 378 (*Lycoperdon giganteum*) Java; 273 Java;  
B (*Bovista gigantea*.)
1832. *L. cyathiforme* Bosc. 76 p. (60) 158 Java.
1833. *L. furfuraceum* Schaeff. 107 p. (*Lycoperdon pusillum* Batsch)  
Java; 127 p. 220 (*Lycoperdon pusillum* Batsch) Java; 128 p. 614  
(*Lycoperdon pusillum* Batsch und *Lycoperdon farinaceum* Reinw.)  
Java; 142 p. 309 (*Lycoperdon pusillum* Batsch.) Java.
1834. *L. gemmatum* Batsch. 70 p. 222 Java; 76 p. 23 Java; 144 Java; 273 Java.
1835. *L. Henningsii* Sacc. 76 p. (60) 158 (*Lycoperdon pisiforme* Hennings)  
Java; 131a p. 233 Fig. 64 Java.
1836. *L. Kakavu* Lév. 67a p. 301 Java; 127 p. 220 Java; 128 p. 613 Java.
1837. *L. lignigenum* Hennings et Nyman 76 p. 23 Java.
1838. *L. ostiolatum* Pat. et Har. 167 p. 119 Java.
1839. *L. piriforme* Schaeff. 71 p. 36 Deutsch Neu-Guinea und Java; 76  
p. (60) 158 Java; 127 p. 230 Sumatra; 128 p. 613 Sumatra 214  
p. 59 Deutsch Neu-Guinea.
1840. *L. roseum* Zoll. 67a p. 301 Java; 274 p. 200—201 Java.  
*L. scrobiculatum* Ces. 37 p. 12 Sarawak.
1841. *L. uteriforme* Bull. 76 p. (60) 158 Java.
1842. *L. Wrightii* Berk. et Curt. 131b p. 171—272 Fig. 114 Java.  
*Caloderma echinatum* Petri 177 p. 132 Taf. II Fig. 10, 17, 18,  
Taf. III 9, 12 Sarawak.
1843. *Hippoperdon pyriforme* Lév. 129a p. 174 Java; 144 Java; 273 Java
1844. *Lycoperdopsis arcyrioides* Hennings et Nyman 60 p. 2—6  
Taf. I Fig. 1—5 Sumatra; 76 p. 23 (*Lycoperdon arcyrioides* Hennings  
et Nyman) Java; 76 p. (60) 158 Taf. V Fig. 5 Java; 91 p. 15 Java.
1845. *Bovista spumosa* Lév. 127 p. 219 Sumatra; 128 p. 613 Sumatra.
1846. *Geaster fimbriatus* Fries 76 p. (61) 159 Java; 135 p. 1015  
Verlateneiland.
1847. *G. javanicus* Lév. 129a p. 161 Java; 144 Java; 273 Java;
1848. *G. lageniformis* Vitt. 83 p. 65 Java.  
*G. minimus* Schw. 37 p. 12 Sarawak.
1849. *G. mirabilis* Mont. 166 p. 194 Java.
1850. *G. mirabilis* Mont. var. *substipitata* Hennings 76 p. 24 Taf.  
I Fig. 12 Java, Celebes.



1851. *G. stipitatus* Solms 57 p. 50—56 Taf. V Fig. 1—5 Java; 166 p. 194 Java.  
 1852. *G. striatus* De Cand. 76 p. (61) 159 Java.  
 1853. *G. triplex* Jungh. 108 p. 287—288 Fig. 1—3 Java; 142 p. 319 Java.  
 1854. *G. velutinus* Morgan 60 p. 6—10 Taf. I Fig. 6—8, Sumatra.  
 1855. *Lasiosphaera Tenzlii* Reichardt 131c p. 347 Sumatra

Fam. **Nidulariaceae.**

1856. *Cyathus byssisedus* (Jungh.) Tul. 9 p. 335 (*Nidularia byssiseda* Jungh.) Java; 37 p. 12 Sarawak; 67a (*Cyathus radicans* Zoll.) p. 301 Java; 107 p. 24—25 Fig. 12 (*Nidularia Byssiseda* Jungh.) Java; 142 p. 309 (*Nidularia byssiseda* Jungh.) Java; 144 (*Nidularia byssiseda* Jungh.) Java; 163 p. 120 Java; 271 p. 378 (*Cyathus Radicans* Zoll.) Java; 273 (*Nidularia byssiseda* Jungh.) Java; B; L.  
 1857. *C. Montagnei* Tul. 43 p. 56 Java.  
*C. Poepiggii* Tul. 221 Timor.  
 1858. *C. striatus* (Huds.) Hoffm. 70 p. 223 Java; 76 p. 24 Java.  
 1859. *Crucibulum vulgare* Tul. 128 p. 614 Sumatra.  
 1860. *Nidula emodensis* (Berk.) Lloyd var. *Heinricherii* Bres. 33 p. 240 Java.

## Plectobasidiineae.

Fam. **Sclerodermataceae.**

- Scleroderma Bovista* 40 p. 117 Englisch Neu-Guinea.  
*S. columnare* Berk. et Br. 37 p. 12 Sarawak.  
 1861. *S. lanosum* Pat. 166 p. 193 Java.  
 1862. *S. verrucosum* (Bull.) Pers. 33 p. 240 Java; 70 p. 223 Java; 76 p. 24 Java.  
 1863. *Scleroderma vulgare* Horn 33 p. 240 Java; 70 p. 223 Java; 76 p. 24 und p. (61) 159 Java; 83 p. 65 Java; 166 p. 193 Java; 214 p. 60 Deutsch Neu-Guinea.  
 1864. *S. vulgare* Horn. var. *bogoriensis* Hennings et Nyman 76 p. (61) 159 Java.  
*S. vulgare* Horn. var. *novo-guineense* Hennings 71 p. 37 Deutsch Neu-Guinea.  
 1865. *Pirogaster Fleischerianus* Hennings 77 p. (27) Fig. 1 und 2, Java.  
 1866. *Pisolithus Kisslingi* Fischer 60 p. 10—13 Taf. I Fig. 9—10, Sumatra.  
 1867. *Polygaster sampadarius* (Rumph.) Fr. 204 p. 123 (*Tuber sampadarius*) Ambon.

Fam. **Calostomaceae.**

1868. *Calostoma Junghuhni* (Schlechtend. et Müll.) Masee 131a p. 241 (*Mitremyces Junghuhni*) Java, Sumatra.

1869. *C. Sarasini* (Hennings) 76 p. 24 Taf. II Fig. 13 (*Mitremyces Sarasini* Hennings) Celebes.  
*C. insignis* (Berk.) 37 p. 12 Taf. II Fig. a et b (*Hussea insignis* Berk.) Sarawak.  
*C. pachystelis* (Ces.) 37 p. 13 Taf. II Fig. II a-c (*Hussea pachystelis* Ces.) Sarawak.

Fam. **Tulostomataceae.**

- Tulostoma exasperatum* Mont. 219 p. 253 Deutsch Neu-Guinea.  
*T. pusillum* Berk. 37 p. 12 Sarawak.

**Fungi imperfecti.**

Sphaeropsidales.

Fam. **Sphaerioidaceae.**

1870. *Phyllosticta Arthropylli* Koord. 119 p. 204 Abb. 24 1—4 Java.  
1871. *P. Chaesembillae* Koord. 119 p. 205 Java.  
1872. *P. Cinchonae* Koord. 119 p. 203 Abb. 1—5 Java.  
1873. *P. Cinchonicola* Rant 197 p. 3—4 Fig. 1a-c Java.  
1874. *P. Durionis* Zimm. 265 p. 217 Java.  
1875. *P. Elasticae* Koord. 119 p. 203 Java; 118 p. 304 Java.  
1876. *P. Heveae* Zimm. 206 p. 34 Taf. X Java; 269 p. 21 Java.  
1877. *P. Palaqui* Hennings 79 p. 144 Java.  
*P. papuensis* Cooke 41 p. 18 Englisch Neu-Guinea.  
1878. *P. Piperis* Hennings 79 p. 144 Java.  
1879. *P. ramicola* Petch 206 p. 26 Java.  
1880. *P. Roberti* Boy et Jac. 118 p. 304 Java; 119 p. 203 Java.  
*P. Stenotaphri* Thüm. 220 p. 5 Deutsch Neu-Guinea.  
1881. *P. Vanilla* Hennings 79 p. 144 Java; 91 p. 188 Java.  
1882. *Phoma acmella* Berk. 43 p. 56 Java.  
*P. aequivocum* Ces. 37 p. 25 Sarawak.  
1883. *P. seriata* Lév. 128 p. 618 Java.  
1884. *P. Zehntneri* Koord. 118 p. 304 Java; 119 p. 205 Abb. 26 Fig. 1—7, Java.  
*Macrophoma Pandani* Berl. et Vogl. 111 p. 3 Deutsch Neu-Guinea.  
1885. *Plenodomus Erythrinae* Oud. 264 p. 804 Java.  
1886. *Sphaeronaema grandisporum* v. Höhnelt 86 p. 128 Java.  
1887. *Sphaeronaemella macrospora* Penz. et Sacc. 175 p. 235 Java; 176 p. 93—94 Taf. LXII Fig. 4, Java; B.  
1888. *Sirococcus Elasticae* Koord. 119 p. 207 Java.  
*Sirosperma hypocrellae* Syd. 219 p. 258—259 Fig. 2a-c Deutsch Neu-Guinea.  
1889. *Vermicularia Dematium* (Pers.) Fr. 175 p. 233 Java; B.  
1890. *V. longiseta* Penz. et Sacc. 175 p. 233 Java; 176 p. 91 Taf. LX Fig. 3 Java; B.

1891. *Fusicoccum Elasticae* Koord. 118 p. 305 Java; 119 p. 208 Abb. 27 Fig. 1–6, Java.
1892. *Cytospora leucosperma* Fr. 107 p. 14 Java; 142 p. 309 Java.
1893. *Sphaeropsis citrinella* Lév. 128 p. 618 Java.
1894. *S. decipiens* Lév. 129a p. 294 Java; 144 Java; 273 Java.  
*S. undulata* Berk. et Curt. 37 p. 24 Sarawak.
1895. *Coniothyrium Coffeae* Zimm. 265 p. 216 Java; 267 p. 36–37 Fig. 23 Java.
1896. *C. Palaqui* Zimm. 269 p. 26 Java.
1897. *Haplosporella bogoriensis* Penz. et Sacc. 175 p. 233 Java; 176 p. 91 Taf. LX Fig. 4 Java; B.
1898. *H. dendritica* Rac. 190 Java.
1899. *Discomycopsella Bambusae* Hennings 79 p. 146 Java.
1900. *Diplodia Agave* Niessl. 265 p. 216 Java.
1901. *D. Arthrophylli* Penz. et Sacc. 175 p. 233 Java; 176 p. 91–92 Taf. LXI Fig. 1 Java; B.
1902. *D. Cinchonae* Koord. 119 p. 209 Java; 197 p. 23–24 Java.
1903. *D. coffeicola* Zimm. 265 p. 216 Java; 267 p. 74 Java; 268 Java.
1904. *D. Mangiferae* Koord. 119 p. 210 Java.
1905. *D. Mangostanae* Hennings et Nyman 76 p. 36 Java.
1906. *D. Papayae* Thüm. 175 p. 234 Java; B.
1907. *D. Wurthii* Koord. 118 p. 305 Java; 119 p. 154 Textabb. 4 Java.
1908. *Chaetodiplodia Coffeae* Zimm. 262 p. 143 Fig. 15 Java.
1909. *C. Vanilla* Zimm. 91 p. 190 Java; 266 p. 479 Fig. 9 Java.
1910. *Diplodiella Caryotae* Rac. 190 Java.
1911. *Botryodiplodia acacigena* Penz. et Sacc. 175 p. 234 Java; 176 p. 92 Taf. LXI Fig. Java; B.
1912. *B. longipes* Penz. et Sacc. 175 p. 234 Java; 176 p. 92 Taf. LXI Fig. 3 Java.
1913. *Stagonospora Cassavae* v. d. Wolk 253 p. 225–230 Fig. 1–10 Java.
1914. *S. disseminata* Rac. 190 Java.
1915. *Hendersonia Mangiferae* Koord. 118 p. 210 Java.
1916. *Angiopomopsis lophostoma* v. Höhnelt 93 p. 69 Fig. 6 Java.
1917. *Pellionella deformans* Penz. et Sacc. 175 p. 234 Java; 176 p. 92–93 Taf. LXI Fig. 4 Java; B.
1918. *Septoria brachyspora* Sacc. 118 p. 305 Java; 119 p. 212 Java.
1919. *S. Elasticae* Koord. 118 p. 305 Java; 119 p. 211 Abb. 28 Fig. 1–5 Java.
1920. *S. Oryzae* v. Breda de Haan 32 Java.
1921. *S. phlyctaenoides* Penz. et Sacc. 175 p. 235 Java; 176 p. 93 Taf. LXII Fig. 1 Java; B.
1922. *Rhabdospora Elettariae* Penz. et Sacc. 175 p. 235 Java; 176 p. 93 Taf. LXII Fig. 2 Java; B

*R. hystrix* Ces. 37 p. 23 Taf. IV Fig. Sarawak.

1923. *Phlyctaena variabilis* Penz. et Sacc. 175 p. 235 Java; 176 p. 93 Taf. LXII Fig. 3 Java; B.

Fam. **Nectrioidaceae.**

1924. *Zythia abnormis* Penz. et Sacc. 175 p. 236 Java; 176 p. 94 Taf. LXIII Fig. 1 Java; B.
1925. *Aschersonia basicystis* Berk. et Curt. 135 p. 1015 Verlateneiland. *A. caespiticia* Syd. 219 p. 260 Deutsch Neu-Guinea.
1926. *A. Coffea* Hennings 79 p. 145 Java.
1927. *A. Eugeniae* Koord. 119 p. 214 Abb. 31 Fig. 1—4 Java.
1928. *A. Henningsii* Koord. 119 p. 213 Abb. 30 Fig. 1—7 Java.
1929. *A. javanica* Penz. et Sacc. 175 p. 236 Java; 176 p. 94 Taf. LXIII Fig. 2 Java; B.
1930. *A. lecanoides* Hennings 79 p. 145 Java; 119 p. 212 Abb. 29 Fig. 1—5 Java.  
*A. novo-guineensis* Hennings 74 p. 509 Deutsch Neu-Guinea; 214 p. 64 Deutsch Neu-Guinea.
1931. *A. pediculoides* Hennings 79 p. 145 Java.
1932. *A. phthiurioides* Hennings 79 p. 145 Java.
1933. *A. sclerotioides* Hennings 79 p. 146 Java.
1934. *Trichosperma griseo-candidum* Penz. et Sacc. 175 p. 237 Java; 176 p. 96 Taf. LXIV Fig. 3 Java; B.

Fam. **Leptostromataceae.**

1935. *Diplopeltis Zimmermanniana* Hennings 79 p. 146 Java.
1936. *Actinothyrium minutum* v. Höhnelt 88 p. 78 Java.
1937. *Amerosporium Vanillae* Hennings 79 p. 146-147 Java.

Fam. **Excipulaceae.**

1938. *Excipula oospora* Penz. et Sacc. 175 p. 237 Java; 176 p. 95 Taf. LXIV Fig. 1 Java; B.
1939. *Phaeodiscula gonospora* Penz. et Sacc. 175 p. 23 Java; 176 p. 94—95 Taf. LXIII Fig. 3 Java; B
1940. *P. gonospora* Penz. et Sacc. subsp. *atrata* Penz. et Sacc. 175 p. 236 Java; 176 p. 95 Taf. LXIII Fig. 4 Java; B.
1941. *P. gonospora* Penz. et Sacc. subsp. *atrata* Penz. et Sacc. 175 p. 237 Java; 176 p. 95 Java.
1942. *P. gonospora* Penz. et Sacc. subsp. *minutella* Penz. et Sacc. 175 p. 237 Java; 176 p. 95 Java; B.
1943. *Schizothyrium Aceris* (Hennings et Lindau) Pat. 163 p. 123 (*Schizothyrium Aceris-laurini* Pat.) Java; 190 Java; B.
1944. *Oncospora Pezizella* Penz. et Sacc. 175 p. 237 Java; 176 p. 95—96 Taf. LXIV Fig. 2 Java; B.
1945. *Ephelis Rhynchosporae* Hennings 76 p. 37 Java.

## Melanconiales.

Fam. **Melanconiaceae.**

1946. *Hainesia Tellingsii* Koord. 119 p. 215 Abb. 32 Fig. 1—3 Java.
1947. *Gloeosporium albo-rubrum* Petch 206 p. 26 Taf. V Java.
1948. *G. anceps* Penz. et Sacc. 175 p. 238 Java; 176 p. 96 Taf. LXIV Fig. 4 Java; B.
1949. *G. Bischofia* Koord. 119 p. 215 Java.
1950. *G. coffeanum* Delacroix 265 p. 217 Java; 267 p. 34-36 Fig. 22 Java; 268 Java.
1951. *G. Elasticae* Cooke et Masee 116 Java; 117 Java; 118 p. 306 (*Colletotrichum Ficus* Koord.) Java; 118 p. 306 Java; 119 p. 10 (*Colletotrichum Ficus* Koord.) Java; 119 p. 10 und p. 218 Java; 269 p. 17, 21 Java.
1952. *G. Garcinia* Koord. 119 p. 217 Abb. 33 Fig. 1 Java.
1953. *G. hysterioides* Ell. et Ev. 119 p. 216 Java.
1954. *G. Mangiferae* Rac. 119 p. 216 Java; 190 Java; B.
1955. *G. Pithecolobiae* Koord. 119 p. 216 Java.
1956. *G. Ptychospermatis* Hennings 79 p. 147 Java.
1957. *Myxosporium candidissimum* Rac. 119 p. 218 Abb. 34 Java; 190 Java; B.
1958. *M. Meliae* Zimm. 264 p. 804 Java; 265 p. 218 Java.
1959. *M. Theobromae* v. Breda de Haan 32 Java; 263 p. 923 Java.
1960. *Pestalozziella longiseta* (Rac.) v. Höhnelt 87 p. 79 (*Neottiospora longiseta* Rac.) Java; 190 (*Neottiospora longiseta* Rac.) Java.
1961. *Colletotrichum Anthurii* Delacroix 87 p. 80 Java.
1962. *C. Camelliae* Masee p. 147 Java; B.
1963. *C. Canangae* Koord. 119 p. 220 Abb. 33 Fig. 3 Java.
1964. *C. Cinchonae* Koord. 118 p. 307 Java; 119 p. 220 Java; 197 p. 4 Java.
1965. *C. Durionis* Koord. 119 p. 218 Abb. 33 Fig. 4 Java.
1966. *C. Elasticae* Tassi 116 Java; 118 p. 306 Java; 119 p. 19 und 123 Java; 255 Java; 269 p. 16 Java.
1967. *C. Erythrinae* Koord. 119 p. 219 Abb. 33 Fig. 2 Java.
1968. *C. falcatum* Went 181 Java; 229 Java; 230 Java; 236 Java; 241 Java; 244 Java.
1969. *C. incarnatum* Zimm. 262 p. 143 Fig. 16-17 Java; 266 p. 480 Java; 267 p. 37-38 Fig. 24 Java; 268 Java.
1970. *C. macrosporum* Sacc. 266 p. 480 Java.
1971. *C. minus* Zimm. 269 p. 26 Java.
1972. *C. Palaqui* Zimm. 269 p. 26 Java.
1973. *C. Pothi* Koord. 119 p. 219 Java.
1974. *C. Theae* Zimm. 464a p. 647 Java.
1975. *Melanconium Oryzae* v. Breda de Haan 32 Java.

1976. *M. Palaqui* Zimmerm. 269 p. 27 Java.  
 1977. *M. profundum* Penz. et Sacc. 175 p. 239 Java; 176 p. 97 Taf. LXV Fig. 4 Java; B.  
 1978. *M. Sacchari* Masee 175 p. 238 Java; 249 Java; B.  
 1979. *M. Saccharinum* Penz. et Sacc. 175 p. 238 Java; 176 p. 97 Taf. LXV Fig. 3 Java; B.  
 1980. *M. sphaerospermum* (Pers.) Link 175 p. 238 Java; 176 p. 96 Java.  
 1981. *M. sphaerospermum* (Pers.) Link subsp. *Bambusarum* Penz. et Sacc. 175 p. 238 Java; 176 p. 96-97 Taf. LXV Fig. 2 Java.  
 1982. *Marsonia Tetracerae* Rac. 190 Java.  
 1983. *Didymosporum exsulatum* Jungh. 107 p. 3 Taf. 1 Fig. 1 Java; 142 p. 307 Java.  
 1984. *Septogloeum Arachidis* Rac. 31 p. 55 Java; 187 p. 66-67 Java; 190 Java; B.  
 1985. *S. Elasticae* Koord. 118 p. 307 Java; 119 p. 220 Abb. 35 Fig. 1-5 Java.  
 1986. *S. Manihotis* Zimm. 265 p. 218 Java.  
 1987. *Pestalozzia Canangae* Koord. 119 p. 224 Java;  
 1988. *P. Cinchonae* Zimm. 197 p. 40-41 Fig. 24a-b Java.  
 1989. *P. Cinnamomi* v. Breda de Haan 32 Java.  
 1990. *P. Coffeae* Zimm. 267 p. 74-75 Fig. 45 Java; 268 Java.  
 1991. *P. Elasticae* Koord. 118 p. 307 Java; 119 p. 223 Java.  
 1992. *P. funerea* Desm. 175 p. 239 Java; B.  
 1993. *P. leucodisca* Penz. et Sacc. 175 p. 239 Java; 176 p. 97 Taf. LXI Fig. 1 Java; B.  
 1994. *P. monochaeta* Desm. 190 Java.  
 1995. *P. Myricae* Koord. 119 p. 224 Abb. 33 Taf. V. Java.  
 1996. *P. palmarum* Cooke 12 p. 313 Java; 12a Java; 13 Java; 15 Java; 17 Java; 18 Java; 19 p. 327 Java; 20 Java; 23a Java; 24 p. 4 Sumatra; 112 p. 612 Java; 113 p. 624 Java; 119 p. 223 Java; 168 p. 47 Java; 190 Java; B.

### Hyphomycetes.

#### Fam. *Mucedinaceae*.

1997. *Chromosporium pallens* Penz. et Sacc. 175 p. 239 Java; 176 p. 98 Taf. LXVI Fig. 2 Java; B.  
 1998. *Oospora carneola* Sacc. 175 p. 239 Java; B.  
 1999. *Monilia javanica* Went et Prinsen Geerligs 242 p. 8 Taf. I Fig. 1-4 Java.  
 2000. *M. sitophila* (Mont.) Sacc. 67a p. 289—290, 328 Java; 95 p. 55 Java; 221a p. 274 Java; 245 Java; 246 Java; 247 Java; 247a p. 106—119 Java.  
 2001. *Moniliopsis Aderholdi* Ruhl. 199 Java.  
 2002. *Oidium Tabaci* Thüm 190 Java; B.

2003. *Cylindrium fugax* Penz. et Sacc. 175 p. 240 Java; 176 p. 98 Taf. LXVI Fig. 4 Java.
2004. *Oedocephalum macrosporum* Penz. et Sacc. 175 p. 242 Java; 176 p. 99 Taf. LXVII Fig. 3 Java; B.
2005. *Allantospora raditicola* Wakker 228 Java; 230 Java.
2006. *Cephalosporium Lecanii* Zimm. 270 p. 241 Java.
2007. *Trichoderma lignorum* (Tode) Harz 175 p. 240 Java; B.
2008. *Aspergillus atro-purpureus* Zimm. 265 p. 218 Java; 267 p. 75 Fig. 46 Java; 268 Java.
2009. *A. candidus* Link. 175 p. 240 Java; B.
2010. *A. candidus* Link subsp. *tjibodensis* Penz. et Sacc. 175 p. 240 Java; B.
2011. *A. niger* v. *Tieghem* 119 p. 225 Java.
2012. *A. Oryzae* Went 67a p. 318—319 Java.
2013. *A. parasiticus* Speare 62a Java.
2014. *A. Penicilliopsis* Hennings 83 p. 65 Java; 190 Java; 192 Java; B.
2015. *A. sulfureus* Wehmer 119 p. 225 Java.
2016. *Penicillium candidum* Link 175 p. 241 Java; B.
2017. *P. cicadinum* v. *Höhnel* 86 p. 131 Java.
2018. *P. nigrescens* Jungh. 107 p. 5 Fig. 3 Java; 142 p. 307 Java.
2019. *Gliocladium pulchellum* Penz. et Sacc. 175 p. 242 Java; 176 p. 99 Taf. LXVII Fig. 4 Java.
2020. *Ovularia Bixae* Rac. 119 p. 226 Java; 190 Java; 264 p. 854 Java; B.
2021. *Sporotrichum radicololum* Zimm. 265 p. 218 Java; 267 p. 61—62 Fig. 39 Java; 268 Java.
2022. *Xenopus farinosus* Penz. et Sacc. 175 p. 240 Java; 176 p. 98 Taf. LXVI Fig. 3 Java; B.
2023. *Botrytis monilioides* Penz. et Sacc. 175 p. 241 Java; 176 p. 98—99 Taf. LXVII Fig. 1 Java.
2024. *B. ramosa* Pers. 129 p. 608 Java, Sumatra.
2025. *B. tenella* Sacc. 175 p. 241 Java.
2026. *B. vulgaris* Fr. 175 p. 241 Java; B.
2027. *Physospora spiralis* Penz. et Sacc. 175 p. 241 Java; 176 p. 99 Taf. LXVII Fig. 2 Java; B.
2028. *Sepedonium chrysospermum* (Bull.) Fr. 175 p. 240 Java.
2029. *Verticillium Sacchari* Went. 237 Java.
2030. *Acrostalagnus cinnabarinus* Corda 175 p. 241 Java; B.
2031. *Spicaria elegans* (Corda) Harz, 175 p. 241 Java.
2032. *Trichothecium javanicum* Koord. 119 p. 226 Abb. 36 Fig. 1—5 Java.
2033. *T. mutatum* Jungh. 107 p. 4 Fig. 2 Java; 142 p. 307 Java.
2034. *Cephalothecium roseum* Corda 175 p. 242 Java; B.  
*Arthrobotryon Beccarianum* Ces. 37 p. 25 Sarawak.
2035. *Mycogone echinulata* Penz. et Sacc. 175 p. 242 Java; 176 p. 100 Taf. LXVIII Fig. 1 Java; B.

2036. *M. flava* Zimm. 265 p. 218 Java.  
 2037. *Ramularia Batatae* Rac. 190 Java.  
 2038. *R. Catappae* Rac. 190 Java; 47 p. 68 Krakatau; 119 p. 226 Java.  
 2039. *R. Eriodendri* Rac 15 Java; 190 Java; 264 p. 804 Java; B.  
 2040. *R. Scaevolae* Rac. 190 Java; B.  
 2041. *R. undulata* Bern. 18 Java.  
 2042. *Cercospora atropunctata* Rac. 190 Java.  
 2043. *Trinacrium subtile* Riess subsp. *tjibodense* Penz. et Sacc. 175 p. 243 Java; B.  
 2044. *Tripodosporina uredinicola* v. Höhnelt 93 p. 73 Fig. 7 Java.

Fam. **Dematiaceae.**

2045. *Coniosporium Bambusae* Thüm. 175 p. 243 Java; 176 p. 100 Taf. LXVIII Fig. 2 Java; B.  
 2046. *Torula bogoriensis-rubra* de Kruyff 197a Java.  
 2047. *T. glomerulosa* Penz. et Sacc. 175 p. 243 Java; 176 p. 100 Taf. LXVIII Fig. 3 Java; B.  
 2048. *T. heteromorpha* Penz. et Sacc. 175 p. 244 Java; 176 p. 100 Taf. LXVIII Fig. 4 Java; B.  
 2049. *Hormiscium pannosum* (Aut.?) 197 p. 25—26 Fig. 15 Java.  
 2050. *Thielaviopsis paradoxa* (de Seynes) v. Höhnelt 113 p. 627 Java; 225 Java; 229 Java; 230 Java; 238 Java; 240 Java; (überal als *Thielaviopsis ethacetica* Went.) B.  
 2051. *Stachybotrys Elasticae* Koord. 118 p. 307 Java; 119 p. 227 Taf. 1—5 Abb. 37 Fig. 1—5 Java.  
 2052. *Periconia Coffeae* Zimm. 262 p. 144 Fig. 18 Java.  
 2053. *P. Elasticae* Koord. 118 p. 308 Java; 119 p. 229 Abb. 39 Fig. 1—6 Java.  
 2054. *P. javanica* Koord. 118 p. 307 Java; 119 p. 228 Abb. 38 Fig. 1—6 Java.  
 2055. *P. nigripes* (Peck) Sacc. 175 p. 244 Java; B.  
 2056. *P. Pusaethae* v. Höhnelt 93 p. 73 Java.  
 2057. *P. pycnospora* Fres. 175 p. 244 Java.  
 2058. *Trichobotrys pannosa* Penz. et Sacc. 175 p. 245 Java; 176 p. 101 Taf. LXIX Fig. 2 Java; B.  
 2059. *Nigrospora javanica* Palm 160 p. 17 Java.  
 2060. *N. Panici* Zimm. 160 p. 18 Fig. 11 Java; 265 p. 220 Fig. 7 Java.  
 2061. *Trichosporium arborescens* Penz. et Sacc. 175 p. 245 Java; 176 p. 101—102 Taf. LXIX Fig. 3 Java; B.  
 2062. *T. Cerealis* (Thüm.) Sacc. 175 p. 245 Java; B.  
 2063. *T. muricatum* Wakker 230 Java.  
 2064. *T. olivatum* Sacc. 175 p. 245 Java; B.  
 2065. *Campsotrichum elegans* Penz. et Sacc. 175 p. 244 Java; 176 p. 101 Taf. LXIX Fig. 1 Java; B.



2066. *Glenospora Elasticae* Koord. 119 p. 230 Abb. 40 Java.  
*Sporoglena velutina* Sacc. 71 p. 40 Deutsch Neu-Guinea; 214 p. 64 Deutsch Neu-Guinea.
2067. *Catenularia echinata* Wakker 230 Java.
2068. *C. Elasticae* Koord. 118 p. 308 Java; 119 p. 230 Abb. 41 Fig. 1—4 Java.
2069. *Circinotrichum microspermum* v. Höhnelt 86 p. 137 Java.  
*Chloridium microsporum* Ces. 37 p. 26 Sarawak.  
*C. lunulatum* Ces. 37 p. 25—26 Sarawak.
2070. *Fusicladium Elasticae* Koord. 118 op. 308 Java; 119 p. 231 Abb. 42 Java.
2071. *F. Vanillae* Zimmerm. 131 p. 195 Java; 266 p. 480 Fig. 10 Java.
2072. *Scolecotrichum Cinnamomi* Rac. 190 Java.
2073. *S. Musae* Zimm. 265 p. 220 Java.
2074. *Cladosporium javanicum* Wakker 228 Java; 230 Java.
2075. *Cladotrichum mitratum* Penz. et Sacc. 175 p. 246 Java; 176 p. 102 Taf. LXIX Fig. 4 Java; B.
2076. *C. socium* Penz. et Sacc. 176 p. 34 Java.
2077. *Clasterosporium Elasticae* Koord. 118 p. 308 Java; 119 p. 232 Abb. 43 Java.
2078. *C. javanicum* Koord. 118 p. 308 Java; 119 p. 232 Abb. 44 Java.
2079. *Helminthosporium bogoriense* Penz. et Sacc. 175 p. 247 Java; 176 p. 103 Taf. LXX Fig. 3 Java B.  
*H. decorum* Ces. 37 p. 25 Taf IV Sarawak.
2080. *H. Elasticae* Koord. 118 p. 308 Java; 119 p. 233 Abb. 45 Java.
2081. *H. geniculatum* Tracy et Earle 160 p. 15 Fig. 9, 10 Java.
2082. *H. gigasporum* Berk. et Br. subsp. *javanicum* Penz. et Sacc. 175 p. 247 Java; 176 p. 103-104 Taf. LXX Fig. 4 Java; B.
2083. *H. gramineum* Rab. Java; 160 p. 13 Fig. 7—8 Java.
2084. *H. incurvatum* Bern. 15 Java.
2085. *H. macrocarpum* Grev. 175 p. 247 Java; B.
2086. *H. nodipes* Penz. et Sacc. 175 p. 246 Java; 176 p. 103 Taf. LXX Fig. 2 Java; B.
2087. *H. Oryzae* v. Breda de Haan 32 Java.
2088. *H. Ravenelii* Berk. et Curt. 79 p. 147 (*Helminthosporium crustaceum* Hennings) Java; 87 p. 81 Java.
2089. *H. Theae* Bern. 18 Java; 21 Java; 190 Java.
2090. *Brachysporium obovatum* (Berk.) Sacc. 175 p. 247 Java; 176 p. 104 Java; B.
2091. *Napicladium Elasticae* Koord. 118 p. 308 Java; 119 p. 234 Abb. 46 Java.
2092. *N. Andropogonis* Zimm. 265 p. 219 Fig. 6 Java.
2093. *N. Janseanum* Rac. 101 p. 439 (Omo mentek) Java; 190 Java.
2094. *Acrothecium lunatum* Wakker 230 Java.

2095. *Acrotheciella javanica* Koord. 118 p. 309 Java; 119 p. 251 Abb. 61 Java.
2096. *Sporodesmium bogoriense* Penz. et Sacc 175 p. 248 Java; 176 p. 104 Taf. LXXI Fig. 1 Java; B.
2097. *S. Cinchonae* Koord. 119 p. 234, 235 Abb. 46 Java; 197 p. 29—30 Fig. 16 Java.  
*S. cirrhatum* Ces. 37 p. 26 Sarawak  
*S. erineoides* Ces. 37 p. 26 Fig. IV Sarawak.
2098. *S. tenellum* Penz. et Sacc. 175 p. 243 Java; 176 p. 104 Taf. LXXI Fig. 2 Java.
2099. *Xenosporium mirabile* Penz. et Sacc. 175 p. 248 Java; 176 p. 105 Taf. LXXI Fig. 3 Java; B.
2100. *Macrosporium commune* Rabenh. 119 p. 236 Java.
2101. *M. fici* Ell. et Koll. 47 p. 68 Krakatau.
2102. *M. Solani* Ell. 198 p. 286 Java; 250 p. 6 Java.
2103. *Alternaria pulvinata* C. et M. 43 p. 56 Java.
2104. *Fumago vagans* Pers. 197 p. 5 Java.
2105. *Cercospora Amorphophalli* Hennings 79 p. 147—148 Java.
2106. *C. coffeicola* Cooke 264a p. 641 Java; 265 p. 219 Java; 267 p. 38—40 Fig. 25 Java; 268 Java.
2107. *C. coffeifoliella* Zimm. 260 p. 441 Java.
2108. *C. Elasticae* Zimm. 118 p. 308 Java; 119 p. 237 Abb. 48 Java; 237 p. 17 Java.
2109. *C. Koepkei* Krüger 125 Java; 229 Java; 239 Taf. III Fig. 2 p. 6 Java.
2110. *C. Mangiferae* Koord. 119 p. 236—237 Abb. 47 Java.
2111. *C. Musae* Zimm. 265 p. 219 Java.
2112. *C. nicotianae* Ell. en Ev. 100 p. 10—13 Sumatra; 190 Java.
2113. *C. Rhynacanthi* v. Höhnel 93 p. 76 Java.
2114. *C. Sacchari* v. Breda de Haan 229 Java; 239 p. 5 Taf. III Fig. 1 Java.
2115. *C. Theae* v. Breda de Haan 32 Java; 264 p. 53 Java.
2116. *C. Timorensis* Cooke 38 p. 38 Timor.
2117. *C. Ubi* Rac. 190 Java.
2118. *C. vaginae* Krüg. 125 Java; 224 Java; 229 Java; 239 Taf. I Fig. 1 p. 4; p. 6 Taf. III Fig. 2 Java.
2119. *C. Vignae* Rac. 187 p. 66 Java.
2120. *C. Villebruneae* v. Höhnel 93 p. 75 Java.
2121. *Helicosporium intermedium* Penz. et Sacc. 175 p. 249 Java; 176 p. 105 Taf. LXXI Fig. 4 Java; B.
2122. *H. intermedium* Penz. et Sacc. var. *palmigenum* Penz. et Sacc. 175 p. 249 Java; 176 p. 105 Java.

Fam. **Stilbaceae.**

2123. *Stilbella candidula* (Penz. et Sacc.) 175 p. 249 (*Stibum candidulum* Penz. et Sacc.) Java; 176 p. 106 Taf. LXXII Fig. 2

- (*Stilbum candidulum* Penz. et Sacc.) Java; B.
2124. *S. cinnabarina* (Mont.) 175 p. 249 (*Stilbum cinnabarinum*) Java; 219 p. 261 *Deutsch Neu-Guinea*: 273 (*Stilbum cinnabarinum* Mont.) Java; B.
- S. clavulata* (Ces.) 37 p. 25 (*Stilbum clavulatum* Ces.) Sarawak.
2125. *S. Coffeae* (Zimm.) 262 p. 144 Fig. 19 (*Stilbum Coffeae* Zimm.) Java.
2126. *S. Elasticae* Koord. 118 p. 308 Java; 119 p. 238 Abb. 49 Java.
2127. *S. fructigena* (Penz. et Sacc.) 175 p. 250 (*Stilbum fructigenum* Penz. et Sacc.) Java; 176 p. 106—107 Taf. LXXIII Fig. 1 (*Stilbum fructigenum* Penz. et Sacc.) Java; B.
2128. *S. Heveae* (Zimm.) Bern. 20 Java; 79 p. 148 Java; 269 p. 21 (*Stilbum Heveae* Zimm.) Java.
2129. *S. incarnata* (Jungh.) 107 p. 6—7 Fig. 4 (*Stilbum incarnatum* Jungh.) Java; 142 p. 307 (*Stilbum incarnatum* Jungh.) Java; 230 (*Stilbum incarnatum* Wakker) Java.
2130. *S. javanica* (Hennings) 70 p. 227 Taf. VIII Fig. 7 (*Stilbum javanicum* Hennings) Java.
- S. Ledermannii* Syd. 119 p. 26 *Deutsch Neu-Guinea*.
2131. *S. longipes* (Penz. et Sacc.) 175 p. 251 (*Stilbum longipes*) Java; 176 p. 107 Taf. LXXIII Fig. 4 (*Stilbum longipes*) Java; B.
2132. *S. macrospora* (Penz. et Sacc.) 175 p. 249 (*Stilbum macrosporum*) Java; 176 p. 105—106 Taf. LXXII Fig. 1 (*Stilbum macrosporum* Penz. et Sacc.) Java; B.
2133. *S. minutula* (Penz. et Sacc.) Rant 175 p. 250 (*Stilbum minutulum*) Java; 176 p. 106 Taf. LXXII Fig. 4 (*Stilbum minutulum*) Java; 197 p. 24—25 Fig. 14a-d Java; B.
2134. *S. nana* Bern. 21 Java; 64 Java.
2135. *S. ochroleuca* (Penz. et Sacc.) 175 p. 250 (*Stilbum ochroleum*) Java; 176 p. 106 Taf. LXXII Fig. 3 (*Stilbum ochroleucum*) Java;
2136. *S. pallidula* (Penz. et Sacc.) 175 p. 250 (*Stilbum pallidulum*) Java; 176 p. 107 Taf. LXXIII Fig. 2 (*Stilbum pallidulum* Penz. et Sacc.) Java; B.
2137. *S. parviceps* (Penz. et Sacc.) 175 p. 250 (*Stilbum parviceps*) Java; 176 p. 107 Taf. LXXIII Fig. 3 (*Stilbum parviceps*) Java.
2138. *S. perexigua* (Penz. et Sacc.) 175 p. 251 (*Stilbum perexiguum*) Java; 176 p. 107-108 Taf. LXXIV Fig. 1 (*Stilbum perexiguum*) Java.
2139. *S. pistillaris* (Lév.) 129 p. 608 (*Stilbum pistillare*) Java.
2140. *S. rigida* (Pers.) 107 p. 5 (*Stilbum rigidum* Pers.) Java; 142 p. 307 (*Stilbum rigidum*) Java.
2141. *S. Theae* Bern. 18 Java; 21 Java.
2142. *Corallo dendron leucocephalum* Jungh. 107 p. 7 Fig. 5 Java; 142 p. 307 Java.
2143. *Ciliciopodium macrosporum* Penz. et Sacc. 175 p. 252 Java; 176 p. 109 Taf. LXXV Fig. 2 Java. B.

2144. *Actiniceps Thwaitesii* Berk. et Br. 118 p. 308 Java; 119 p. 239 Java; 175 p. 251 Java; 176 p. 108 Taf. LXXIV Fig. 2 Java.
2145. *CoremiumElasticae* Koord. 118 p. 308 Java; 119 p. 239 Abb. 50 Java.
2146. *Lindaumyces javanicus* Koord. 118 p. 308 Java; 119 p. 240 Abb. 51 Java.
2147. *Isaria abietina* v. Höhnel 86 p. 142 Fig. 28 Java.
2148. *I. albo-rosea* Penz. et Sacc. 175 p. 252 Java; 176 p. 108 Taf. LXXIV Fig. 4 Java.
2149. *I. amorpha* v. Höhnel 86 p. 141 Java.
2150. *I. crinita* Lloyd 134 p. 951 Java.
2151. *I. dendroidea* Jungh. 107 p. 7 Fig. 6 Java; 142 p. 308 Java.
2152. *I. gracilis* Vosseler 86 p. 140 Java.
2153. *I. rammosissima* Zoll. et Morr. 67a p. 300 Java; 271 p. 376 Java.
2154. *I. thyrsoides* Penz. et Sacc. 175 p. 251 Java; 176 p. 108 Taf. LXXIV Fig. 3 Java.
2155. *I. destructor* Sor. 131b (*Metarrhizum Anisopliae* (Sor.)) Java.
2156. *Gibellula elegans* Hennings 79 p. 148 Java.
2157. *G. eximia* v. Höhnel 86 p. 143 Java.
2158. *G. phialobasia* Penz. et Sacc. 175 p. 252 Java; 176 p. 108-109 Taf. LXXV Fig. 1 Java.
2159. *Arthrosporium chrysocephalum* Penz. et Sacc. 175 p. 253 Java; 176 p. 109 Taf. LXXV Fig. 4 Java; B.
2160. *A. tenue* Penz. et Sacc. 175 p. 253 Java; 176 p. 109 Taf. LXXV Fig. 3 Java.
2161. *Graphium Coffeae* Zimm. 262 p. 145 Fig. 22 Java.
2162. *G. coralloides* (Berk. et C.) v. Höhnel 87 (*Cordierites coralloides* Berk. et C.) Java.
2163. *G. Desmazierii* Sacc. 175 p. 253 Java; B.
2164. *G. leucophaeum* Penz. et Sacc. 175 p. 253 Java; 176 p. 110 Taf. LXXVI Fig. 1 Java; B.  
*G. stilboides* Corda 121 Timor.
2165. *Sporocybe acicularis* Penz. et Sacc. 175 p. 254 Java; 176 p. 110 Taf. LXXVI Fig. 3 Java; B.
2166. *S. apiculata* Penz. et Sacc. 175 p. 254 Java; 176 p. 110 Taf. LXXVI Fig. 2 Java; B.
2167. *S. longicapitata* Zimm. 262 p. 145 Fig. 21 Java.
2168. *S. minuta* Zimm. 262 p. 145 Fig. 20 Java.
2169. *S. subulata* Berk. 142 p. 56 (*Pachnocybe subulata* Berk.) Java.
2170. *Harpographium nematosporum* Penz. et Sacc. 175 p. 255 Java; 176 p. 112 Taf. LXXVIII Fig. 1 Java; B.
2171. *Macrostilbum radicosum* Pat. 166 p. 197 Java.
2172. *Rhombostilbella rosea* Zimm. 265 p. 221 Java; 267 p. 44—45 Fig. 30 Java; 268 Java.

2173. *Stilbothamnium javanicum* Hennings et Nyman 76 p. 37 Java.  
*S. novo-guineense* Syd. 219 p. 261 Deutsch Neu-Guinea.
2174. *S. Penicillopsis* Hennings et Nyman 76 p. 37 Java.
2175. *S. togoënsis* Hennings 92 p. 21 Java.
2176. *Anthromycopsis Broussonetiae* Pat. et Trab. subsp. minor  
 Penz. et Sacc. 175 p. 154 Java; 176 p. LXXVI Fig. 4 p. 110—111 Java; B.
2177. *Didymobotryum atrum* Pat. 175 p. 254 Java; 176 p. 111  
 Taf. LXXVII Fig. 1 Java.
2178. *D. atrum* Pat. subsp. *pachysporum* Penz. et Sacc. 175 p. 25 Java;  
 176 p. 111 Taf. LXXVII Fig. 1b Java; B.
2179. *D. obesum* Penz. et Sacc. 175 p. 255 Java; 176 p. 111 Taf. LXXVII  
 Fig. 2 Java; B.
2180. *Didymobotryopsis parasitica* Hennings 79 p. 149 Java.
2181. *Didymostilbe Coffeae* Hennings 79 p. 148 Java.
2182. *Podosporium Casuarina* Penz. et Sacc. 175 p. 255 Java; 176  
 p. 111 Taf. LXXVII Fig. 3 Java; B.
2183. *P. tjibodense* Penz. et Sacc. 175 p. 255 Java; 176 p. 111—112  
 Taf. LXXVII Fig. 4 Java; B.  
*Sarophorum Ledermannii* Syd. 219 p. 260—261 Fig 3a-d. Deutsch  
 Neu-Guinea.

Fam. **Tuberculariaceae.**

2184. *Hymenula Elasticae* Koord. 118 p. 309 Java; 119 p. 241 Abb. 52 Java.
2185. *H. inaequalis* Penz. et Sacc. 175 p. 257 Java; 176 p. 113  
 Taf. LXXIX Fig. 1 Java; B.
2186. *H. tjibodensis* Penz. et Sacc. 175 p. 256 Java; 176 p. 113  
 Taf. LXXVIII Fig. 4 Java; B.
2187. *Tubercularia persicina* Ditm. 190 Java.
2188. *T. vulgaris* Tode 107 p. 4 Java; 142 p. 307 Java.
2189. *Tuberculariopsis anomala* v. Höhnelt 86 p. 147 Java.
2190. *Beniowskia graminis* Rac. 190 II p. 37 Java; B.
2191. *Basidiobotrys Clautriavii* (Pat.) v. Höhnelt 86 p. 146 Fig. 29  
 Java; 166 p. 196 (*Ceratocladium Clautriavii* Pat.) Java.
2192. *Dendroochium javanicum* Penz. et Sacc. 175 p. 256 Java;  
 176 p. 112—113 Taf. LXXVIII 3 Fig. Java; B.
2193. *Dacrymycella Beyerinckii* Koord. 118 p. 309 Java; 119 p. 241  
 Abb. 53 Java.
2194. *Illosporium aureolum* Penz. et Sacc. 175 p. 256 Java; 176  
 p. 112 Taf. LXXVIII Fig. 2 Java; B.
2195. *Sphaeridium javense* v. Höhnelt 86 p. 149 Java.
2196. *Cylindricolla succinea* Penz. et Sacc. 175 p. 257 Java; 176  
 p. 114 Taf. LXXIX Fig. 3 Java; B.
2197. *Necator decretus* Masee 118 p. 309 Java; 119 p. 242 Abb. 54  
 Java; 194 p. 410 Fig. 4 Java; 195 p. 9 Taf. IV—X Java; 196 Java; 262

- p. 145—147 Fig. 23—24 Java; 264 p. 53 Java; 267 p. 53—54 Fig. 35—36 Java; 268 Java.
2198. *Chaetospermum Elasticae* Koord. 118 p. 309 Java; 119 p. 244 Abb. 55 Java.
2199. *Thozetia nivea* Berk. 86 p. 149 Java.
2200. *Volutella Elasticae* Koord. 118 p. 309 Java; 119 p. 245 Abb. 56 Java.
2201. *V. javanica* v. Höhnel 86 p. 151 Fig. 31 Java.
2202. *V. minima* v. Höhnel 89 p. 83 Java.
2203. *Volutina concentrica* Penz. et Sacc. 175 p. 257 Java; 176 p. 114 Taf. LXXIX Fig. 2 Java; B.
2204. *Patouillardiella javanica* Penz. et Sacc. 175 p. 258 Java; 176 p. 114 Taf. LXXIX Fig. 4 Java; B.
2205. *Pithomyces flavus* Berk. et Br. 91 p. 52 Java; 175 p. 246 (*Neomichelia melaxantha* Penz. et Sacc.) Java; 176 p. 102—103 Taf. LXX Fig. 1 (*Neomichelia melaxantha* Penz. et Sacc.) Java; B (*Neomichelia melaxantha* Penz. et Sacc.).
2206. *Amallospora Dacrydion* Penz. 175 p. 258 Java; 172 Java; B.
2207. *Fusarium colorans* de Jonge 205 Java.
2208. *F. Derrides* Henn. 80 p. (66) Neu-Guinea; 215 p. 29 Deutsch Neu-Guinea.
2209. *F. javanicum* Koord. 118 p. 309 Java; 119 p. 247 Abb. 58 Java.
2210. *F. rostratum* Appel et Wollenw. 160 p. 9 Pl. II Java.
2211. *F. Theobromae* Appel et Strunk 205 Java.
2212. *Epicoccum angulosum* Penz. et Sacc. 175 p. 258 Java; 176 p. 114—115 Taf. LXXX Fig. 1 Java; B.
2213. *E. javanicum* Koord. 119 p. 249 Abb. 60 Java.
2214. *Listeromyces insignis* Penz. et Sacc. 175 p. 259 Java; 176 p. 115 Taf. LXXX Fig. 2 Java.  
*S. velutinum* (Ces.) 37 p. 26 (*Marosporium velutinum* Ces.) Sarawak.
2215. *Strumellopsis annularis* (Rac.) v. Höhnel 87 p. 84 Java; 190 (*Strumella annularis* Rac.) Java.
2216. *Hymenopsis Elasticae* Koord. 118 p. 309 Java; 119 p. 249 Abb. 59 Java.
2217. *H. ellipsospora* (Fuck.) Sacc. 175 p. 258 Java; B.
2218. *Exosporium megalosporum* Penz. et Sacc. 175 p. 259 Java; 119 p. 115—116 Taf. LXXX Fig. 3 Java; B.
2219. *Exosporella Symploci* v. Höhnel 93 p. 76 Java.
2220. *Bonordiella memoranda* Penz. et Sacc. 175 p. 260 Java; 176 p. 116 Taf. LXXX Fig. 4 Java; B.
2221. *Wiesneriomyces javanicus* Koord. 118 p. 309 Java; 119 p. 246 Abb. 57 Java; 120 p. 329—331 Abb. Java.
2222. *Spegazzinia ornata* Sacc. 175 p. 260 Java.
2223. *S. Meliolae* Zimm. 265 p. 221 Java.

**Mycelia sterilia.**

2224. *Hyphelia rosea* Fr. 107 p. 8—9 Java; 142 p. 308 Java.  
 2225. *Sclerotium compositum* Jungh. 107 p. 25 Java; 142 p. 307 Java.  
*S. glumale* Ces. 37 p. 26 Sarawak.  
*S. hypocreaemorphum* Ces. 37 p. 27 Sarawak.  
*S. rhachidophilum* Ces. 37 p. 27 Sarawak.  
 2226. *S. Rolfsii* 211 p. 324 Java.  
 2227. *Anthina fusco-pallida* Jungh. 142 p. 312 Java.  
 2228. *Himantia citrina* Zoll. 67a p. 304 Java.  
 2229. *H. discolor* Zoll. 67a p. 303 Java.  
 2230. *H. fusco-pallida* Jungh. 107 p. 34 Java.  
 2231. *H. lactea* Fr. 107 p. 34 Fig. 21 Java; 142 p. 312 Java; 144 (*Himantia lactea* Jungh.) Java; 273 Java.  
 2232. *H. sulphurea* Fr. 67a p. 304 Java; 271 p. 385 Java; 273 Java.
- Unvollständig bekannte Arten.
- Agaricus nebulosus* Zoll. et Mor. 271 Java; 273 Java.  
*A. sepulcrorum* Zoll. 271 p. 390 Java; 273 Java; 144 Java.  
*A. Vriesii* Lév. 127 p. 172 Java; 128 p. 597 Java.  
*Boletus arcuatus* Zoll. 67a p. 305—306 Java.  
*B. faguarius* Rumphius 204 p. 124 Ambon.  
*B. fecundus arboreus* Rumphius 204 p. 125 Taf. LVI Fig. 2, 3 Ambon.  
*B. infundibuliforma* Rumphius 204 p. 125 Taf. LVI Fig. 1 Ambon.  
*B. tertius umbraculi figura* Rumphius 204 p. 126 Ambon.  
*B. terrestris* Rumphius 204 Ambon.  
*B. quintus auris murina dictus* Rumphius 204 p. 126 Taf. LVI Fig. 4 Ambon.
- Sphaeria annulata* Fr. 128 p. 16 Java.  
*S. alvear* Ces. 37 p. 20 Sarawak.  
*S. Beccariana* Ces. 37 p. 20 Taf. IV Sarawak.  
*S. bombardella* Ces. 37 p. 20 Sarawak.  
*S. columnaris* Jungh. 107 p. 17. Java; 142 p. 310 Java.  
*S. confinis* Lév. 128 p. 617 Java.  
*S. deusta* Hoffm. 128 p. 616 Java.  
*S. hypoxantha* Lév. 129a p. 260 Java.  
*S. incrassata* Jungh. 108 p. 288 Java.  
*S. javanica* Zipp. 128 p. 616 Java.  
*S. olivaeformis* Lév. 144 Java; 273 Java.  
*S. osculosa* Pers. 176a p. 180—181 Rawak.  
*S. pilulaeformis* Jungh. 170 p. 16 Java; 144 p. 309 Java.  
*S. ptychocephala* Lév. 273 Java.  
*S. rhopalina* Kunze 144 Java; 273 Java.  
*S. setacea* Pers. 128 p. 617 Java.  
*S. scoparia* Lév. 128 p. 616 Java.  
*S. Zanthoxyli* Lév. 129a Java.

**Lichenes.****Ascolichenes.****Pyrenocarpeae.****Fam. Verrucariaceae.**

1. *Verrucaria aurantiaca* Eschw. 110 p. 485 Java; 273 (*V. macrospora* Hepp.) Java.
2. *V. balia* Kremp. 124 p. 48 Borneo.
3. *V. catevaria* Fée 110 p. 486 Java.
4. *V. complanata* Mont. 110 p. 485 Java.
5. *V. confraga* Kremp. 124 p. 50 Borneo.
6. *V. diremta* Nyl. 124 p. 50 Borneo.
7. *V. ectypa* Kremp. 124 p. 47 Borneo.
8. *V. elaeophaena* Kremp. 124 p. 48 Tafel I Fig. 14 Borneo.
9. *V. gravastella* Kremp. 124 p. 48 Borneo.
10. *V. interducta* Nyl. 154 p. 134 Java.
11. *V. mamillana* Ach. 154 p. 134 Java.
12. *V. mamillaris* Hepp. 110 p. 485 Java; 273 Java.
- 12a. *V. melaloma* 176a p. 182—183 Rawak.
13. *V. melanobapha* Kremp. 123, 124 p. 51 Borneo.
14. *V. monocarpa* Kremp. 123 Borneo.
15. *V. nitida* (Ach.) Fr. 110 p. 485 Java; 154 p. 134 (*V. nitida* Schrad.) Java.
16. *V. pudibunda* Mont. et v. d. Bosch 110 p. 487 Java.
17. *V. punctiformis* Pers. 110 p. 487 Java.
18. *V. pupula* Ach. 154 p. 135 Java.
19. *V. seriata* Hepp. 110 p. 486 Java; 273 Java. 148 (*Pyrenula* ser. Hepp.) Java.
20. *V. spectabilis* Kremp. 124 p. 50 Borneo.
21. *V. stigmatella* Ach. 110 p. 487 Java.
22. *V. stigmatella* Ach. var. *lactea* Ach. 110 p. 487 Java.
23. *V. subtrahens* Nyl. 154 p. 135 Java.
24. *V. subtrahens* Nyl. var. *microspora* Kremp. 124 p. 49 Borneo.
25. *V. subvelata* Nyl. 124 p. 49 Borneo.
26. *V. thelena* Ach. 110 p. 485 Java.
27. *V. tropica* Ach. 110 p. 486 Java; 154 p. 135 Java; 273 (*V. tristis* Hepp) Java.
28. *V. umbonata* Hepp 110 p. 486 Java; 273 Java.

**Fam. Pyrenulaceae.**

29. *Porina albicera* Kremp. 123, 124 p. 53 (*Verrucaria*) Borneo.
30. *P. chiodectonoides* Fée 110 p. 483 Java.
31. *P. convelata* Kremp. 124 p. 52 (*Verrucaria*) Borneo.



32. *P. endochrysa* Mont, 110 p. 183 Java.
33. *P. futurae* Kremp. 124 p. 54 (Verrucaria) Borneo.
34. *P. javanica* (Hepp) 110 p. 486 (Verrucaria *javanica* Hepp) Java; 146 Java; 273 (Verrucaria *jav.* Hepp) Java.
35. *P. limbulata* Kremp. 123, 124 p. 51 Tafel I Fig. 17 (Verrucaria) Borneo.
36. *P. mastoidea* (Ach.) Fée 110 p. 483 Java.  
*P. multiseptata* Müll. 145 p. 16 Deutsch Neu-Guinea.  
*P. praestans* (Nyl.) Müll. 145 p. 16 Deutsch Neu-Guinea.
37. *P. ravida* Kremp. 124 p. 52—53 Taf. I Fig. 19 (Verrucaria) Borneo.
38. *P. rufula* Kremp. 123, 124 p. 53 (Verrucaria) Borneo.
39. *P. virescens* Kremp. 123, 124 p. 53 Taf. I Fig. 20 (Verrucaria) Borneo.
40. *Pyrenula Antoniae* Kremp. 124 p. 51 Tafel I Fig. 15 (Verrucaria) Borneo.
41. *P. aspistea* Ach. 110 p. 485 (Verrucaria *aspistea* (Ach.) Mont.) Java.
42. *P. aspistea* Ach. var. *lutea* Kremp. 124 p. 49 Borneo.
43. *P. copromya* Mass. 122 p. 863 Ambon.
- 43a. *P. fuscata* Pers. 176a p. 182 Rawak.
- 43b. *P. globosa* Pers. 176a p. 181—182 Rawak.
44. *P.?* *indica* Mass. 122 p. 863 Ambon.
45. *P. marginata* Hook. 110 p. 486 (Verrucaria *marginata* (Hook.) Mont.) Java; 273 (*V. marginata* (Hook.) Mont.) Java. B.
46. *P. marginata* Hook. var. *fulva* Kremp. 124 p. 49 (Verrucaria) Borneo; 148 (Verrucaria *marginata* Hook var. *fulva* Kremp) Java.
47. *P. myriocarpa* Fée 110 p. 486 (Verrucaria *myriocarpa* (Fée) Mont.) Java.
48. *P. Santensis* (Tuckerm.) Müll. 124 p. 51 Tafel I Fig. 16 (Verrucaria *Santensis* Tuckerm.) Borneo; 145 p. 15 Timor.
- 48a. *P. sphaerica* Pers. 176a p. 182 Rawak.
49. *P. tenella* Müll. Arg. 151 p. 288 Java.
50. *Anthracotheceum Doleschalli* Mass. 122 p. 863 Ambon.
51. *A. libricolum* (Fée) Müller 145 p. 16 Timor; 147 p. 139 Timor.
52. *A. variolosum* Müller 103 p. 13 Waigeoe.

Fam. **Trypetheliaceae.**

53. *Tomasellia Zollingeri* Müll. Arg. 151 p. 287 Java.
54. *Melanotheca arthonioides* Nyl.? 124 p. 54 Borneo.
55. *M. coccorum* (Mass.) 122 p. 871 Tafel VIII a-i (Micromma *cocorum* Mass.) Ambon.
56. *Trypethelium chrysostomum* Kremp. 124 p. 57 Borneo.
57. *T. cinereo-rosellum* Kremp. 124 p. 56 Tafel I Fig. 26 Borneo.  
*T. grossum* Müller Arg. 145 p. 15 Deutsch Neu-Guinea; 147 p. 139—140 Neu-Guinea.
58. *T. leucostomum* Kremp. 124 p. 57 Borneo.

59. *T. megaleium* Kremp. 124 p. 55 Borneo.
60. *T. meristosporum* Mont et v. d Bosch 110 p. 487.
61. *T. nigritulum* Nyl. 124 p. 58 Tafel I Fig. 25 Borneo.
62. *T. peranceps* Kremp. 124 p. 55 Borneo.
63. *T. pyrenuloides* Mont. 110 p. 488 Java.
64. *T. Sprengelii* Ach. 154 p. 135 Java.
65. *T. stramineum* Kremp. 124 p. 56—57 Borneo.

**Fam. Astrotheliaceae.**

66. *Astrothelium conicum* Eschw. 124 p. 58 Borneo.
97. *A. galbineum* Kremp. 124 p. 58—59 Tafel I Fig. 27 Borneo.
68. *A. leucothelium* Nyl. 124 p. 58 Borneo.

**Fam. Strigulaceae.**

69. *Phylloporina epiphylla* (Fée) Müll. 103 p. 13 Englisch Neu-Guinea; 104 p. 183 Sumatra.
70. *Strigula complanata* Mont. 124 p. 54 Borneo.
71. *S. Féei* Mont. 110 p. 490 Java; 122 p. 863 Ambon; 273 (*Verrucaria Zollingeri* Hepp) Java.
72. *S. insignis* Jatta 103 p. 13 Neu-Guinea.
73. *S. melanophthalma* Mont. 110 p. 490 Java; 273 Java.

**Gymnocarpeae.**

(Coniocarpineae.)

**Fam. Caliciaceae.**

74. *Calicium javanicum* Mont. et v. d. Bosch 110 p. 483 Java.

**Fam. Cypheliaceae.**

75. *Pyrgillus javanicus* (Mont.) Nyl. 122 p. 871 Tafel VIII k-q Ambon.
76. *Tylophoron annulatum* Kremp. 124 p. 11 Borneo.
77. *T. indicum* Kremp. 124 p. 11 Tafel. 1 Fig. 28 Borneo.

**Fam. Sphaerophoraceae.**

78. *Sphaerophoron compressus* Koelr. 98 Java.
79. *S. australe* Laur. 110 p. 481 Java.

**Fam. Arthoniaceae.**

80. *Arthonia* (*Coniangium*) *aleteum* (Mass.) 122 p. 876 (*Coniangium aleteum* Mass) Ambon.
81. *A. Amboinensis* Müll. 153 p. 132 Ambon.
82. *A.* (*Coniocarpon*) *gracilis* (Eschw.) 122 p. 869 (*Coniocarpon gracile* (Eschw.) Mass) Ambon.
83. *A. gregaria* var. *adspersa* (Mont.) Müll. 153 p. 132 Ambon.
84. *A. lilacina* Mont. et v. d. Bosch 110 p. 478 Java.
85. *A. marginata* Duf. 110 p. 479 Java.
86. *A.* (*Naevia*) *mazosia* (Mass.) 122 p. 867 (*Naevia mazosia* Mass.) Ambon.

87. *A. miltina* Kremp. 124 p. 42 Borneo.
88. *A. polymorpha* Ach. 124 p. 42 Borneo.
89. *Arthothelium* (*Myriostigma*) *candidum* (Kremp.) 123. 124 p. 45  
Tafel 1 Fig. 29 (*Myriostigma candidum* Kremp.) Borneo.
90. *A. oasis* Mass. 122 p. 868 Ambon.
91. *A. picilum* Mass. 122 p. 867 Ambom.

Fam. **Graphidaceae.**

92. *Opegrapha angustata* (Esch.) Mont. 110 p. 468 Java.
93. *O. apomelaena* Mass. 122 p. 864 Ambon.
94. *O. comma* Ach. 110 p. 467 Java.
95. *O. crassilabra* Mont. et v. d. Bosch 110 p. 468 Java.
96. *O. crenulata* Mont. et v. d. Bosch. 110 p. 467 Java.
97. *O. dictya* Nyl. 154 p. 134 Java.
98. *O. elegans* (Ach.) Sm. 110 p. 467 Java; 154 p. 133 (*Graphis elegans* Ach.) Java.
99. *O. fagorum* Mass. 122 p. 864 Tafel VI a-e Ambon.
100. *O. intricata* (Fée) Mont. 110 p. 469 Java.
101. *O. leptochroma* Mass. 122 p. 865 Ambon.
102. *O. marginata* Mont et v. d. Bosch 110 p. 470 Java.  
*O. melanophthalma* Müll. 145 p. 14 Deutsch Neu-Guinea.
103. *O. nana* Fée 110 p. 467 Java,
104. *O. ovata* Fée 110 p. 466 Java.
105. *O. prosiliens* 110 p. 468 Java.
106. *O. rimulosa* Mont. 110 p. 467 Java; 144 Java; 273 Java.
107. *O. scalpturata* (Ach.) 110 p. 468 Java.
108. *O. scaphella* Ach. 110 p 467 Java.
109. *O. scripta* Ach. 110, p. 467 Java,
110. *O. sordida* (Fée) Mont. 110 p. 469 Java.
111. *O. tectiformis* Mont. et v. d. Bosch 110 p. 469 Java.
112. *O. trilocularis* Müll. 153 p. 132 Ambon.
- 112a. *O. undulata* Pers. 176a p. 184 Rawak.
113. *Graphis Afzelii* Ach. 110 p. 470 Java; 144 Java; 273 Java.
114. *G. Afzelii* Ach. var. *Bornensis* Kremp. 124 p. 37 Borneo
115. *G. anfractuosa* Eschw. var. *argutula* Kremp. 124 p. 34 Borneo.
116. *G. aphanes* Mont. et v. d Bosch 110 p. 474 Java.
117. *G. atro-alba* Kremp. 124 p. 38 Borneo.
118. *G. attenuata* Kremp. 124 p. 31 Borneo.
119. *G. caesiopruinosa* Kremp. 124 p. 32 Borneo.
120. *G. campetes* Kremp. 124 p. 30 Borneo.
121. *G. chlorocarpa* Fée 110 p. 472 Java.
122. *G. chlorocarpoides* Nyl. 154 p. 133 Java.
123. *G. chlorotica* Mass. 122 p. 865 Ambon.
124. *G. chrysenteron* Mont. 110 p. 473 Java; 144 Java; 273 Java.

125. *G. commutabilis* Kremp. 124 p. 33 Borneo.
126. *G. computata* Kremp. 124 p. 36 Borneo.
127. *G.* (*Sarcographa*) *concosa* Kremp. 124 p. 31 Borneo.
128. *G.* (*Solenographa*) *confluens* (Mass.) 122 p. 866 Tafel VII a (*Solenographa confluens* Mass.) Ambon.
129. *G. convariata* Kremp. 124 p. 30 Borneo.
130. *G.* (*Fissurina*) *crassilabra* (Mont. et v. d. Bosch) 110 p. 480 (*Fissurina crassilabra* Mont. et v. d. Bosch) Java.
131. *G. diversa* Nyl. 124 p. 38 Tafel I Fig. 5 Borneo.
132. *G. diversa* Nyl. form. *cohibens* Nyl. 154 p. 133 Java.
133. *G. Dumastii* Fée 124 p. 36 Borneo.
134. *G. duplicata* Ach. 110 p. 474 Java.
135. *G. epixantha* Mont. et v. d. Bosch 110 p. 472 Java.
136. *G.* (*Fissurina*) *grammitis* (Fée) 110 p. 479 (*Fissurina gr.* (Fée) Mont.) Java.
- 136a. *G. erythrella* (Mont. et v. d. Bosch) 110 p. 478 (*Ustalia*) Java.
137. *G. hologlauca* Nyl. 154 p. 133 Java.
138. *G. hololeuca* Mont. 110 p. 473 Java.
139. *G. hypoglauca* Kremp. 124 p. 39 Borneo.
140. *G. hypolecta* Nyl. 124 p. 38 Borneo.
141. *G. imparilis* Kremp. 124 p. 29 Borneo.
142. *G. Junghuhnii* Mont. et v. d. Bosch 110 p. 471 Java.
143. *G. leiogrammodes* Nyl. var. *albicera* Kremp. 124 p. 33 Borneo.
144. *G. leprevosth* (Fée) Mont. 110 p. 475 Java.
145. *G. leptocarpa* Fée 124 p. 37 Borneo.
146. *G. leucoparypha* Kremp. 124 p. 35 Borneo.
147. *G. maeandrata* Kremp. 124 p. 36 Borneo.
148. *G. Montagnei* v. d. Bosch 110 p. 472 Java; 154 p. 133 Java.
149. *G.* (*Fissurina*) *nitida* (Eschw.) 110 p. 479 (*Fissurina nitida* (Eschw.) Mont.) Java.
150. *G. pallido-ochrea* Kremp. 124 p. 32 Tafel I Fig. 7 Borneo.
151. *G. Pavoniana* Fée 124 p. 38 Borneo.
152. *G. pudica* Mont. et v. d. Bosch. 110 p. 474 Java.
153. *G. pyrrocheila* Mont. et v. d. Bosch 110 p. 471 Java.
154. *G. ramificans* Kremp. 124 p. 35 Borneo.
- 154a. *G. pyrrochroa* (Mont. et v. d. Bosch) 110 p. 477 (*Ustalia*) Java.
155. *G. Sayeri* Müll. 153 p. 132 Ambon.
156. *G. streblocarpa* (Bél.) Mont. et v. d. Bosch 154 p. 133 Java.
157. *G. streblocarpa* (Bél.) Mont. et v. d. Bosch var. *canariorum* Kremp. 124 p. 34 Borneo.
158. *G. striatula* (Ach.) Nyl. 124 p. 36 Borneo.
159. *G. Subinusta* Leight. 124 p. 30 Borneo.
160. *G. tectigera* Eschw. 124 p. 38 Borneo.

161. *G. tenella* Ach. 103 p. 12 Waigeoe.  
 162. *G. tumida* Kremp. 124 p. 32 Borneo.  
 162a. *G. venosa* Eschw. 145 p. 14 Deutsch Neu-Guinea; 176a p. 185  
 (*Emblemia venosa*) Rawak.  
 162b. *Phaeographis* (*Platygramma*) *dendriticella* Müll Arg. 147 p.  
 139 Neu-Guinea.  
 163. *Graphina insulana* Müll. 153 p. 132 Ambon.  
 163a. *G. fuscescens* Pers. 176a p. 186 -187 (*Ctesium fuscescens*) Rawak.  
 164. *G. Junghuhnii* (Mass.) 122 p. 868 (*Glaucinarina Junghuhnii* (Mass.)  
 Ambon.  
 165. *Phaeographina ochracea* (Hepp) Müller Arg. 151 p. 285 Java;  
 273 (*Graphis ochracea* Hepp) Java; 110 p. 477 (*Ustalia ochracea*  
 (Hepp) Mont. et v. d. Bosch) Java.  
 166. *Ph. streblocarpa* (Belang.) 110 p. 469 (*Opegrapha streblocarpa*  
 Bélang.) Java; 122 p. 866 (*Leiorreuma streblocarpum* (Bélang.) Mass.)  
 Ambon.

Fam. **Chidectonaceae.**

167. *Glyphis cicatricosa* Ach. 110 p. 489 Java; 144 Java; 273 Java.  
 168. *G. finitima* Kremp. 124 p. 43 Borneo.  
 169. *G. labyrinthica* Ach. 110 p. 489 Java; 122 p. 869 Ambon; 154 p. 134 Java.  
 170. *G. labyrinthica* Ach. var. *prorecta* Kremp. 124 p. 42 - 43 Borneo.  
 171. *G. labyrinthica* Ach. var. *insulata* Kremp. 124 p. 42 - 43 Borneo.  
 172. *G. (Actinoglyphis) Leprieurii* Mont. 110 p. 490 Java; 122 p. 869  
 Ambon; 124 p. 44 Tafel I Fig. 10 (*Actinoglyphis heteroclita* Mont.)  
 Borneo; 144 (Gl. heter. Mont. et Gl. heterostycha Mont.?) Java; 154  
 p. 134 (*G. heter. Mont.*) Java; 273 (*G. heter. Mont.*) et Gl. heterostycha  
 Mont.?) Java.  
 173. *G. tricola* Ach. 110 p. 490 (*Medusella tricola* (Ach.) Mont.) Java.  
 174. *G. verrucosa* Mont. 110 p. 489 Java.  
 175. *Enterodictyon oblongellum* Müll. Arg. 151 p. 285 Java.  
 176. *Chiodecton Boschianum* Mont. 110 p. 488 Java.  
 177. *Ch. farinaceum* Mont. 110 p. 488 Java.  
 178. *Ch. laevigatum* Fée var. *spermogonifera* 122 p. 869 Ambon.  
 179. *Ch. malacum* Kremp. 124 p. 45-46 Borneo.  
 180. *Ch. obscurascens* Kremp. 124 p. 46 Borneo.  
 181. *Ch. paradoxum* (Mass.) Kremp. 122 p. 870 Ambon.  
 182. *Ch. (Enterographa) pertriosa* Kremp. 124 p. 39 (*Enterographa*  
*pertr.* Kremp.) Borneo.  
*Ch. rubrocinctum* Nyl. 145 p. 14 Deutsch Neu-Guinea.  
 183. *Ch. rupestre* Kremp. 124 p. 45 Borneo.  
 183a. *C. sphaerale* Ach. 154 p. 134 Java.

Fam. **Dirinaceae.**

184. *Dirina multiformis* Mont. et v. d. Bosch 110 p. 453 Java.

Fam. **Roccellaceae.**

185. *Roccella fuciformis* D. C. 110 p. 430 Lombok; 273 Java; B.  
 186. *R. Montagnei* Bélang. 97 p. 175 Java; Sumatra.  
 187. *R. phycopsis* Ach. 97 p. 175 Java; Sumatra.  
 188. *R. tinctoria* D. C. 110 p. 430 Java; 273 Lombok.

**Cyclocarpineae.**Fam. **Lecanactidaceae.**

189. *Lecanactis confluens* (Fée) Mont. 110 p. 475 Java.  
 190. *L. conglomerata* (Fée) Mont. et v. d. Bosch 110 p. 476 Java.  
 191. *L. exaltata* Mont. et v. d. Bosch 110 p. 476 Java.  
 192. *L. lecanoroides* (Fée) Mont. et v. d. Bosch 110 p. 476 Java.  
 193. *L. planiuscula* Mont. v. d. Bosch 110 p. 475 Java.  
 194. *Schismatomma chlorochroa* (Kremp.) 123, 124 p. 40 Tafel I  
 Fig 11 (*Platygrapha chlorochroa* Kremp.) Borneo.  
 195. *S. minima* (Kremp.) 123, 124 p. 39 (*Platygrapha min.* Kremp.) Borneo.  
 196. *S. mirifica* (Kremp.) 123, 124 p. 41 Tafel I Fig. 12 (*Platygrapha*  
*mirifica* Kremp.) Borneo.  
 197. *S. planissima* (Kremp.) 124 p. 42 (*Platygrapha plan.* Kremp.)  
 Borneo.  
 198. *S. squamigera* (Kremp.) 124 p. 41 Tafel I Fig. 13 (*Platygrapha*  
*squamigera* Kremp.) Borneo.  
 199. *S. striguloides* (Nyl.) 123, 124 p. 41 (*Platygrapha strig.* Nyl.) Borneo.

Fam. **Thelotremaeae.**

200. *Ocellularia* (*Ascidium*) *albogilva* (Kremp.) 124 p. 21 (*Asc. alb.*  
*Kremp.*) Borneo.  
 201. *O.* (*Ascidium*) *carnosula* (Kremp.) 124 p. 22 (*Asc. carn.* Kremp.)  
 Borneo.  
 202. *O.* (*Ascidium*) *confluens* Kremp. var. *polyporum* Kremp. 124  
 p. 23 (*Asc.*) Borneo.  
 203. *O.* (*Ascidium*) *crocea* Kremp. 124 p. 25 Tafel I Fig. 24 (*Asc. cr.*  
*Kremp.*) Borneo.  
 204. *O. defossa* Müll. Arg. 145 p. 13 Timor; 147 p. 138 Timor; 150  
 p. 13 Timor.  
 205. *O.* (*Ascidium*) *dignitosa* (Kremp.) 124 p. 24 Tafel I Fig 21 a-c  
 (*Asc. dign.* Kremp.) Borneo.  
 206. *O.* (*Ascidium*) *granulifera* (Kremp.) 124 p. 21 (*Asc. gran.* Kremp.)  
 Borneo.  
 207. *O.* (*Ascidium*) *isidiophorum* (Kremp.) 124 p. 24 (*Asc. isid.* Kremp.)  
 Borneo.  
 208. *O.* (*Myriotrema*) *olivacea* (Fée) 110 p. 485 Java.  
 208a. *O. papuana* Müll. Arg. 145 p. 12—13 Deutsch Neu-Guinea; 147 p.  
 138 N. G. 150 p. 12. N. G.

209. *O.* (*Ascidium*) *phaeotropa* (Kremp.) 124 p. 22 (*Asc.* *phaeotr.* Kremp.) Borneo.
210. *O.* (*Ascidium*) *pomiformis* (Kremp.) 124 p. 26 Tafel I Fig. 22 a-c (*Asc.* *pomif.* Kremp.) Borneo.
211. *O.* (*Ascidium*) *triglyphica* (Kremp.) 124 p. 22 (*Asc.* *trigl.* Kremp.) Borneo.
212. *Thelotrema atratum* Fée 100 p. 484 Java.
213. *Th. cavatum* Ach. var. *submutatum* Nyl. 124 p. 20 Borneo.
214. *Th. cinereo-virens* Kremp. 124 p. 18 Borneo.
215. *Th. collativum* Kremp. 124 p. 20 Borneo.
216. *Th. conformale* Kremp. 124 p. 19 Borneo.
217. *Th. ? dislacerata* Kremp. 124 p. 17 Borneo.
218. *Th. eurychades* Kremp. 124 p. 17 Borneo.
219. *Th. foraminulosum* Kremp. 124 p. 20 Borneo.
220. *Th. glaucophaenum* Kremp. 124 p. 19 Borneo.
221. *Th. granatum* Kremp. 124 p. 18 Borneo.
222. *Th. microporum* Mont. 110 p. 484 Java.
223. *Th. pachystomum* Müll. 103 p. 12 Waigeoe.
224. *Th. parvulum* Kremp. 124 p. 20 Borneo.
225. *Th. persimile* Kremp. 124 p. 19 Borneo.
226. *Th. porinoides* Mont. et v.d. Bosch 110 p. 484 Java
227. *Th.* (*Gyrostomum*) *scyphuliferum* (Ach.) 154 p. 132 Java.
228. *Leptotrema Zollingeri* Mont. et v. d. Bosch 110 p. 483 Java; 273 (*Thelotrema* Zoll. Mont.) Java.

#### Fam. **Coenogoniaceae**

229. *Coenogonium confervoides* Nyl. 104 p. 182 Borneo; 124 p. 26 Borneo; 145 p. 15 Ambon.
230. *C. Leprieurii* (Mont). Nyl. 124 p. 26 Borneo; 215 p. 29 Neu-Guinea.
231. *C. Linkii* Ehrenb. 110 p. 493 Java; 122 p. 862 Ambon.
232. *C. tenuissimum* Kremp. 123,124 p. 26 Borneo.

#### Fam. **Lecideaceae.**

233. *Lecidea atro-alba* Ach. 110 p. 463 Java.
234. *L.* (*Biatora*) *aurata* (Mont. et v.d. Bosch) 110 p. 458 (*Biatora aur.* Mont. et v.d. Bosch) Java.
235. *L. cinnamomea* Kremp. 123,124 p. 27 Tafel I Fig. 2 Borneo.
236. *L. comparanda* Nyl. 154 p. 132 Java.
237. *L. coniochlora* Mont. et v.d. Bosch 110 p. 463 Java.
238. *L.* (*Biatora*) *crenulata* (Hepp) 110 p. 459 (*Biatora cren.* (Hepp) Java; 273 (*Baeomyces crenulatus* Hepp) Java.
239. *L. disciformis* (Fr.) Nyl. 154 p. 132 Java.
240. *L.* (*Buellia*) *exalbida* Kremp. 124 p. 28 Borneo.
241. *L. galbinea* Kremp. 123,124 p. 27 Borneo.
242. *L. geographica* Schaer. 110 p. 463 Java.

243. *L. (Psora) javanica* Schaer. 110 p. 460 (*Biatora javanica* (Schaer.) Mont. et v. d. Bosch) Java; 144 Java; 151 p 280 (*Psora breviuscula* (Nyl.) Müll. var. *javanica* (Schaer.)) Java; 273 Java.
244. *L. (Biatora) Junghuhnii* (Mont. et v. d. Bosch) 110 p. 459 (*Biatora Jungh.* Mont. et v. d. Bosch) Java.
- 244a. *L. (Biatora) Kurziana* Müll. Arg. 152 p. 127 Java.
245. *L. ? laceratula* Kremp. 124 p. 28 Borneo.
246. *L. (Biatora) luteola* (Fr.) var. *vernalis* 110 p. 459 (*Biatora*) Java.
247. *L. marginiflexa* var. *atrorubicans* Nyl. 154 p. 132 Java.
248. *L. (Biatora) Bélangeri* Mont. et v.d. Boach) 110 p. 461 (*Biat. Bel. Mont et v. d Bosch*) Java; 273 (*L. microspora* Hepp) Java.
249. *L. (Biatora) microcarpa* (Mont. et v. d. Bosch) 110 p. 461 (*Biat. micr. Mont. et v. d. Bosch*) Java.
250. *L. morula* Kremp. 124 p. 29 Tafel I Fig. 3 Borneo.
251. *L. (Bilimbia) pallidula* Kremp. 123, 124 p. 27 Borneo.
252. *L. palmicola* Tuckerm. 123, 124, p. 26 Borneo.
253. *L. parasema* Fr. 110 p. 463 Java.
254. *L. parvifolia* Pers. var. *fibrillifera* Nyl. 124 p. 29 Borneo.
255. *L. prasinorubella* Nyl. 154 p. 132 Java.
256. *L. (Biatora) russula* (Ach.) 110 p. 459 (*Biat. russ. (Ach.) Mont.*) Java.
257. *L. Saxicila* 272 p. 252 Java.
258. *L. subfuscata* Nyl, 154 p. 132 Java.
259. *L. (Biatora) triseptata* Hepp. 110 p. 462 (*Biat. tris. (Hepp) Mont. et v. d. Bosch*) Java; 124 p. 29 Borneo; 154 p. 132 Java; 273 Java.
260. *L. (Biatora) versicolor* Fée 110 p. 460 (*Biat. vers. (Fée) Mont. et v. d. Bosch*) Java.
261. *L. (Biatora) vestita* Mont. 110 p. 460 (*Biat. vest. Mont*) Java.
262. *Megalospora taitense* (Mont.) 110 p. 462 (*Heterothecium taitense* Mont.) Java.
263. *M. tricolor* (Mont.) 110 p. 462 (*Heterothecium tricolor* Mont.) Java.
- 263a. *Lopadium epiphyllum* Mont. B.

#### Fam. Cladoniaceae.

264. *Baeomyces fungoides* Ach. 110 p. 458 Java; 144 Java; 154 p. 129 Java.
265. *Cladonia adpersa* Mont. et v.d. Bosch 110 p. 456 Java.
266. *C. botryocephala* Hepp 110 p. 457 Java; 273 Java.
267. *C. coccifera* Fl. 98 Java; 110 p. 457 (*C. cornucopioides* Fr.) Java.
268. *C. coccifera* Fl. var. *stematina* Ach. 97 p. 173 Java.
269. *C. decorticata* Fl. 110 p. 456 Java
270. *C. degenerans* Fr. c. *pityrea* (Fr.) 97 p. 173 (*C. pityrea* Fr.) Java; 110 p. 455 Java.



271. *C. degenerans* Fr. c. *pityrea* (Fr.) form. *carneo-pallescens* Nyl. 154 p. 129 Java.
272. *C. degenerans* Fr. f. *trachyna* (Ach.) 154 p. 129 Java.
273. *C. fimbriata* Fr. *ochrochlora* Schaer. 110 p. 455 Java.
274. *C. fimbriata* Fr. c. *ochrochlora* Floerke 110 p. 455 Java.  
*C. Floerkeana* Fries 216 p. 213 Engl. Nord-Borneo.
275. *C. furcata* Sommerf. var. *subulata* 110 p. 456 Java.
276. *C. isidioclada* Mont. et v.d. Bosch 110 p. 457 Java.
277. *C. Junghuhniana* Mont. et v.d. Bosch 110 p. 456 Java.
278. *C. macilenta* Hoffmann 110 p. 458 Java; 144 Java; 154 p. 130 Java;  
271 p. 396 Java; 272 p. 252 Java; 273 Java.
279. *C. polyphylla* Mont. et v.d. Bosch 110 p. 457 Java.
280. *C. pyxidata* Fr. 110 p. 455 Java.
281. *C. pyxidata* Fr. var. *neglecta* Mass. 98 Java;
282. *C. pyxidata* Fr. form. *staphylea* Ach. 154 p. 129 Java.
283. *C. squamosa* Hoffm. 154 p. 130 Java; 273 Java.
284. *C. squamosa* Hoffm. var. *squamosissima* b. *javanica* Zoll.  
110 p. 457 Java.
285. *C. turgida* Hoffm. *javanica* Mont. et v.d. Bosch 110 p. 455  
Java.
- 285a. *C. vulcanica* Zoll. 67a Java.
286. *Stereocaulon botryosum* Ach. 110 454 Java.
287. *S. condensatum* Laur. 110 p. 455 Java.
288. *S. graminosum* Schaer. 110 p. 454 Java; 144 Java; 273. Java.
289. *S. Massartianum* Hue 97 p. 173—174 Java.
290. *S. (Leprocaulon) nanum* Ach. 97 p. 174 Java; 154 p. 130 Java.
291. *S. nesaeum* Nyl. 97 p. 173 Java; 154 p. 130 Java.
292. *S. ramulosum* Ach. 110 p. 454 Java; 144 Java; 273 Java.
293. *S. turgescens* Nyl. 98 Java; 154 p. 130 Java.
- 293a. *S. verruculigerum* Hue 99 Java.
- 293b. *Gyrophora perforata* Pers. 84a p. 202—203 Rawak.

Fam. **Acarosporaceae.**

294. *Thelocarpon byssoideum* Kremp. 124 p. 47 Borneo.
295. *Th. luteo-virens* Kremp. 124 p. 46—47 Borneo.

Fam. **Collemaceae.**

296. *Physma pulvinatum* Hue 97 p. 171 Java.
297. *Dichodium byrsinum* (Ach.) Nyl. 110 p. 491 (*Collema byrsinum* Mont.) Java; 124 p. 9 (*Coll. byrs.* Ach.) Borneo; 144 (*Coll. (Mallotium) plumbeum* Schaer.) Java; 145 p. 6 (*Physma byrs.* Mass.) Ambon; 215 p. 29 *Deutsch Neu-Guinea*; 273 (*Coll. Boryanum* Pers.) Java. 84a p. 205 (*Coll. Boryanum* Pers.) Rawak.
298. *D. byrsinum* (Ach.) Nyl. var. *hypomelarnum* (Hue) Nyl. 97 p. 171 *Coll. Boryanum* Pers.) Rawak. (*Physma byrs.* var. *hyp.* Hue) Java.

299. *Collema actinoptychum* Nyl. 124 p. 9 Borneo.  
 300. *C. (Synechoblastus) aggregatus* (Nyl.) 103 p. 13 (Syn. aggre. Nyl.)  
 Holl. Neu-Guinea.  
 301. *C. luridum* Mont. 110 p. 492 Java.  
 301a. *C. moluccanum* Pers. 84a p. 203—204 Rawak.  
 302. *C. nigrescens* Ach. 110 p. 492 Java; 144 Java; 273 Java.  
 302a. *C. plicatum* Pers. 84a p. 205 Rawak.  
 302b. *C. polyrhiza* Pers. 84a p. 204 Rawak.  
 302c. *C. vespertilis* Pers. 84a p. 203 Rawak.  
*Leptogium azurellum* Jatta 103 p. 15 Engl. Neu-Guinea.  
 303. *L. Brebissoni* Mont. 110 p. 493 Java.  
 304. *L. Burgessii* (Ach.) Mont. 110 p. 493 Java.  
 305. *L. crispulum* Kremp. 123, 124 p. 9 Tafel I Fig. 1 Borneo.  
 306. *L. diaphanum* (Mont.) Nyl. 104 p. 184 Sumatra; 110 p. 493.  
 (*L. Bullatum* (Ach.) Mont.) Java; 124 p. 10 (*L. phyllocarpum* (Pers.) Nyl.)  
 Borneo; 145 p. 6 (*L. phyllocarpum* Mont.) Timor; 273 (*L. bullatum*  
 Mont.) Java.  
 307. *L. diaphanum* (Mont.) Nyl. var. *coralloidea* Mey. et Flot. 97  
 p. 172 (*L. phyllocarpum* var. *coralloideum* Müll.) Java.  
 308. *L. fallax* Müll. 97 p. 172 Java; 103 p. 14 Waigeoe.  
 309. *L. fallax* Müll. from. *sublaeve* Müll. 97 p. 172 Java.  
 310. *L. foliare* Kremp. 123, 124 p. 10 Borneo.  
*L. inflatum* Müll. 145 p. 6 Deutsch Neu-Geunea; 147 p. 133 Neu-Guinea.  
 311. *L. marginellum* (Ach.) Mont. 110 p. 493 Java.  
 312. *L. (Stephanophorus) javanicus* (Mont.) 110 p. 492 (Steph. jav.  
 Mont.) Java.  
 313. *L. tremelloides* (Ach.) Fr. 103 p. 15 Engl. Neu-Guinea; 110 p.  
 493 Java; 124 p. 10 Borneo; 144 (*Collema trem.* Ach.) Java; 273  
 (*L. trem.* Mont.) Java.  
 314. *L. tremelloides* (Ach.) Fr. var. *azureum* (Ach.) Nyl. 110 p. 493  
 (*L. azureum* (Ach.) Mont.) Java; 144 (*Collema azureum* Ach.)  
 Java; 215 p. 29 Deutsch Neu-Guinea.  
 315. *L. tremelloides* (Ach.) Fr. var. *cyanescens* Mont. 144 (*Collema*)  
 Java; 273 Java.

Fam. **Pannariaceae.**

316. *Parmeliella blepharophora* Müll. Arg. 151 p. 278 Java.  
 317. *Pannaria funebris* Kremp. 124 p. 12 Borneo.  
 318. *P. nigrocincta* (Mont.) Nyl. 124 p. 12 Borneo.  
 319. *P. pannosa* (Sow) Del. 103 p. 11 Waigeoe; 124 p. 12 Borneo;  
 122 p. 862 Ambon; 145 p. 10 Ambon; 154 p. 13 Java; 215 p. 30  
 Deutsch Neu-Guinea  
*Coccocarpia aeruginosa* Müll. 103 p. 11 Engl. Neu-Guinea.  
*C. aeruginosa* Müll. var. *subaurata* Jatta 103 p. 11 Engl. Neu-Guinea.

320. *C. aurantiaca* (Hook. et Tayl.) Mont. et v. d. Bosch 110 p. 465 Java; 145 p. 10 Ambon; 154 p. 131 Java.
321. *C. divergens* Kremp.  $\alpha$  *latifolia*  $\beta$  *angustifolia* 124 p. 14 Borneo.
322. *C. epiphylla* (Fée) Kremp. 103 p. 12 Engl. Neu-Guinea; 123. 124 p. 13 Borneo.
323. *C. glaucina* Kremp. 124 p. 14 Borneo.
324. *C. incisa* Pers. 110 p. 465 Java; 124 p. 15 Borneo.
325. *C. molybdeae* (Pers.) Nyl. 103 p. 11 Engl. Neu-Guinea; 110 p. 464 Java; 124 p. 13 Borneo; 154 p. 131 Java; 273 Java; 184a. p. 206 Molukken.
326. *C. pellita* (Ach.) 273 (*Parmelia pellita* Ach.) Java.
327. *C. pellita* (Ach.) Müll. var. *palumbinea* Nyl. 104 p. 180 Sumatra.
328. *C. pellita* (Ach.) Müll. var. *isidiophylla* Müll. 145 p. 10 Ambon.
329. *C. pellita* (Ach.) Müll. var. *smaragdina* (Pers.) Müll. 110 p. 465 (*C. smaragdina* Pers.) Java; 144 (*Parmelia membranacea* Schaer) Java; 145 p. 10 Ambon; 273 (*C. smar.* Pers.) Java.
- 329a. *C. polyphylla* Pers. 84a p. 206 Rawak.
- 329b. *C. viridescens* Pers. 84a p. 207 Rawak.

Fam. **Stictaceae.**

330. *Lobaria* (*Lobarina*) *retigera* (Bory) Nyl. 97 p. 182 Java; 110 p. 441 (*Sticta retigera* Ach.) Java; 273 (*Sticta retigera* Bory) Bima.
331. *L.* (*Lobarina*) *retigera* (Bory) Nyl. form. *isidiosa* Hue 97 p. 182 Java.
332. *L.* (*Ricasolia*) *Schaereri* (Hue) Nyl. 45 p. 266 (*Ricasolia*) Holl. Neu-Guinea; 97 p. 181 Java; 98 Java; 98 (*Sticta Schaereri* Mont. et v. d. Bosch) Java; 110 p. 440 (*Sticta* Sch. Mont. et v. d. Bosch) Java; 144 (*Parmelia stictaeformis* Schaer.) Java; 273 (*Sticta laciniata* Ach. var. *macrophylla* Sow.) Java.
333. *L. setigera* Nyl. 98 Java.
334. *Sticta* (*Stictina*) *argyracea* Del. 97 p. 188 Java; 110 p. 436 Java.
335. *S. aurata* Ach. 110 p. 434 Java.
336. *S.* (*Stictina*) *Beccarii* Kremp. 124 p. 11 Borneo.
337. *S.* (*Stictina*) *Boschiana* (Mont) Nyl. 97 p. 188 Java; 103 p. 7 Engl. Neu-Guinea; 110 p. 436 Java.
338. *S. carpoloma* Del. 110 p. 434 Java.
339. *S. carpolomoides* Nyl. 97 p. 186—187 Java.
340. *S.* (*Stictina*) *filicina* Ach. 97 p. 191 Java; 110 p. 439 Java; 144 Java; 273 Java.
341. *S.* (*Stictina*) *filicina* Ach. *lineariloba* Mont. 110 p. 440 Java.
342. *S.* (*Stictina*) *filicina* Ach. *marginifera* Mont. 110 p. 440 Java.
343. *S. ciliaris* Mont. et v. d. Bosch 110 p. 435 Java.
344. *S. cometia* Ach. 110 p. 435 Java.
345. *S. crocata* Ach. 110 p. 434 Java.

- S. cyphellata* Müll. 103 p. 7 Engl. Neu-Guinea.  
*S. damicornis* (Sow.) Ach. 215 p. 30 Deutsch Neu-Guinea.  
 346. *S. dichotoma* Del. 110 p. 437 Java.  
 347. *S. dissimulata* Nyl. 154 p. 130 Java.  
 348. *S. Dozyana* Mont. et v. d. Bosch 110 p. 436 Java.  
 349. *S. (Stictina) fimbriata* Schaer. 97 p. 192—193 Java; 144 Java; 273 Java.  
 350. *S. gilva* Ach. 110 p. 435 Java.  
 351. *S. granulata* Rab. 110 p. 437 Java.  
 352. *S. (Stictina) Heppiana* Hue 97 p. 189—191 Java.  
     *S. Karsteni* Müll. 103 p. 6 Engl. Neu-Guinea,  
 353. *S. laciniata* Sow. 144 Java; 273 Java (?)  
 354. *S. leucophylla* Müll. Arg. 149 p. 506 Neu-Guinea,  
 355. *S. lutescens* Tayl. 110 435 Java.  
 356. *S. macrophylla* Del. 110 p. 439 Java.  
 347. *S. (Stictina) Mougeotiana* Del. 97 p. 187 Java; 110 p. 435 Java.  
 358. *S. (Stictina) Mougeotiana* Del. var. *aurigera* (Del.) 97 p. 187 Java; 110 p. 434 (*Sticta aurigera* Del.) Java; 154 p. 130 Java; (*St. aur.* Del.) Java.  
 359. *S. multifida* Laur. 97 p. 183 Java; 98 Java.  
 360. *S. (Stictina) orbicularis* Hue 97 p. 193—194 Java; 110 p. 439 (*St. filicina* Ach. *orbicularis* Mont. var. *fungoides* Hepp) Java; 273 (*St. filicina fungoides*) Java.  
 361. *S. patula* Del. 110 p. 440 Java.  
 362. *S. psilophylla* Müll. 97 p. 186 Java.  
 363. *S. Richardi* Mont. 110 p. 437 Java.  
 364. *S. sulphurea* Schaer. 97 p. 184 Java; 110 p. 439 Java; 144 (und als *S. canariensis* Hepp) Java; 273 Java.  
 365. *S. variabilis* Ach. 110 p. 439 Java; 215 p. 30 Deutsch Neu-Guinea; 273 (und als *S. laciniata* Sow. var. *crispata* Schaer.) Java, Soembawa.  
 366. *S. (Stictina) Weigelii* (Ach.) Wain. 97 p. 188 Java.

Fam. **Peltigeraceae.**

367. *Nephroma olivacea* Mont. et v.d. Bosch 110 p. 433 Java.  
 368. *N. resupinata* Ach. 110 p. 433 Java.  
 369. *N. resupinata* Ach. form. *helvetica* Arn. 97 p. 180 Java.  
 370. *Peltigera canina* Willd. 45 p. 266 Holl. Neu-Guinea.  
 371. *P. melanocoma* (Nyl.) Mont. et v.d. Bosch 97 p. 180 (*P. polydactyla* var. *melanocoma* Nyl.) Java; 110 p. 432 Java.  
 372. *P. polydactyla* Fr. 98 Java; 110 p. 432 Java; 144 Java; 273 Java.  
 273. *P. polydactyla* Fr. var. *dolichorrhiza* Nyl. 98 Java.  
 374. *P. polydactyla* Fr. var. *microcarpa* Schaer. 144 Java; 273 Java.

Fam. **Pertusariaceae.**

375. *Pertusaria Blumeana* Müll. Arg. 151 p. 281 Java.

376. *P. communis* Del. 110 p. 482 Java.  
 377. *P. communis* Del. var. *placentiformis* Mont. et v. d. Bosch 146  
 (*P. placentiformis*) Java.  
 378. *P. depressa* Fée) Mont. et v. d. Bosch 110 p. 482 Java.  
 379. *P. leioplaca* var. *placentiformis* Müll. Arg. 146 Java.  
 380. *P. leucostoma* (Bernh.) Mont. et v. d. Bosch 110 p. 482 Java.  
 381. *P. sulphurea*  $\beta$  *rupicola* Schaer. 110 p. 482 Java.  
 382. *P. velata* (Turn.) 154 p. 132 Java.  
 383. *P. verrucosa* Fée 122 p. 864 Ambon.

Fam. **Lecanoraceae.**

384. *Lecanora dissoluta* Nyl. 154 p. 131 Java.  
 384a. *L. domingensis* Pers. 84a p. 194 Rawak.  
 385. *L. endochroma* Fée 124 p. 16 Borneo.  
 386. *L. graneolaris* Müll. Arg. 151 p. 280 Java.  
 387. *L. sophodes* (Ach.) Nyl. 154 p. 131 Java.  
 388. *L. soledifera* Fée 124 p. 16 Borneo.  
 389. *L. subfusca* (L.) 144 Java.  
 390. *L. subfusca* (L.) var. *atrynea* Ach. 273 Java.  
 391. *L. subfusca* (L.) var. *argentata* Ach. 154 p. 131 Java.  
 392. *L. subfusca* (L.) var. *distans* Ach. 273 Java.  
 393. *L. subfusca* (L.) var. *subgranulata* Nyl. 145 p. 11 Timor; 147 p.  
 137 Timor.  
 393a. *Eulecanora neo-guineense* Hennings 80. p. (65) (*Lecanidium*  
*neoguineense*) Neu-Guinea; 215 p. 28 (*L. neo-guineense*) Deutsch  
 Neu-Guinea.  
 394. *Ochrolechia luteola* (Nyl.) 153 p. 132 (*Patellaria luteola* (Nyl.)  
 Müll.) Ambon.  
 395. *O. subrotuliformis* (Jatta) 104 p. 182 (*Patellaria* (*Bilimbia*) *sub-*  
*rotuliformis* Jatta) Sumatra.  
 396. *Lecania Beccarii* Jatta 104 p. 181 Sumatra.  
 397. *L. heterochroa* Müll. 104 p. 180 Sumatra.  
 398. *L. micrommata* (Kremp.) 123, 124 p. 16 Tafel I Fig. 4 (*Lecanora*)  
 Borneo.  
 399. *Phlyctis arachnoidea* Kremp. 123, 124 p. 16 Borneo.  
 400. *P. epiphylla* Fée 123 Borneo; 156 p. 103 Java.

Fam. **Parmeliaceae.**

401. *Parmelia Americana* Mont. 110 p. 447 Java.  
 402. *P. camschadalis* (Ach.) Eschw. 110 p. 446 Java.  
 403. *P. caperata* Ach. 110 p. 144 Java; 273 Java.  
 404. *P. cetrata* forma *sorediifera* Wain. 79 p. 177 Java.  
 405. *P. cinerea* var. *lacustris* Fr. 110 p. 452 Java.  
 406. *P. (Imbricaria) coccinea* Schaer. 144 Java; 273 Java.  
 407. *P. dictyoplaca* Mont. et v. d. Bosch 110 p. 450 Java.

408. *P. diatrype* Ach. 110 p. 443 Java.
409. *P. eumorpha* Hepp 110 p. 449 Java; 273 Java.
- 409a. *P. fimbriata* Pers. 84a p. 169 Rawak.
410. *P. gelida* Ach. 110 p. 451 Java.
411. *P. glaberrima* Kremp. 122 p. 862 Ambon.
412. *P. gossypina* Mont. 110 p. 449 Java.
413. *P. gyrosa* Mont. 110 p. 452 Java.
414. *P. Hildebrandtii* Kremp. var. *subcetraria* Jatta 104 p. 171 Sumatra.
415. *P. Holleana* Mont. 110 p. 449 Java.
416. *P. hypoleuca* Mühlb. 110 p. 447 Java.
417. *P. intertexta* Mont. et v. d. Bosch 110 p. 445 Java.
418. *P. javanica* Mont. 110 p. 453 Java.
419. *P. laevigata* Ach. 97 p. 176 Java; 104 p. 172 Sumatra; 122 p. 862 Ambon; 144 Java; 273 Java.
420. *P. latissima* Fée 145 p. 9 Timor; 147 p. 134 Timor.
421. *P. leucomela* (Ach.) 110 p. 446 Java; 273 (*Physcia leucomelas* Ach.  $\beta$  *crinalis* Hepp) Java.
422. *P. Massarti* (Hue) 97 p. 176—177 Java.
423. *P. melanotricha* Mont. et v. d. Bosch 110 p. 447 Java; 144 (*P. setosa* Ach.) Java; 273 (*Physcia Schaereri* Hepp) Java.
424. *P. Molkenboerii* Mont. et v. d. Bosch 110 p. 448 Java.
425. *P. obsessa* Nyl. 145 p. 9 Banda.
426. *P. pallescens* Fr. 110 p. 451 Java.
427. *P. pannosa* Ach. 110 p. 449 Java; 144 (*P. atro-pannosa* Schaer.) Java; 273 Java.
428. *P. pannosa* Ach.  $\beta$  *soredia* Schaer. 273 Java.
429. *P. parvifolia* (Pers.) Mont. 110 p. 450 Java.
430. *P. perlata* Ach. 104 p. 171 Borneo; 110 p. 442 Java; 144 Java.
431. *P. perlata* Ach. var. *olivaria* Ach. 104 p. 171 Borneo; 145 p. 9 Ambon.
432. *P. perlata* Ach. var. *olivatorum* Ach. 110 p. 442 Java.
433. *P. perlata* Ach.  $\gamma$  *ceratophylla* Mont. et v. d. Bosch 110 p. 442 Java.
434. *P. perlata* Ach. *ciliata* Schaer. 110 p. 442 Java
435. *P. picta* (Sow.) Nyl. 104 p. 173 Borneo; 110 p. 451 Java; 144 (*P. aplanata* Fée) Java; 273 Java.
436. *P. picta* (Sow.) Nyl. var. *sorediata* Schaer. 145 p. 9 Timor; 273 Java.
437. *P. pilulifera* Pers. 110 p. 451 Java.
438. *P. punicea* Ach. 110 p. 452 Java; 151 p. 131 (*Lecanora punicea* Ach.) Java.
439. *P. quercifolia* var. 144 Java.
440. *P. relicina* Fries 110 p. 445 Java; 124 p. 12 Borneo.
441. *P. rubiginosa* Ach. 110 p. 448 Java.
442. *P. saccatiloba* Tayl. 110 p. 442 (*P. Zollingeri* Hepp) Java; 217 Java; 273 (*P. Zollingeri* Hepp) Java.

443. *P. Saubinetii* Mont. 110 p. 449 Java.  
444. *P. scortea* Ach. 104 p. 173 Borneo,  
445. *P. semiteres* Mont. et v. d. Bosch. 110 p. 444 Java,  
446. *P. sinuosa* (Ach.) Nyl. 97 p. 176 Java; 110 p. 445 Java,  
447. *P. speciosa* Ach. 110 p. 447 Java; 273 Java,  
448. *P. sphinctrina* Mont. 110 p. 450 Java,  
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449a. *P. strigosa* Pers. 84a p. 198 Rawak,  
450. *P. subfurata* Nees et Flot. 110 p. 444 Java,  
451. *P. subfusca* Ach. 110 p. 452 Java,  
452. *P. tabacina* Mont. et v. d. Bosch 110 p. 443 Java.  
453. *P. tartarea* var. *frigida* Fr. 110 p. 452 Java.  
454. *P. tiliacea* Ach. 104 p. 173 Borneo; 110 p. 443 Java.  
455. *P. tinctorum* Nyl. 153 p. 132 Java.  
456. *P. verrucosa*  $\beta$  *Pertusaria* Fr. 110 p. 453 Java.  
457. *P. xantholepis* Mont. et v. d. Bosch 110 p. 446 Java.  
457a. *Anzia Gregoriana* Müll. 149 p. 506 Holl. Neu-Guinea.  
457b. *Anzia hypoleuca* Müll. 149 p. 506 Holl. Neu-Guinea.  
458. *Cetraria* (*Platysma*) *citrina* Tayl. 97 p. 179—180 (*Platysma citrinum* Nyl.) Java; 98 (*Pl. citrinum* Nyl.) Java; 110 p. 430 (*C. pallescens* Schaer.) Java; 110 p. 431 (*C. Teysmanni* Mont. et v. d. Bosch) Java; 144 (*Parmelia herbacea*, *C. pallescens* Schaer.) Java; 154 p. 136 (*Platysma*) Java; 273 (*C. pallescens* Schaer.) Java.  
459. *C. rhytidocarpa* Mont. et v. d. Bosch 110 p. 430 Java.  
460. *C.* (*Platysma*) *sanguinea* Schaer. 97 p. 177—179 (*Pl. sanguineum* Hue) Java; 110 p. 424 (*Parmelia perforata*) p. 430, p. 442 (*Parmelia perlata* Ach.  $\beta$  *Cetrarioides* Mont. et v. d. Bosch) Java; 144 Java; 273 Java.  
461. *C.* (*Platysma*) *subperlatum* Nyl. 154 p. 130 Java.

#### Fam. *Usneaceae*.

462. *Evernia flavicans* (Sow.) Fr. 110 p. 429 Java; 273 Java, Bima.  
463. *E. jubata* Fr. 110 p. 429 Java.  
463a. *Ramalina calicaris* (*canaliculata*) Fr. 154 p. 130 Java.  
464. *R. dichotoma* Hepp 97 p. 175 (*R. subpusilla* Nyl.) Java; 110 p. 429 Java; 273 Java.  
465. *R. farinacea* var. *nervulosa* Müll. 145 p. 8 Timor.  
466. *R. fraxinea* Ach. 110 p. 429 Java; 144 Java.  
467. *R. fraxinea* Ach. *ampliata javanica* Hepp 273 Java.  
468. *R. fraxinea* Ach. *calicaris javanica* Hepp 273 Java.  
469. *R. inflata* Hook. 110 p. 429 Java.  
470. *R. linearis* Nyl. 145 p. 8 Timor.  
470a. *R. pumila* Mont. 154 p. 130 Java.  
470b. *R. pusilla* Le. Prev. 154 p. 130 Java.

471. *Usnea barbata* Fr. 110 p. 427 Java; 214 p. 68 Deutsch Neu-Guinea; 272 p. 237 Java; B.
472. *U. barbata* Fr. var. *articulata* Schaer. 144 Java; 154 p. 130 (*U. articulata* Ach.) Java; 273 (*U. b. l. alpestris articulata* Schaer.) Java.
473. *U. barbata* Fr. var. *florida* (L.) Fr. 97 p. 174 (*U. florida* Hoffm.) Java; 215 p. 30 Deutsch Neu-Guinea.
474. *U. barbata* Fr. var. *florida* var. *comosa* Wain. 97 p. 174 (*U. flor. Hoffm. var.*) Java.
475. *U. barbata* Fr. var. *florida* var. *hirta* Ach. 97 p. 174 (*U. flor. Hoffm. var.*) Java.
476. *U. barbata* Fr. var. *hirta* Schaer. 144 Java; 273 Java; 273 (var. *l. campestris hirta* Schaer.) Java.
477. *U. barbata* Fr. var. *hirta* Schaer. *tamborensis* Zoll. 273 Soembawa.
478. *U. barbata* Fr. var. *plicata* (L.) Fr. 97 p. 175 (*U. dasypoga* var. *plicata* Hue) Java; 110 p. 427 (*U. plicata* Hoffm.) Java; 215 p. 30 Deutsch Neu-Guinea.
479. *U. barbata* Fr. var. *plicata* (L.) Fr. b. *pendula* Schaer. 273 Java.
480. *U. ceratina* Ach. 97 p. 175 Java; 110 p. 427 Java; 154 p. 130 Java; 273 Java.
481. *U. ceratina* Ach. b. *scabrosa* Ach. 273 Java.
482. *U. longissima* Ach. 98 Java; 110 p. 427 Java; 154 p. 130 Java.
483. *U. longissima* Ach. b. *rubiginosa* Hepp 373 (*U. barbata* long b. *rubiginosa*) Bima.
484. *U. Vrieseana* Mont. et v. d. Bosch 110 p. 428 Java.

Fam. **Theloschistaceae.**

485. *Theloschistes flavicans* Norm. 97 p. 175 Java.
- 485a. *Buellia punctiformis* Masee 147 p. 138 Holl. Neu-Guinea.

Fam. **Physciaceae.**

486. *Pyxine coccinea* (Schaer.) Mont. et v. d. Bosch 110 p. 460 Java.
487. *P. Meissnerii* Fuck. 154 p. 131 Java.
488. *P. sorediata* (Ach.) Fr. 104 p. 179 Borneo; 110 p. 466 Java; 124 p. 12 (*P. Cocoës*) (Sow.) Tuckerm. var. *sorediata* (Fr.) Borneo; 144 (*Parmelia saxatilis* var. *pruniformis*) Java.
489. *Physcia adglutinata* Nyl. 97 p. 180 Java.
490. *P. aegialita* Nyl. 153 p. 132 Java.
491. *P. integrata* Nyl. 153 p. 132 Ambon.
492. *P. integrata* Nyl. var. *sorediosa* Wain. 97 p. 180 Java.
493. *P. obsessa* (Mont.) Nyl. 153 p. 132 Ambon; 154 p. 131 Java.
494. *P. picta* (Sow.) Nyl. 97 p. 180 Java; 122 p. 862 Ambon; 124 p. 12 Borneo; 154 p. 131 Java.
495. *P. picta* (Sow.) Nyl. var. *sorediata* Müll. Arg. 147 p. 135 Timor.



496. *Anaptychia hypoleuca* Hue 97 p. 176 (*Pseudophyscia*) Java.  
 497. *A. leucomelaena* Wain. 45 p. 266 (*Physcia leucomela* Mich.) Holl. Neu-Guinea; 97 p. 175 Java; 144 (*Borrera leucomelas* Ach.) Java; 154 p. 131 (*Physcia leucomela* Mich.) Java.  
 498. *A. podocarpa* Trev. 97 p. 175-176 Java; 110 p. 447 (*Parmelia podocarpa* Mont. et v. d. Bosch) Java.

Hymenolichenes.

499. *C. aeruginosa* (Blume et Nees v. Esenbeck) 26 Java; 271 p. 384 (*Dichonema Aeruginosa* Nees et Bl.) Java; 273 (*Telephora* (*Dichonema*) *aeruginosa* Nees) Java.  
 499a. *Cora ligulata* Kremp. 124 p. 15 Borneo.  
*Cora pavonia* Web. et Mohr. 219 p. 253 Deutsch Neu-Guinea.  
 500. *Dichaena sericeum* Mont. 45 p. 266 Holl. Neu-Guinea, 274 p. 200 (*Dichonema sericeum*) Java,  
 501. *Dictyonema expansum* Poulsen 178 Java.  
 502. *D. irpicinum* Mont. 154 p. 131 (*Dichonema*) Java.  
 503. *D. membranaceum* Agardh 124 p. 59 Borneo; 40 p. 117 Eng. Neu-Guinea.

Zweifelhafte und ungenügend bekannte Arten.

- Barba saturni* Rumph. 204 p. 88 Ambon.  
*Byssophytum Hollei* Mont. et v. d. Bosch 110 p. 494 Java.  
*Erioderma polycarpa* Fée 110 p. 432 Java.  
*Muscus capillaris* Rumph. 204 p. 89 Tab. XL Fig. 2 Ambon.  
*Stigonema Bornense* Kremp. 124 p. 59 Borneo.  
*Tricharia melanothrix* Fée 123 Borneo.  
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### Bemerkungen und Verbesserungen.

Die Nummern 63 und 64 der Literaturliste sind später weggefallen, weil sie nicht über das Gebiet handelten. Durch einen Irrtum ist Abhandlung 150 zwei mal vertreten (schon als 145).

S. 59 No. 1239 H. (Radulum) herpotodon Lév., muss sein: herpetodon.

S. 75 No. 1490 füge hinzu: 204 p. 128 (Fungus arboreus II ruber) Ambon.

S. 84 No. 1612 A. ephemerus Bull., muss sein: C. ephemerus (Bull.).

# UEBER EINIGE VON APHIDEN AN STYRAX-ARTEN GEBILDETE GALLEN

VON

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Mit Tafel 1.

## Einleitung.

Schon vor mehr als 30 Jahren sind die von einer Aphide: *Astegopteryx styracophila* Karsten an *Styrax benzoin* gebildeten Gallen von TSCHIRCH auf der Insel Java gefunden und beschrieben worden. Die Gallengebilde ziehen durch ihre bizarre Form sehr die Aufmerksamkeit auf sich und auch morphologisch sind sie ein Studium wert. TSCHIRCH beschrieb von dieser Pflanze zwei Gallenarten, nämlich eine Blütengalle, welche aus vielen Einzelgallen zusammengestellt ist und eine Achsenknospengalle, welche solitär ist.

Beide Gallen kommen auf den Bäumen im botanischen Garten zu Buitenzorg vor, dabei ist die erste sehr häufig, die zweite selten. Sie werden von denselben Aphiden gebildet.

SASAKI beschrieb eine der Blütengalle von *Styrax benzoin* ähnliche Galle auf *Styrax japonicus*. Es ist aber eine Endknospengalle. Die Gebilde sind in Japan sehr häufig und werden von der Bevölkerung Nekoashi (d. h. Katzfusz) genannt. Diese Gallen werden von einer anderen *Astegopteryx*-Art gebildet, nämlich von *A. nekoashi* Sasaki.

MATSUMURA beschrieb noch eine dritte *Astegopteryx*-Art nämlich *A. styraci*, welche auf *St. obassia* Gallen bildet.

1917 gab J. J. SMITH, eine Beschreibung einer neuen *Styrax*-Art: *St. sumatranus*, welche in Sumatra ziemlich häufig angepflanzt zu sein scheint, aber da die Unterschiede zwischen dieser neuen Art und *St. benzoin* sehr gering sind, bis vor Kürze noch nicht beachtet worden war. An dem Material von dieser neuen *Styrax*-Art waren aber ebenfalls von Aphiden gebildete Gallen, welche wie die Gallen an *St. benzoin* gebüschelt an einer Stelle der Zweige befestigt waren. Dr. SMITH sah sie für Blütengallen an und wies schon darauf hin, dass diese Galle aus einem langen spiralenförmig gedrehten Rohre bestand. Wie wir weiter sehen werden, ist diese Galle aber keine Blütengalle.

Dieses Material wurde behufs einer näheren Untersuchung von dem Forstbeamten Herrn V. A. THEUNISSEN wieder für mich gesammelt, und dabei entdeckte er noch einige Gallen von anderer Form. Ausserdem sammelte Herr J. A. LÖRZING, der eifrige Hortulanus der Abteilung des Buitenzorger Gartens im Sumatra in Sibolangit in der Nähe von Medan auf *Styrax*-Bäumen ganz merkwürdig gebaute Gallen, welche unglaublich

groß waren; und dazu mehrere Arten von Aphiden-Gallen an diesen Pflanzen. Dieses Material ist nun in meinem Besitze; leider sind Jugendstadien nur spärlich vorhanden. Von einer Galle habe ich selbst auch die Entwicklung verfolgen können, die Beschreibung davon kann man unter No. 6 finden.

Ausßerdem kann ich eine *Styrax*-Art von *Sibolangit* nicht unter einer der bekannten Arten unterbringen. Die Blätter sind auch oberseits auf den Nerven stark behaart und beschuppt und fallen auch durch ihre Farbe und die geringere Größe der Blätter direct auf.

Alle diese Gallen werden von Aphiden gebildet, und von den lebenden Exemplaren einiger Typen konnte ich Läuse sammeln. Herr VAN DER GOOT war so freundlich, mir mit zu teilen, dasz es sich zwar um *Astegopteryx*-Arten handelte, dasz aber nicht mit Sicherheit bestimmt werden konnte, ob hier neue Arten vorlagen oder nicht, da geflügelte Exemplare nicht in diesem Material vorkamen. Ob die verschiedenen Gallen also von einer oder von mehreren *Astegopteryx*-Arten gebildet werden, musz ich dahingestellt lassen, obschon es zu erwarten ist, dasz mehrere Arten in den verschiedenen Gallen aufgefunden werden sollen.

Ausßerdem befand sich im Herbarium Generale des hiesigen Gartens noch Material aus verschiedenen anderen Gegenden und an anderen *Styrax*-Arten, welche, so weit mir bekannt, noch nicht beschrieben worden sind.

Alles in Allem kenne ich jetzt 18 verschiedene Gallenformen, welche von Aphiden an *Styrax*-Arten gebildet werden. Ich werde hier die Beschreibung der Gallen zusammen mit ihren Abbildungen geben, der Vollständigkeit halber füge ich die Beschreibung der schon bekannten Gallen noch hinzu.

### Einzelbeschreibungen der Gallen.

#### I. *Styrax benzoin* DRYAND.

##### 1. *Blumengalle*.

Diese Galle wurde von TSCHIRCH <sup>1)</sup> beschrieben. Er fand die Missbildungen im botanischen Garten zu Buitenzorg und in einer Anpflanzung auf den östlichen Abhängen der Vulkan Salak, welche nicht mehr besteht. Ich kenne sie jetzt von vielen Stellen und überall, wo dieser Baum vorkommt, scheint auch die Blumengalle zu finden zu sein.

Wir können auf die Abhandlung von TSCHIRCH verweisen. Darin findet man eine Beschreibung des Gallentieres, *Astegopteryx styracophila*, von Dr. KARSCH beigegeben.

Die Gallen sind auf den beiden alten Bäumen in unsrem Garten sehr häufig, und im Anfang von 1920 hatte ich eine ganze Menge von ungeflügelten und geflügelten Läusen zur Verfügung. Diese Läuse wurden aus ihrer Wohnung herausgeholt und dann auf junge Topfpflanzen dieses Baumes übergebracht. Die Bäumchen wurden unter Glaslocken weiter gezüchtet; welche in einer kühlen

<sup>1)</sup> A. TSCHIRCH: Ueber durch *Astegopteryx*, eine neue Aphiden-Gattung, erzeugte Zooecidien auf *Styrax benzoin* Dryand.

Ber. d. Deutschen Bot. Ges. 1890, Band VII, S. 48—53. Tafel IV.

beschatteten Veranda aufgestellt waren. Die Pflanzen wuchsen ganz gut und die Tiere lebten noch ungefähr zwei Monate an der Unterseite der jungen Blätter.

Die jungen Blätter entfalteten sich nicht normal, wurden bootförmig nach unten gebogen, aber an den Pflanzen entwickelten sich kleine Knospengallen, welche von derselben *Astegopteryx*-Art geformt werden. (Siehe No. 2).

Dieselbe Galle wurde auch in Kürze durch KÜSTER <sup>1)</sup> besprochen, welcher angibt dasz man sie mit einer gefüllten Blüte vergleichen kann.

Auch in der wichtigen Arbeit von KOORDERS und VALETON <sup>2)</sup> über die Baumarten von Java wird die Galle erwähnt.

Fundstelle: *Java*. Abt. Soekaboemi, Palaboean Ratoe. S. H. KOORDERS coll. 22. Juni 1890, No. 8048  $\beta$  und 27. April 1893, No. 12263  $\beta$ ; Trètes, Walirang Gebirge, pl. 800 M, E. BREMECAMP coll. Herb. D. v. L. No. 2951, Juli 1918; botanischer Garten, Buitenzorg, zirka 250 M, 6/IX. 1918, Herb. D. v L. No. 2929.

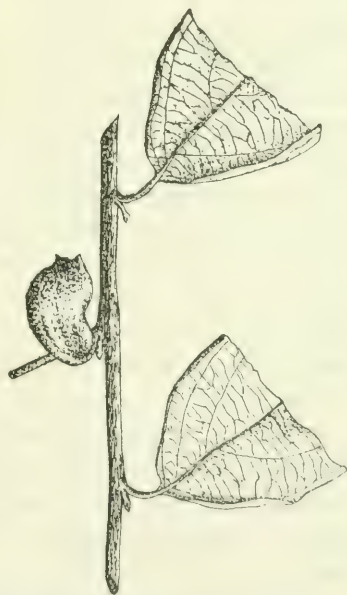
*Sumatra*. Tapanoeli, Gating, A. V. THEUNISSEN coll. 4. Juli 1915 No. 3, und bei Gonting, Juli 1916; und zwischen Sibolga und Taratoeng, 23. November 1918 No. 1.

*Perak*. pl. 150 M. Juni 1886. Dr. KING's Sammler, Ulu Babong coll. No. 10305.

## 2. *Achsenknospengalle.*

Von TSCHIRCH <sup>3)</sup> wurde an den selben Pflanzen eine ganz andere Gallenbildung gefunden, welche, wie er schon angibt, viel weniger vorkommt als die Blumengalle. Doch kann man sie regelmässig in den Bäumen finden. Eine echte Knospengalle ist es freilich nicht. Meistens ist sie an der Seite der Achsenknospe entwickelt und bleibt diese ganz normal. Sie macht mehr den Eindruck, an der Rinde in nächster Nähe der Achsenknospe entstanden zu sein. Diese Galle ist in Figur 1 abgebildet. Sie ist meistens etwas gekrümmt. Übrigens verweise ich auf die Beschreibung, welche TSCHIRCH von dieser Galle gibt.

Fundstelle: *Java*. Abt. Soekaboemi, Palaboean Ratoe, S. H. KOORDERS coll. 22. Juni 1890. No. 8048  $\beta$ ; botanischer Garten zu Buitenzorg, 6 December 1918, Herb. D. v. L. No. 3071, *Sumatra*. Sibolangit bei Medan zirka 400 M. im Urwald. 13. Juli 1921. Herb. D. v. L. No. 5537.



Figur 1. Die zweite Galle auf *Styrax benzoin* Dr.  $\times 2\frac{2}{3}$ .

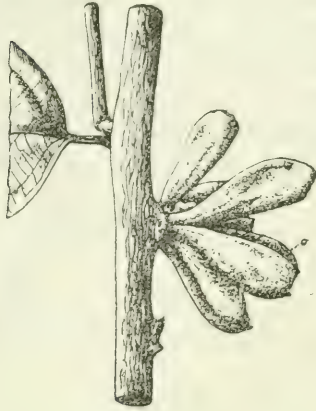
<sup>1)</sup> E. KÜSTER, Die Gallen der Pflanzen, Leipzig 1911, S. 102.

<sup>2)</sup> S. H. KOORDERS en Th. VALETON, Bijdrage No. 7 tot de kennis der Boomsorten op Java, Mededeelingen uit 's Lands Plantentuin No. XLII, Batavia 1900, S. 133.

<sup>3)</sup> TSCHIRCH, loc. cit. S. 50, Tafel IV, Figur 15.

### 3. Rindengalle.

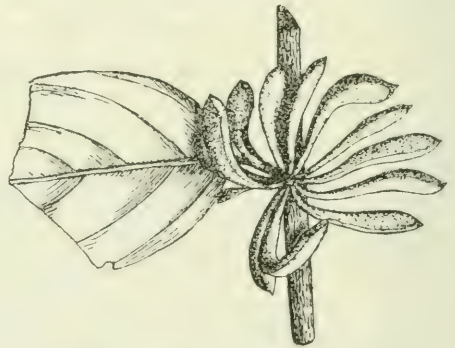
Diese Gallen entstehen an beliebigen Stellen der Zweige. Sitzen sie in der Nähe der Spitze, dann stirbt diese ab oder bleibt klein, sonst entwickeln die Zweige sich normal. Die Gallen bestehen aus einigen bis zu zehn zusammengedrückten Säcken, welche gelbbraun sind, und die Oberfläche derselben ist ausserdem rau, überdeckt mit kurzen Pusteln wie die folgende Galle (No. 4). Sie unterscheiden sich von derselben aber deutlich dadurch, dass die Öffnung nicht vom Fusz bis zur Spitze geht, sondern nur an dem breiten oberen Ende gelegen ist. Diese Öffnung ist eigenartig ausgebildet. Es ist keine einfache Spalte, sondern diese ist in regelmässigen Abständen mit kleinen kreisrunden Erweiterungen versehen, sodass die Oberseite der Galle eine lange Einsenkung besitzt, worin wie mit einer Nadel gestochene Öffnungen vorkommen. Siehe Fig. 2o. Die Gallen sind taschenförmig und zusammengedrückt, die Rinde ist geöffnet und die Säcke kommen



Figur 2. Rindengalle an *Styrox benzoin* Dryand.  $\times \frac{2}{3}$ .

aus der so gebildeten Öffnung zum Vorschein.

Eine ähnliche Galle fand ich auch an dem Blütenstande von den Bäumen in dem botanischen Garten. Sie waren etwas zarter und ähnelten den Blütengallen, unterscheiden sich aber leicht von denselben durch verschiedene Merkmale. Erstens sind sie gelbbraun, während die Blütengallen graugrün sind, zweitens sind die Säcke ungestielt, sie werden allmählig dünner, oft sind sie sickelförmig nach innen gebogen. Ausserdem liegt die Öffnung an der Spitze und befinden sich keine drahtförmigen Vorsätze in den Gallen. Im Innern sind sie sehr dunkel und mit einigen kleinen kurzen Fortsätzen versehen.



Figur 3. Rindengalle an *Styrox benzoin* Dryand.  $\times \frac{2}{3}$ .

Von diesen unterscheidet sich wieder eine Galle aus Palembang durch zartere Struktur und schmälere Bau, ausserdem sind sie mehr stielförmig an der Basis verschmälert. Im Innern sind diese dunkelpurpurn. Siehe Figur 3.

Fundstelle: *Java*. Botan. Garten Buitenzorg, 250 M. 6/XI. 1918, Herb. D. v. L. No. 2929. Buitenzorg, Tjampea, pl. 250 M. S. H. KOORDERS coll. 2. Juli 1898, No. 30395  $\beta$ . Abt. Sockaboemi, Palaboean Ratoe, S. H. KOORDERS

coll. 22. Juni 1890, No. 8048  $\beta$ . Abt. Soekaboemi, Palaboean Ratoe, S. H. KOORDERS coll. 27. April 1893. No. 12263  $\beta$ .

*Sumatra.* W. Küste, Tapanoeli, Godang, 29. November 1918, A. V. THEUNISSEN coll. No. 1; idem Habinsaran bei Gonting, Juli 1916, A. V. THEUNISSEN coll. idem Palembang. Abteilung Rawas, pl. 100 M; 26 März 1916, W. GRASHOFF coll., No. 1015; Tapanoeli Gating, A. V. THEUNISSEN coll. No. 3, 4. Juli 1915.

Sibolangit bei Medan, zirka 400 M. im Urwald. 13. Juli 1921. Herb. D. v. L. N. 5535. Bajoengklintjir, bei Palembang, September 1920. A. THORENAAR coll. No. 42 T. 1 P. 55.

*Perak.* pl. 150 M. Juli 1883. Dr. KING'S Sammler Juru coll. No. 7840. (dieses Material ist ganz zerstückelt).

#### 4. *Rindengalle.*

Eine sehr merkwürdige Galle fanden wir auf *Styrax*-Material im



Figur 4. Rindengalle an *Styrax benzoin* Dryand.  $\times 2/3$ .

Herbarium Generale des botanischen Gartens. Nur einige Exemplare lagen leider vor, die einander aber ganz ähnlich sind, Sie lassen sich leicht von allen anderen Gallen dieser Art unterscheiden durch ihre gelbbraune und sehr unebene Oberfläche. Die Gallen sind aus 10—12 einzelnen Gallen zusammengesetzt, welche in einer Ebene um eine zentrale kreisrunde Stelle (Figur 4) angeheftet sind, wie das bei der vorigen Galle auch vorkommen kann. Sie können an beliebigen Stellen von jungen dünnen Stengeln entstehen; der Stengel unterhalb der Galle wird dabei erheblich verdickt; der oberhalb der Galle sitzende Stengelteil ist aber meistens dünn und verkümmert und trägt keine Blätter mehr. Jede einzelne Galle ist sackförmig und zusammengedrückt und auf der schmalen Seite befindet sich eine Spalte, welche vom Fusz bis zur Spitze der entgegengesetzten Seite läuft. Siehe die beigegefügte Figur 4. Im Innern sind die Gallen dunkelbraun und mit einigen kurzen stachelartigen Fortsätzen versehen.

Fundstelle: *Sumatra's Westküste*, bei Gonting Habinsaran Juli 1916. A. V. THEUNISSEN coll.; Tapanoeli, Gating, A. V. THEUNISSEN coll. No. 3; 4. Juli 1915.

### 5. Rindengalle.

An beliebigen Stellen, aber meistens in der Nähe der Blattachseln, befinden sich Gallen, welche aus langen, mehr oder weniger zylindrischen Röhren zusammengesetzt sind. Diese Röhren sind ungefähr 12 cM. lang oder kürzer und der Länge nach gespalten. Sie sind ziemlich regelmässig um eine kreisrunde Stelle herumgestellt und ausserdem gekrümmt oder gebogen, wie das in der beigefügten Figur 5 leicht zu sehen ist. Die Oberfläche derselben ist mit Längsrissen versehen und dicht mit kurzen gelbbraunen Haaren überdeckt.



Figur 5. Rindengalle an *Styrox benzoin* Dryand.  $\times \frac{2}{3}$ .

Fundstelle: *Sumatra's West-Küste*. Tapanoeli, Gating, 4. Juli 1915. A. V. THEUNISSEN coll. No. 3; idem Tarotoeng, 10. December 1918. A. V. THEUNISSEN coll. No. IV.

*Perak*.  $\pm$  150 M. Juli 1883, Dr. KING'S Sammler; Juru coll. No. 7840.

### 6. Rindengalle.

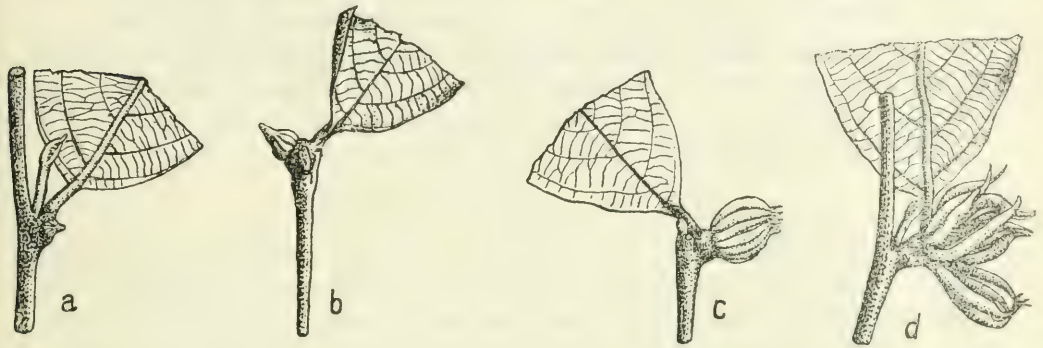
Auf meiner letzten Exkursion nach der Abteilung des botanischen Gartens in Sibolangit bei Medan (Sumatra) entdeckte ich noch eine neue Gallenart auf dieser Pflanze. Diese Gallen sind der an *Styrox sumatranus* unter N. 13 beschriebenen Rindengalle sehr ähnlich. Sie sind meistens an der Basis der Blattstiele entwickelt und bestehen aus 8—15 langen zylindrischen, oft etwas spiralig gedrehten Röhren, die wie die der vorigen Galle strahlenförmig um eine flache zentrale Stelle angeordnet sind. Die Gallenröhren sind 5—10 cM. lang und etwa 2 mM. dick, die Öffnung ist eine Längspalte, welche von der Basis bis zur Spitze läuft.

Von dieser Galle fand ich auch die ersten Entwicklungsstadien.

Das Muttertier setzt sich am Grund eines Blattstieles fest und bleibt so ruhig sitzen. Allmählich wachsen dann kleine Fortsätze um das Tier herum, die es ganz einschliessen und sich nach oben wieder zusammenbiegen, sodass die Mutterlaus ganz von den Wucherungen umschlossen



wird. Die Gallen sind dann sehr klein und schwer zu finden. Zu gleicher Zeit wird der Blattstiel verdickt, siehe Figur 6 bei a. Allmählig werden



Figur 6. Junge stadien der Aphiden-Galle (N. 6) an *Styrax benzoin* Dryand. natürl. Grösse.

die Fortsätze grösser, siehe bei b, und nach einiger Zeit biegen sie sich mit ihren Spitzen etwas aus einander, siehe bei c. Die Röhren werden geräumiger und endlich wachsen sie aus einander, wie das bei d zu sehen ist. Die eigentlichen Gallenröhren breiten sich endlich flach aus, sodass die ganze Galle schliesslich radförmig wird.

Fundstelle: *Sumatra*, Sibolangit bei Medan, zirka 400 M. im Urwald, 13. Juli 1921. Herb. D. v. L. N. 5536.

## II. *Styrax japonicus* SIEB. et ZUCK.

7. Von Professor C. SASAKI <sup>1)</sup> erhielt ich einiges Material dieser in Japan so häufigen Galle, wofür ich ihm meinen herzlichen Dank ausspreche.

Diese Galle ist aber schon von ihm selbst beschrieben worden, sodass ich auf seine Verhandlung hinweisen möchte.

Im Groszen und Ganzen ähnelt diese Galle der an *Styrax serrulatum* (Siehe No. 16) von mir in diesem Beitrag beschriebenen. Sie wird verursacht von *Astegopteryx nekoashi* SASAKI.

Auch die Biologie des Tieres und die Entwicklung der Galle wurde vom genannten Autor beschrieben.

Fundstelle: *Japan*, Tokyo, C. SASAKI coll.

## III. *Styrax obassia* SIEB. und ZUCK.

8. Professor MATSUMURA <sup>2)</sup> hat eine *Astegopteryx*-Art beschrieben, nämlich *A. styraci*, welche Gallen an obgenannten *Styrax*-Art bildet.

<sup>1)</sup> C. SASAKI. A New Aphid-Gall on *Styrax japonicus*. Extrait du 1er Congrès international d'Entomologie 1910, Bruxelles 1911. S. 449. (Zahlreiche Abbildungen von Gallen und Aphiden findet man auf Tafel XXV und XXVI).

<sup>2)</sup> SH. MATSUMURA, Synopsis of the Pemphigidae of Japan. S. 53, Tafel XII Figur 1. A collection of Essays for Mr. Yasushi Nawa, Gifu, Japan, October 1917.

Nur eine kurze Beschreibung der Galle ist beigelegt und eine Abbildung derselben. Hieraus ist es ersichtlich, dass es sich hier wahrscheinlich um eine Endknospengalle handelt. Es entstehen grosse unregelmässige hohle Gebilde, welche gelb-grün und etwas zusammengedrückt sind. Auf der Aussen- und Innenseite sitzen unregelmässige Verzweigungen mit tubenförmigen Auswüchsen. An der Spitze dieser Auswüchse befinden sich die Öffnungen. Eine grosse Galle hatte einen Durchmesser von zirka 8 c.M.

Fundstelle: *Japan* (Hokkaido).

#### IV. *Styrax serrulatum* ROXB.

9. *Blumengalle*. Im Herbarium des hiesigen botanischen Gartens fand ich Material von obengenannter Pflanze aus Assam gesammelt von J. KURZ. Es bestand aus einigen Zweigen mit Blättern und Blütenstände. Es waren daran keine Blumen mehr vorhanden; wohl aber zahlreiche Gallen. Leider war das Material vollkommen auf dem Karton aufgeklebt worden, und stark gepresst, sodass ich es nicht mehr genau untersuchen konnte, und verschiedenes unaufgeklärt bleiben muss. Die Gallen schliessen die Verzweigungen der Blütenstände ab und sind fast sicher aus Blumen hervorgegangen. Sie sind lang gestielt, und ungefähr 1 c.M. von der Basis entfernt sitzen einige kürzere oder längere, freie oder zu einem Trichter mit einander verwachsene Blättchen, welche allem Anschein nach Reste des Kelches sind. Es können auch stark entwickelte Vorblätter sein. Diese bilden eine Art Napf und aus dieser ragt ein dicker Stiel heraus, welcher allmählig in ein Büschel von kleinen Säcken übergeht, wie wir solche bei den anderen Gallen auch schon begegnet haben. Nur sind sie viel kleiner, ungefähr 6—8 mM lang und pl. 4 mM breit. Sie sind stark braun behaart. Diese Säcke (jede Galle ist aus ungefähr 15 solchen zusammengesetzt) sind nach aussen gerichtet und an der Stelle, wo sie sich vereinigen, findet man oft kleine drahtdünne Blätter, wie man solche auch an den Blütenstandgallen von *St. benzoin* (Siehe No. 1) finden kann. So weit ich sehen konnte, sind die Einzelgallen ganz geschlossen; vielleicht



Figur 7. Blumengalle an *Styrax serrulatum* Roxb.  $\times \frac{2}{3}$ .

tragen sie an dem Gipfel eine kleine Öffnung. Die Gallen machen den Eindruck einer hübschen Blume. Siehe Figur 7. In dem alten Material waren die Aphidenreste noch zu erkennen.

Diese Galle wird schon erwähnt von KOORDERS und VALETON <sup>1)</sup> in ihrer Arbeit über die Baumarten von Java. Wahrscheinlich haben sie dasselbe Material gesehen, das im Herbarium Generale des Buitenzorgischen botanischen Gartens bewahrt wird.

Fundstelle: Assam Herb. Sulp. Kurz, No. 289, Kasi Hills  $\pm$  1000 M, Juni 1877.

Assam. Colonel JENKENS coll. ohne No. und ohne Datum.

### 10. Endknospengalle.

An Material von dieser Pflanze, das sich im Herbarium des botanischen Gartens befand, entdeckte ich einige Gallen, welche alle an der Spitze von



Figur 8. Endknospengalle an *Styrax serrulatum* Roxb.  $\times \frac{2}{3}$

(Siehe Figur 8a). Auch bei *Styrax serrulatum* sind es Rosetten von schlauchartigen oder bauchig aufgetriebenen Säcken, die dicht gedrängt bei einander an dem Gipfel eines Stengels stehen und das Wachstum derselben abschliessen. Es sind auch die Blätter modifiziert: Während normale Blätter an dem Gallenstiel noch entwickelt sind, sind sie klein geblieben. (Figur 8b). Von den Gallen an *Styrax japonicus* unterscheiden sie sich durch ihre Grösse, sie sind schlanker und nicht so lang. Ein Exemplar unterscheidet sich von den anderen dadurch, dass die Säcke gekrümmt sind. (Siehe Figur 8c).

Fundstelle: *China*. Tsingtau. 1901. Ex. Museo Berolinensi No. 4422, ZIMMERMANN coll.

### 11. Rindengalle.

Im Herbarium Generale des hiesigen Gartens befindet sich ein starker Zweig dieser *Styrax*-Species mit zwei grossen Gallen.

Diese sitzen am Ende von kurzen aber starken Stielen, stimmen übrigens ganz mit den Rindengallen an *Styrax benzoin* überein, welche unten No. 5 beschrieben worden sind. Nur sind alle Teile viel stärker. Die Säcke

<sup>1)</sup> S. H. KOORDERS en TH. VALETON, Bijdrage 7 tot de Kennis der Boomsorten op Java. Mededeelingen van 's Lands Plantentuin No. XLII, Batavia 1900 S. 133.

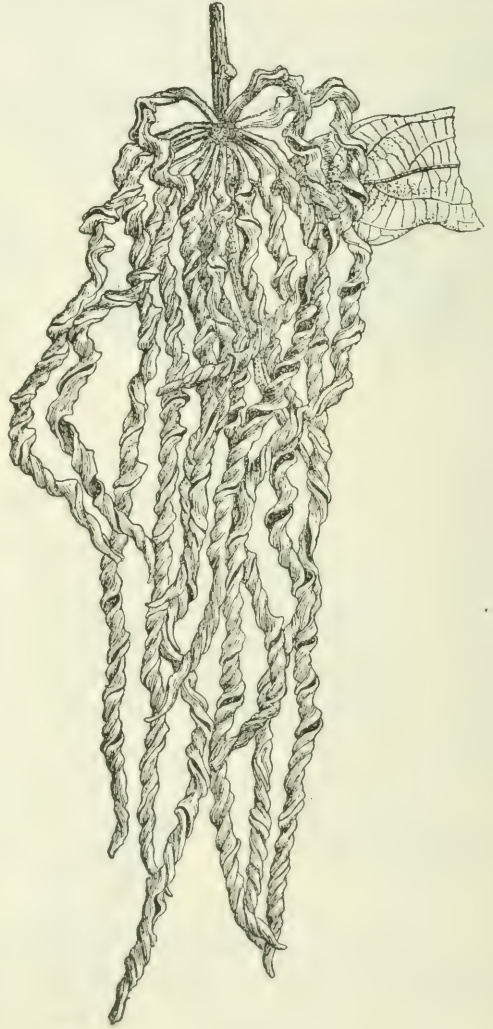
sind ungefähr 5 mM. dick und 6—9 cM. lang, sichelförmig gekrümmt und auch um eine kreisrunde Stelle herum angewachsen. Ausserdem ist ihre Oberfläche ganz dicht braun behaart.

Fundstelle: Assam, Magarata. Dr. PRAIN'S Sammler Juni 1898. (Ohne no).

### V. *Styrax sumatranus* J. J. S.

#### 12. *Rindengalle*.

Diese Galle ist eine der merkwürdigsten, welche ich gesehen habe. Sie sind schon in Kürze von Dr. J. J. SMITH <sup>1)</sup> besprochen worden, welcher die *Styrax*-Art, woran diese Galle vorkommt, eine neue species: *St. sumatranus*, beschrieben hat. Er nennt die Galle aber eine Blütengalle und vergleicht sie dann mit den Blumengallen an *Styrax benzoin*. Eine Blumengalle liegt aber in Wirklichkeit nicht vor. Es ist eine Rindengalle, welche freilich wohl an den Blütenständen, aber auch an anderen Stengeln entstehen kann, wie das in der Figur 9 zu sehen ist. Am meisten findet man sie in der Nähe einer Achselknospe und gewöhnlich unterhalb des Blattfusses. Sie bestehen aus radiär um eine kreisrunde Stelle stehenden langen Tuben, welche aber meistens nach einer Seite gewachsen sind. Sie können aber auch nach verschiedenen Seiten ausstrahlen. Das merkwürdige ist aber, dass alle Tuben über ihre ganze Länge spiralenförmig gedreht sind, sodass eine Art Schraube entsteht. Siehe Figur 9 und 10. Die Aussenseite der Schraube ist dann zu gleicher Zeit die Stelle, wo die Gallenöffnung, welche von der Basis bis zur Spitze verläuft, liegt. Die Galle scheint sehr häufig zu sein.



Figur 9. Rindengalle (N. 11.) an *Styrax sumatranus* J. J. S.  $\times \frac{2}{3}$

<sup>1)</sup> J. J. SMITH. Een nieuwe soort van het geslacht *Styrax* L. *Tectona*. Deel X, 1917, S. 204—206.

Man findet kleinere, welche aus ungefähr 10 Einzelgallen bestehen, aber auch solche, welche aus beinahe zwanzig, zirka 20 c.M. langen Tuben bestehen, welche ganz dichte Büschel bilden.

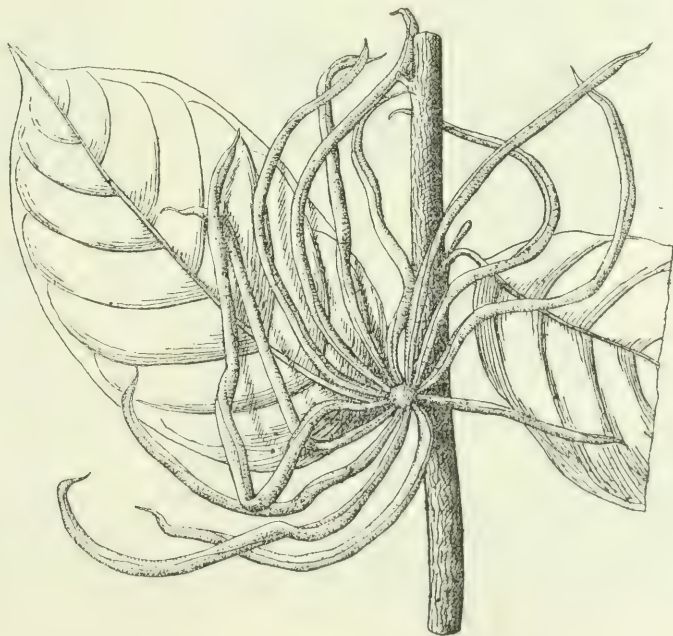
Erst dachte ich, dasz sich die Gallen beim Trocknen spiralenförmig gedreht hatten, aber von Herrn THEUNISSEN erhielt ich auch Alcoholmaterial, dasz vollkommen so aussieht wie die getrockneten Specima.

Es ist natürlich möglich, dasz diese Galle das erwachsene Stadium der folgenden ist. Aber nur Untersuchungen am Ort und Stelle würden es möglich machen, dies sicher zu stellen. Kleine und wahrscheinlich junge getrocknete Gallen waren ebenfalls gedreht.

Fundstelle: *Sumatra*. Oberhalb Baros, Dolok, Oeloeanisches Grenzgebirge, Juni 1915. A. V. THEUNISSEN coll. ; idem Juli 1916 Talangebirge, Padangsche Bovenlanden, pl. 1450 M, 29, October 1918, H. A. BÜNNEMEYER coll. No. 5307; Tapanoeli, 23. November 1918, A. V. THEUNISSEN coll. No. 3.

### 13, *Rindengalle*.

An dieser *Styrax*-Art fanden wir unter Material, das Herr THEUNISSEN gesammelt hat, ausser der spiralgig ge-



Figur 10. Eine Einzelgalle (N. 11.) an *Styrax sumatranus*.  
×  $\frac{2}{3}$ .

Figur 11. Erwachsene Galle (N. 12) an *Styrax sumatranus* J. J. S. ×  $\frac{2}{3}$

drehten Galle auch solche, welche der Hauptsache nach denselben Bau zeigen wie die dritte Galle an St. benzoin und auch die vorige Galle. Die Gallen bestehen aus einer kreisrunden zentralen Stelle, welche unmittelbar an der Rinde des Zweiges, besonders des Blattstieles befestigt ist. An dieser Stelle sind dann lange Tuben herumgestellt, wie das in Figur 11 gut zu sehen ist. Die Tuben sind etwas gebogen, stehen aber nach allen Seiten ab und haben eine Öffnung über ihrer ganzen Länge. Am Ende sind sie zierlich scharf zugespitzt.

In Figur 12 ist eine ganz junge Galle abgebildet. Diese ist an der Oberseite des Blattstieles nahe der Stammbasis entwickelt und besteht noch aus ganz kurzen, etwas nach oben und innen gekrümmten Röhren.

Fundstelle: *Sumatra* W. K. Pardamon bei Baros, 10. Mai 1915. A. V. THEUNISSEN coll. No. 1.

#### 14. Endknospengalle.

An den Spitzen, meistens von Kurztrieben fand ich Gallen, welche in der Hauptsache den Gallen an *Styrax japonicus* (Siehe No. 6) ähneln. Sie sind aber nicht aus so vielen einzelnen Gallen zusammengesetzt wie diese. Siehe Figur 13. Meistens sind es vier bis acht Einzelgallen, welche mit einander einen ganzen Knäuel bilden. Die Gallen selbst sind breite, kurz- oder langgestielte Säcke, welche aus Blättern entstanden sind. Sie sind ungefähr 15—20 cM. lang und 10—12 cM. breit, und nicht der Länge nach gespalten. Nur an der Oberseite, befindet sich eine Öffnung, die im Anfang sehr eng ist, später aber beim Reifwerden sich öffnet, wie das in der Figur 13 zu sehen ist. Im Inneren befindet sich eine geräumige Kammer, deren Wand mit einigen stumpfen im Lumen ausragenden Wucherungen versehen ist.



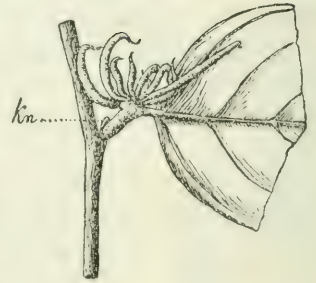
Figur 13. Endknospengalle an *Styrax sumatranus* J. J. S.  $\times \frac{2}{3}$ .

Fundstelle: *Sumatra*. W. K. Sibolga-Taroetoeng, 23. November 1918. A. V. THEUNISSEN coll. No. 2.

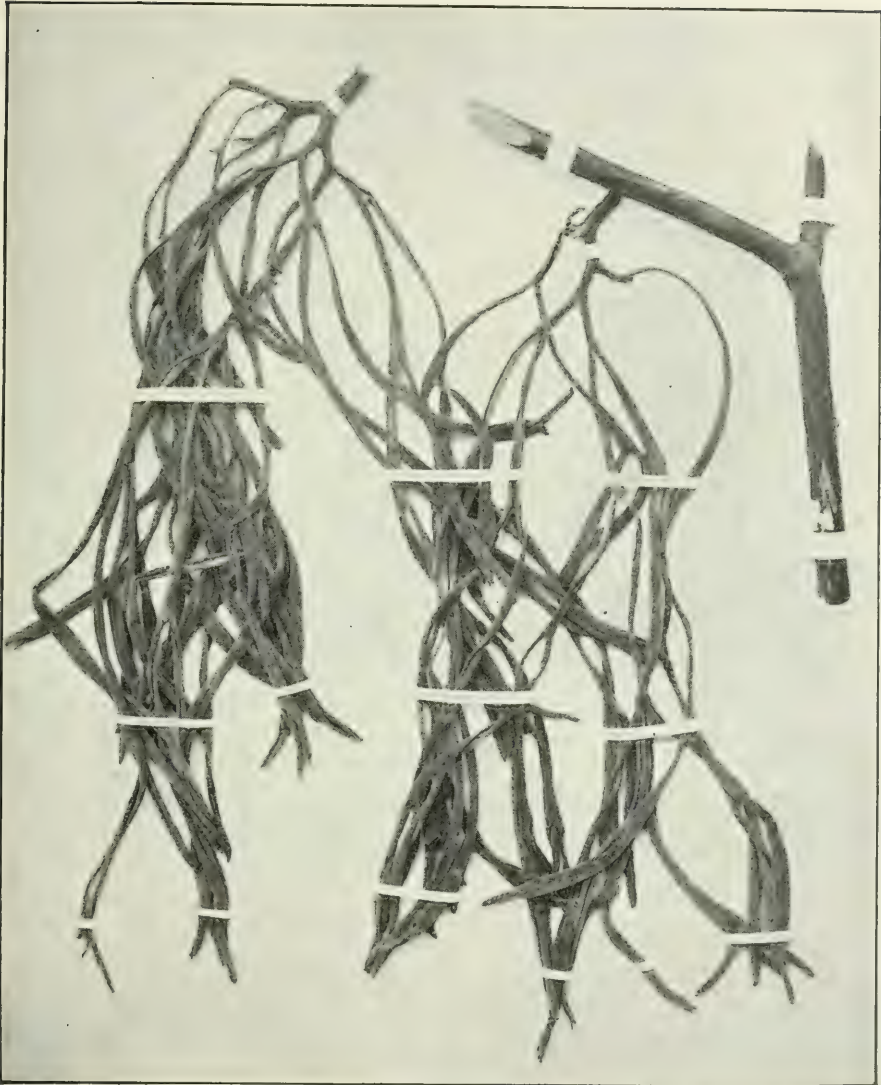
## VI. *Styrax*-spec.

#### 15. Rindengalle.

Diese Galle macht den Eindruck eines Hirschhornfarnes. Sie ist die grösste dieser merkwürdigen Gallenserie und entsteht an beliebigen Stellen der Rinde der Zweige. Der Stiel ist kurz aber kräftig, ungefähr 6—10 mM.



Figur 12. Junge Galle (N. 12) an *Styrax sumatranus* J. J. S.  $\times \frac{2}{3}$ .



Rindengalle von *Styrax* spec. N. 15.





dick, verzweigt sich dichotomisch, und die Seitenzweige auch wieder dichotomisch. Dabei fanden wir unter dem Material zwei Typen.

I. Die Gallen sind nur aus einigen dichotomischen Verzweigungen zusammengesetzt, die Verzweigungen sind dabei sehr lang und hängen in Büscheln nach unten. Die Endabschnitte sind auch sehr lang und etwas zugespitzt. Die ganze Galle kann ungefähr 35 c. M. lang werden. Eine Abbildung davon findet man auf Tafel 1, auf ein Drittel der natürliche Grösse verkleinert.

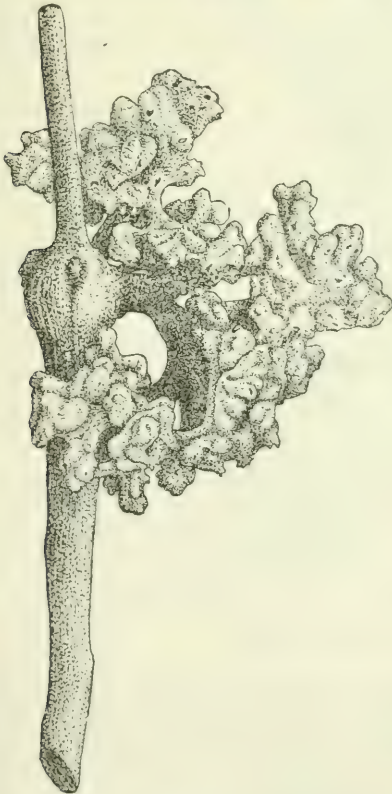
II. Die Verzweigung geht viel weiter und die Äste bleiben dabei viel kürzer. Dadurch wird ein nach allen Seiten abstehendes Büschel gebildet. Die Endverzweigungen sind kurz und gabelförmig. Die ganze Galle ist ungefähr 30 cM. lang und 25 cM. breit.

Äusserst merkwürdig ist es, dass die Gallen vom Anfang bis zur Spitze eine Längsspalte zeigen, welche also alle Verästelungen folgt.

Im Innern leben Tausende und Abertausende von Tieren in allen Entwicklungsstadien.

Fundstelle: *Typus I: Sumatra O. K.* Unterhalb Bandarbaroe bei Sibolangit im sekundärwald  $\pm$  800 M. 18. Juni 1917. J. A. LÖRZING coll. No. 5147.

*Typus II: Sumatra. O. K.* Oberhalb Bandarbaroe bei Sibolangit im Urwald  $\pm$  1100 M, 16. Juni 1918. J. A. LÖRZING coll. No. 5760.



Figur 14. Stengelgalle an *Stryax* spec.  $\times \frac{2}{3}$ .

#### 16. Rindengalle.

Eine korallenförmige Galle wurde von Herrn LÖRZING entdeckt. Diese ist kurzgestielt und bildet ausser einigen Hauptverzweigungen viele kurze Zweige und Ausbuchtungen, die ganz dicht gedrängt bei einander stehen. Die ganze Missbildung macht also den Eindruck eines Korallenstockes. Die Röhren sind geschlossen und nur an den stumpfen Endverzweigungen befinden sich die runden Öffnungen. Sie ist mit keiner der von mir gesehenen Gallenbildungen an *Stryax* zu vergleichen; wohl hat sie einige Ähnlichkeit mit der Galle an *Stryax obassia*, welche von MATSUMURA beschrieben worden ist. (Siehe No. 8). Wenigstens die Endverzweigungen der tubenförmigen Auswüchse, welche in beiden Fällen die Öffnungen zeigen, haben beide Gallen gemein.

Die ganze Galle ist aus der Rinde entwickelt, der Stiel ist ungefähr 6 mM. breit. Ich besitze leider nur ein unbeschädigtes Exemplar dieser merkwürdigen Galle, und zwei Bruchstücke. Bei dem abgebildeten Exemplar Figur 14 war der Stengel oberhalb der Anheftungsstelle der Galle abgestorben.

Fundstelle: Im Urwald. *Sumatra O. K.* Bandarbaroe, Medan  $\pm$  800 M, 13/X. 1917. J. A. LÖRZING coll. No. 5348.

### 17. *Blumengalle.*

Diese *Styrax*-Art ist wahrscheinlich dieselbe, an der die beiden Gallen No. 15 und No. 16 vorkommen. Sehr reichliches Material befindet sich



Figur 15. Blumengalle an *Styrax* spec.  $\times \frac{2}{3}$ .

sowohl in meiner eignen Sammlung wie in der des Herbarium Generale des botanischen Gartens. Diese Gallenform unterscheidet sich sofort von allen andern durch ihre dünne zylindrische Gestalt und dadurch, dass sie der Länge nach ein ganz geschlossenes Rohr bildet.

An der Basis und an der Spitze ist sie etwas verschmälert und an diesem Ende befindet sich eine kleine Öffnung. Sie sind 5–9 cm. lang

und 2–3 mM. breit, dabei gewöhnlich etwas gekrümmt. Die Oberfläche hat einige schwer sichtbare Längstreifen und ist dicht behaart. Die Haare ähneln ganz denen, welche den Kelch bedecken, und die Basis oder der Stiel der Galle ist ganz so braunrot behaart wie auch der normale Blumenstiel.

Da keine jungen Stadien vorliegen, ist es nicht möglich, sie ganz sicher morphologisch zu deuten, aber aller Wahrscheinlichkeit nach haben wir Blumengallen vor uns. Man findet sie alle in den Achseln der kleinen Vorblätter, wie das in der beigefügten Figur 15 deutlich zu sehen ist. Nur in einem Fall sass sowohl eine Blume wie eine Galle an einer solchen Stelle (Figur 15 bei a); aber es kommt auch vor, dass mehr als eine Blume an einer Stelle sich befindet.

Die ganze Galle ist ein modifizierter Kelch und daraus erklärt es sich, dass die Galle ein Rohr bildet und dass sie nicht wie die meisten andern der Länge nach geöffnet ist. Der Blumenstiel ist dabei sehr kurz geblieben, kürzer als ein normaler Blumenstiel. Auf dem Boden am Anfang der Galle waren noch einige Auswüchse zu sehen; ob dies aber wirklich Rudimente der übrigen Blumenorgane sind, liess sich an dem getrockneten Material leider nicht mehr feststellen, jedenfalls muss die Infektion sehr früh stattgefunden haben. Im Inneren fand ich die Reste von Blattläusen. Herr LÖRZING, welcher die Galle entdeckt hat, schrieb auf seiner Sammeletikette, dass die Röhre von kleinen blattlausähnlichen Tieren bewohnt waren, welche auf der blossen Haut ein Jucken verursachten, was auch bei anderen *Styrax*-aphiden beobachtet worden ist, auch von mir selbst.

Fundstelle: Im Sekundärwald bei Sibolangit, Medan, *Sumatra Ost-Küste*, ± 350 M, 18. April 1918. J. A. LÖRZING coll. N. 5641.

### 18. *Rindengalle.*

An einem getrockneten Zweig dieser unbestimmten St.-Art fand ich eine der merkwürdigsten Gallen, Leider war nur ein Exemplar vorhanden und dieses ist, glaube ich, nicht ganz unverletzt.



Figur 16. Stengelgalle an *Styrax* spec.  $\times \frac{2}{3}$ .

Obschon der Sammler auf der Etikette geschrieben hat „nur Früchte und Gallen“, war nicht mehr als dieses einzige Exemplar zu finden.

Die Galle ist nur an der Oberseite geöffnet und bildet ein trichterförmiges Gebilde (Siehe Figur 16), das mit ziemlich breiter Basis mit einem Blütenzweig verbunden ist. Es ist sicherlich eine Rindengalle. Nur der Gipfel des Blütenzweig-Astes ist übriggeblieben, wenn auch verkümmert. An der Oberseite ist die Galle weit offen und die

Ränder sind etwas umgeschlagen; doch mag es sich herausstellen, dass dieses nur durch das Schrumpfen beim Trocknen verursacht worden ist. Die ganze Oberfläche ist runzelig und mit in der Länge verlaufenden, untiefen Falten versehen, die Epidermis ausserdem mit zerstreuten braunen Sternhaaren überdeckt. Im Innern fand ich eine Anzahl vertrockneter Läuse

Fundstelle: *Sumatra*, Galoengi, Karolanden.  $\pm$  400 M. ü. M. No. 473  
15. Juli 1919. J. A. LÖRZING coll.

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## NEW OR NOTEWORTHY MALAYAN ARACEAE 2.

BY

Capt. C. R. W. K. VAN ALDERWERELT VAN ROSENBURGH.

With plates 2 and 3.

Wherever the contrary has not been mentioned the following diagnoses were made after dried material and the descriptions of the colours were taken from the field notes of the collectors.

**Aglaodorum Griffithii**, SCHOTT, Gen. Aroid., tab. 58; ENGL., in Pflzrch, LXIV (23 *Dc*), Arac.-Philod.-Anub., 34, fig. 16.

ENGLER says in the diagnosis of the genus *Aglaodorum* given in Pflanzenreich „staminodia prismatica 1—3 ovaria circumdantia”. SCHOTT too speaks of „neutri prismatici” and draws them in his table mentioned above whilst they are not represented in ENGLER’s fig. 16.

Since, when making the artificial key to the determination of the aroideous genera, occurring in my previous paper on some New or Noteworthy Malayan Araceae, I had not yet set eyes on a specimen of the species, I took the presence of staminodes as a generic character from the said authors.

Now I have had the opportunity to examine a living specimen cultivated in the Buitenzorg Gardens, flowering and fruiting November 1920; this specimen agrees exactly with ENGLER’s fig. 16 and has *no* staminodes encircling the ovaries but it has the lower stamens sterile, which, however, are in aspect not different from the fertile ones when seen from above.

ENGLER says nothing about the colours. The specimen mentioned had the leaves green, the peduncle green in the upper part, yellowish-green towards the base, the spathe green, the stalk of the spadix ivory-white, glossy, the ovaries white, glossy, with a bright-yellow, glossy stigma, the masculine inflorescence ivory-white, opaque.

**Amorphophallus campanulatus** (RXB.), BL., in DEC., Descr. Herb. Tim., in Ann. Mus. Hist. Par., III, 366; BL., in Rumph., I, 139, tab. 32, 33; ENGL., in Pflzrch, XLVIII (IV, 23 *C*), 76; *A. virosus*, N. E. BR., in Bot. Mag., tab. 6978; *A. rex*, PRAIN, HK. F., Flor. Br. I., VI, 514; ENGL., l. c., 75, fig. 27; *Arum campanulatum*, RXB., HK., in Bot. Mag., tab. 2812.

*A. campanulatus* BL. and *A. rex* PRAIN are running into each other by intermediates so gradually that they cannot be maintained as two

distinct species and should be better treated as forms of the same species. The typical *A. campanulatus* BL. is the form with commonly the smaller dimensions and a subglobose appendix, whilst *A. rex* PRAIN commonly represents the form with the larger dimensions and a conoid appendix. Both forms have the feminine inflorescence mostly about  $1-1\frac{1}{2} \times$  as long as the masculine.

A specimen from *Java (Kendal)*, cultivated in the Buitenzorg Gardens, flowering August 1920, resembled very much HOOKER's plate of *Arum campanulatum* RXB. mentioned above (with the feminine inflorescence about  $4 \times$  as long as the masculine) but was distinguished by its strongly deviating proportions: Spadix 50 cm. long; feminine inflorescence at least  $8 \times$  as long as the masculine, cylindrical, 25 cm long, 10 cm. thick; masculine inflorescence proportionally very short- and thick-obconoid, here and there even nearly horizontally spreading, at best 3 cm. long, the base as thick as the feminine inflorescence, the apex 20 cm. thick; appendix oblate in general aspect, 25 cm. long including the masculine inflorescence, the thickness varying from 30 to 35 cm.; for the rest (colours, shape of spathe, etc.) as commonly.

**Amorphophallus Decus silvae**, BACKER & V. A. V. R., this Bull., 1<sup>5</sup>, 1920, 369.

The plates belonging to this species, which were not yet ready when my previous paper on Malayan Araceae was published, are accompanying this number. (Plates 2 and 3).

The native on one of the plates is the discoverer of the species.

**Amorphophallus Lörzingii**, V. A. V. R., this Bull., 1<sup>5</sup>, 1920, 367.

This species seems to be rather variable in dimensions and colour and shape of the markings. A specimen gathered by the same collector at the same locality (No. 5702, 27 May 1918) is, according to the field notes, distinguished from my previous diagnosis as follows: Petiole to 2 m. high. Peduncle pale-rosy, upward pale-brown with paler spots. Spathe: tube inside dark-flesh-coloured, outside milk-white, longitudinally pale-red-striated in the upper part; throat inside milk-white, outside pale-green; limb pale-green, outside horizontally pale-red-striated near the margin. Spadix: ovaries dark-flesh-coloured, with a milk-white stigma; appendix laterally compressed,  $\frac{1}{4}$  as thick and  $\frac{1}{2}$  as broad as long, milk-white.

**Amorphophallus obovoideus**, V. A. V. R.

Foliorum petiolus . . . ; lamina . . . . Cataphylla 2—3, intimum longissimum, lineari-lanceolatum,  $\pm 22\frac{1}{2}$  cm. longum. Pedunculus 70 — 75 cm. longus, relative gracilis, pallide caeruleo-viridis. maculis magnis, oblongis, perpallide viridibus, in media parte caeruleo-punctatis, superioribus saepe confluentibus et epunctatis, in spatham continuatis ornatus. Spatha e tubo

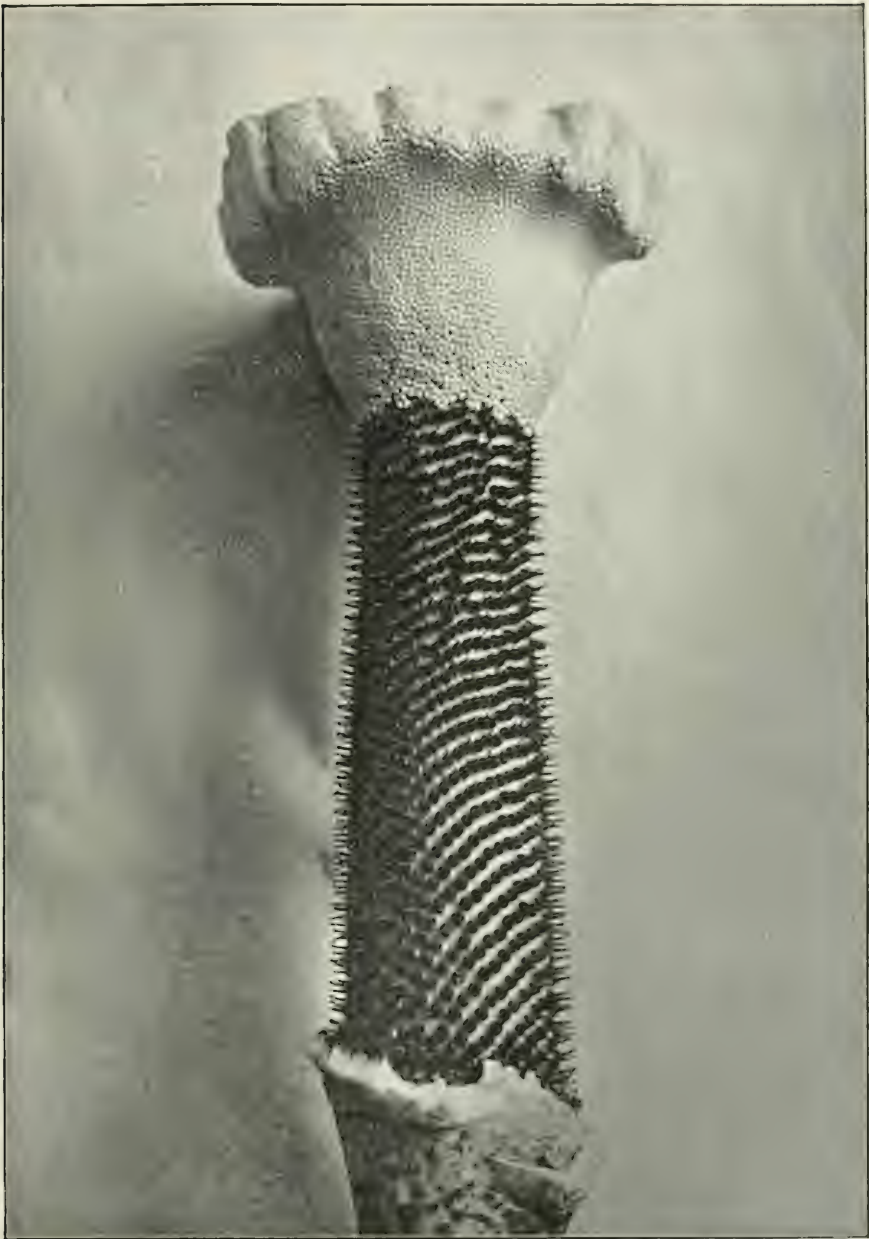


*Amorphophallus Decus silvae* Backer & v. A. v. R.  
(Inflorescentia evoluta).

±  $\frac{1}{16}$ — $\frac{1}{17}$ .







Amorphophallus Decus silvae Backer & v. A. v. R.  
(Spadicis pars florifera).  
 $\pm \frac{2}{5}$ .



cylindraceo sensim subcymbiformis, 16 — 19 cm. longa, apice breviter acuminata et leviter recurvata, extus lactea ad pallide viridis, intus perpallida; tubus  $2\frac{1}{2}$  cm. longus et  $2\frac{1}{2}$  cm. diam.; lamina explanata 8 cm. lata. Spadix  $\pm 12\frac{1}{2}$  cm. longus; inflorescentia feminea cylindracea,  $1\frac{3}{4}$  cm. longa,  $1\frac{1}{2}$  cm. crassa; ovaria perpallide viridia, 1-ovulata, in sicco prismatica, apice truncata, 4 — 6-angulosa; stylus subnullus; stigma capitatum, pallide brunneum; inflorescentia mascula suboblongo-cylindracea, 3 cm. longa, media parte  $1\frac{3}{4}$  cm. crassa, basi et apice paullo attenuata,  $1\frac{1}{2}$  cm. crassa, pallide brunnea; appendix obovoidea, 8 cm. longa, 3 cm. crassa, basi attenuata, apice semihemisphaerica, pallide flavida, caeruleo-viridi-afflata.

The dimensions are taken from the field note; the dried material has the dimensions of the inflorescences much smaller.

A leaf of a probably young tuber, gathered at the same locality and belonging probably to this species, is distinguished as follows: Petiole about 30 cm. long, slender, darker than the peduncle; lamina 3-partite; primary branches about 25 cm long, forked; pinnae (leaflets) 0 — 2 on each side below the fork-branches, lanceolate,  $7 - 17 \times 3\frac{1}{2} - 5\frac{1}{2}$  cm., the lowest sessile, the higher adnate with a cuneate base, the apex rather suddenly long-subcaudate-acuminate; highest leaflets binate or subbinate.

*Sumatra (Deli, Sibolangit, J. A. LÖRZING No. 5771, in moist primeval forest, alt. 500 m., 25 June 1918).*

### **Amorphophallus Cobra, v. A. v. R.**

Foliorum petiolus . . . ; lamina . . . . Cataphylla . . . , intimum longissimum, lineari-lanceolatum, usque  $27\frac{1}{2}$  cm. longum. Pedunculus  $\pm 70$  cm. longus, basi 2 cm. crassus, apicem versus attenuatus, infra apicem paullo incrassatum 1 cm. crassus, pallide brunneus, maculis paucis, magnis, rotundatis vel oblongis ornatus et obscurius brunneo-punctatus, a basi apicem versus sensim pallidior et viridescenti-afflatus. Spatha e basi convoluto-cylindracea navicularis,  $\pm 20$  cm. longa, medio  $\pm 8\frac{1}{2}$  cm. lata, apice super spadiceum incurva, extus pallide rubro-brunnea, maculis parvis, copiosis, pallide flavidis ornata, intus multo pallidior. Spadix  $\pm 13\frac{1}{2}$  cm. longus; inflorescentia feminea breviter cylindraceo-obconoidaea,  $1\frac{1}{2}$  cm. longa, basi  $1\frac{1}{2}$  cm., apice  $1\frac{3}{4}$  cm. crassa; ovaria breviter oblonga, subprismatica, pallide viridia, apice in stylum brevem abrupte attenuata, 1-ovulata; stigma crasse capitatum, leviter sulcatum; inflorescentia mascula cylindraceo-obovoidea,  $2\frac{1}{4}$  cm. longa, basi et apice truncata,  $1\frac{3}{4}$  cm. crassa, infra apicem 2 cm. crassa, pallide brunnescens; appendix elongato-ellipsoidea,  $\pm 10$  cm. longa, medio  $2\frac{1}{2}$  cm. crassa, lactea vel pallide flavida, apice rotundata.

The material is accompanied by 2 leaves which are so absolutely different that they cannot belong to one and the same species. The whole flower imitates deceptively the dilated neck and head of an erected Cobra or hooded snake (*Naja tripudians*).

*Sumatra (Deli. Sibolangit, J. A. LÖRZING No. 5522, primeval forest, alt. 400 m., 17 February 1918).*

***Amorphophallus incurvatus*, V. A. V. R.**

Foliorum petiolus . . . . . ; lamina . . . . . Cataphylla . . . . . Pedunculus  $\pm$  75 cm. longus, pro ratione gracilis, viridis, pallide viridi-maculatus. Spatha e basi convoluto-obconoidea navicularis, postice excurvata, apicem versus super spadicem falcato-incurvata, explanata ovata,  $\pm$  11 cm. longa, supra basin truncato-rotundatam  $4\frac{1}{2}$  cm. lata, apice acuta, extus lurido-violacea; pallide viridi-maculata. Spadix  $\pm$  7 cm. longus, parte basali brunnescens, parte apicali pallide griseus, subalbus; inflorescentia feminea cylindracea,  $1\frac{3}{4}$  cm. longa. in sicco  $\pm$  4 mm. crassa; ovaria brevia subprismatica, 4-angulosa, apice truncata, 1-ovulata; stylus anguste cylindraceus, quam ovarium paullo brevior, basi vix conoideo-incrassatus; stigma capitatum, parvum, leviter sulcatum; inflorescentia mascula subcylindracea, fere  $2\frac{1}{4}$  cm. longa, in sicco supra basin  $\pm$  4 mm. crassa, apice et basi paullo contracta; appendix subcylindracea,  $\pm$  3 cm. longa, in sicco  $\pm$  4 mm. crassa, basi paullo contracta, apice rotundata.

*Sumatra (Mt. Koerintji, in forest, alt. 1770 m., H. A. B. BÜNNEMEIJER No. 8835, 15 March 1920).*

***Amorphophallus variabilis*, BL, in Rumph., I, 146, tab. 35, 37 H; V. A. V. R., this Bull., I<sup>5</sup>, 1920, 367.**

This species has the petiole, peduncle and spathe so exceedingly variable in colour and shape of the markings, that it is practically impossible to define it in a diagnosis. Sometimes the colour is entirely equally pale-green without a single paler or darker point or spot, but in most cases there are a few scattered to numerous crowded whitish, purplish, dark- or olive-green to reddish-black points and (or) spots, and in still other cases the colour is equally olive-green to purple with some paler or (and) darker points or spots.

***Arisaema ramulosum*, V. A. V. R.**

*Trisecta*. — Tuber parvum, 1—2-foliatum. Foliorum petiolus 20—40 vel saepius 40—60 cm. longus, usque ad medium vel paullo longius vaginatus, cum vagina viridis vel subviridi-griseus, plus minusve conspicue obscure marmoratus, maculis obscuris rubro-puncticulatis; vagina apicem versus sensim arcuata vel apice obtuse rotundata; lamina 3-foliolata; foliola supra obscure viridia, nitentia, subtus pallidiora, nitidula, omnia acutiuscule vel obtusiuscule acuminata, breviuscule, graciliter apiculata; foliolum intermedium petiolulatum, late rhomboideo-ellipticum,  $8-20 \times 4\frac{1}{2}$ —11 cm., aequilaterum, basi cuneatum vel rotundato-cuneatum; foliola lateralia sessilia vel breviter petiolulata, quam foliolum intermedium paullo minora ad paullo majora, plus minusve inaequilatera, postice quam antice paullo latiora, basi antica cuneata, basi postica rotundato-cuneata vel rotundata. Pedunculus quam petiolus brevior,  $17\frac{1}{2}$ —30 vel saepius 30—40 cm. longus, pallide viridulus, sursum

albidus, ceterum longitudinaliter atro-caeruleo-striatus, inter strias maculatus. Spatha arte expansa 6—15 cm. longa; tubus elongatus, lateraliter compressus,  $\pm$  dimidium longitudinis spathae metiens vel paullo longior, circiter 1 cm. amplus, marginibus anguste tegentibus, imo attenuatus, fauce limbo  $\pm$  horizontaliter sed non late recurvo, intus opaco-albus, extus albus vel pallide caeruleo-griseus, apicem versus cum marginibus recurvis viridulus vel leviter pallide flavido-viridis, ceterum longitudinaliter graciliter atro-caeruleo-striatus, inter strias maculatus; lamina oblongo-triangularis,  $\pm$  horizontaliter incurvata, acuta, cuspidata, viridis, conspicue violaceo-brunneo-afflata, extus subopaca, intus splendens, fasciis atris (contra lucem conspectis atro-violaceo-rubris), apicem versus angustatis, basin versus dilatatis, basi fascia transversa, similiter colorata unitis late marginata. Spadix raro 2-, plerumque 1-sexualis, quam spathae tubus paullo longior, pallide viridis, atro-purpureo-violaceo-maculatus, appendice atro-caeruleo-striata et maculata, apicem versus nitenti-atro-caerulea: inflorescentia feminea quam dimidium longitudinis tubi spathae paullo brevior, conoideo-cylindracea, dense florifera; ovaria ovoidea, viridia, apice breviter conoideo-attenuata; stigma sessile, parvum, rotundum, applanatum, latitudinem apicis ovarii aequans; inflorescentia mascula laxe florifera, floribus 2—3-andris; antherae atro-purpureae; pollen pallide glaucescens; appendix subuliformis, parte inferiore organis neutris munita, infra apicem rectum vel leviter proclinalatum organis neutris ramulosa, ceterum nuda; organa neutra plus minusve arcuato-ascendentia, partim recta, partim curvata, partim subsigmoidea; organa neutra inferiora gracilia, breviter filiformia, apice nitenti-atro-caerulea, spadice femineae numerosa (usque  $\pm$  36), usque 5 mm. longa, spadice masculae pauca (0—6), breviora, usque 2 mm. longa; organa neutra superiora crassiuscula, 1—15, longissima  $\pm$  5 mm. longa, brevissima interdum rudimentaria, vix conspicua et specie deficientia.

*Java (Preanger Regencies, Pengalengan, in forest, alt. 1400 m., J. J. SMITH No. 775, October 1921).*

**Arisaema barbatum**, BUCH., in LECOMTE, Not. Syst., I, 366; A. laminatum, BL., auctt. plur.

The plants occurring in the Buitenzorg Herbarium, referrible to this species, do not agree entirely with BUCHET's diagnosis and are distinguished as follows:

Leaves with the petiole to 40 cm. long, the sheath rather broadly rounded at the apex, the lamina with the segments sessile or more or less distinctly petiolulate, elliptical-oblong to lanceolate, to 26 $\times$ 13 cm., the terminal (medial) one equal-sided, cuneate at the base, the lateral ones unequal-sided, broadest on the outer (lower) side, with the inner base cuneate, the outer base broadly rotundate-cuneate to rotundate. Spadix 6—10 cm. long. Male spadix with the inflorescence to 3 cm. long, loosely floriferous, the flowers 2—3-androus; appendix subuliform, hardly exceeding the tube of the spathe in the smaller, but distinctly so in the larger specimens, the lower

part provided with 0—10 or even more loosely placed, slender, shortly subuliform neuters  $\pm 2—5$  mm. long, the upper part divided into mostly many filiform-subulate, pale to dark, often flexuose or curved branches (neuters) 1—3 cm. long, the medial part naked (nudate) or provided with more or less numerous laxly placed neuters passing gradually into those of the lower part and those of the upper part. Feminine spadix with the inflorescence densely floriferous, the ovaries globose-ovoid, whether or not more or less depressed, the style shortly cylindrical, less than half as long as the ovary, the stigma small, flattish; appendix like that of the male spadix

***Epipremnopsis media*** (ZOLL & MORR), ENGL, Pflzrch, XXXVII (IV, 23 B), Addit. Arac.-Pothoid., 1, p. p., fig. 19a; *Scindapsus medius*, ZOLL. & MORR., Syst. Verz., No. 82.

Specimens gathered in *Java* are distinguished as follows: Internodes of the ultimate branches short, sometimes hardly more than 1 cm. long. Petiole of the young plant slender, to about 10 cm. long, of the adult plant to 35 cm. long, relatively shortly and narrowly sheathed at the base, the inner side gradually grooved towards the lamina, the sheath caducous, the knee short, to  $\pm 2$  cm long; lamina more or less coriaceous, cordate-ovate in outline, of the young plant small and entire, to  $12 \times 6$  cm., of the adult plant large, to  $\pm 40 \times 30$  cm., provided very commonly near the costa with suboblong to rotundate-triangular holes 3—30 mm. long, the margin varying from irregularly lobed to incised nearly to the costa; terminal lobe subrhomboidal-cuneate; lateral lobes 2—5 on a side, short-oblong to long-linear, 3—12 cm. broad, with the apex narrowed and shortly acuminate or broad and obliquely truncate with the antical corner bluntish to falcate-acuminate, the postical corner blunt to broadly rounded; lowest lateral lobes narrowly falcate, or broadly semiovate with the upper side rather straight and the lower side rounded; primary veins 1—3 in each lobe, distinct, prominent beneath; secondary and tertiary veins reticulate, forming a fine or slender submarginal collective-vein. Cataphylla long-triangular-lanceolate, soon drying up. Peduncle slender,  $\pm 10$  cm. long, pale-green. Spathe when young between boat- and spindle-shaped, gaping, 4—8 cm. long, to 3 cm. diam., acutely acuminate, pale-yellow or the inner side very pale-greenish-yellow and the outer side pale yellow-green, afterwards quite open, ovate, reflexed, drying up, deciduous. Spadix cylindrical, flowering 3—6 cm. long,  $\frac{3}{4}$ — $1\frac{1}{4}$  cm. diam., slightly narrowed at the base and the bluntly rounded apex, pale-yellow or grey-yellow, on a stalk 1— $1\frac{1}{2}$  cm. long; ovaries obpyramidal, the apex truncate, 4—6-angular, 4—6 mm. thick; stigma roundish to shortly linear, not or slightly elevated. dirty-white, soon becoming fuscous.

In the cataphylla of the peduncle I have found more or less numerous spicular (acicular) cells but in the spathe and ovaries none.

**Epipremnum elegans**, ENGL., in Pflzrch, XXXVII (IV, 23 B), Arac.-Monster., 65. fig. 27.

BEGUIN's No. 939 from *Ternate Island* (*Kota Baroc*, in a garden, alt. 3 m., flowering and fruiting 13 October 1920), which may be referred to this species, is distinguished as follows: Stem to 40 m. high scandent. Leaves with the lamina to  $90 \times 55$  cm., with the laciniae more approximate. Ovaries with the stigma shortly linear: filaments very shortly and broadly triangular at the apex. (Forma *ternatensis*).

**Holochlamys ornata**, V. A. V. R.

Herba majuscula, usque 40 cm. alta, caudice brevissimo, foliis nutantibus. Foliorum petiolus  $\pm 12-22$  cm. longus, inferne 3-13 cm. longe vaginatus, ceterum subteres, antice anguste applanatus (transversaliter sectus truncato-ovatus), deorsum sordide roseus vel olivaceus et minute, pallide maculatus, sursum pallide viridis vel sordide albidus, obscurius maculatus maculis longitudinaliter ovalibus vel lineari-ovalibus, sparsis vel confluentibus,  $\pm$  olivaceis, in medio puncto sordide albido munitis; vagina a basi latiuscula apicem versus sensim angustata, sordide albida vel pallide rosea, extus maculis minutis, pallidis vel obscurioribus, flavidis vel brunneis ornata, postremo exsiccata, dilacerata; geniculum  $\pm 1\frac{1}{2}-2$  cm. longum, antice canaliculatum et anguste undulato-2-cristatum, postice teres, perpallide viride, leviter obscurius viridi-punctatum; lamina in vivo coriacea, lineari-lanceolata,  $\pm 27\frac{1}{2}-37\frac{1}{2} \times 3-5$  cm., utrinque subaequaliter acute angustata, basi in cristas geniculi transiens, apice breviter et acute apiculata, margine subundulata, supra obscure viridis, saltem dimidia parte superiore secus costam vitta pallidiore, flavido-viridi, irregulariter flammiformi ornata, subtus pallide viridis; costa supra plana, pallide viridi-flava, subtus prominens, semiteres, albida vel viridescenti-albida; venae primariae 8-10 utrinque, angulo acuto ( $\pm 30^\circ$ ) ascendentes, apicem versus sursum curvatae, basi longe decurrentes,

vena secundaria 1, subaequicrassa vel multo graciliore et venis secundariis tertiariisque pluribus, gracillimis interpositis. Pedunculus  $\pm 3$  cm. longus, demum longior, deorsum albidus, sursum viridis. Spatha relative tenuis, elongato-ovoideo-cylindracea,  $\pm 4$  cm. longa, fere 1 cm. ampla, leviter hians, sordide flavido-albida, acuta, mox marcescens. Spadix sessilis, elongato-ovoideo-cylindraceus,  $\pm 3\frac{1}{2}$  cm. longus et  $\frac{3}{4}$  cm. crassus, perpallide flavidus, apicem rotundatum versus paullo attenuatus; perigonia prismatico-cupuliformia, 2 mm alta, 4-6-angulosa; ovaria prismatico-oblonga ve-  
-obovoidea, 3 mm. alta, 4-angulosa, apice rotundata, dissipamento spurio valde intruso sub-2-locularia, ovulis haud multis, basifixis; stigma depressum, cruciformi-

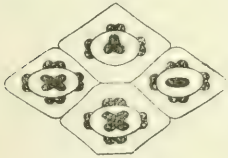


Fig. a,

4-lobatum, hinc inde breviter lineari-oblongum vel 3-lobatum, mox nigrescens. (Fig. a).

The description of this very decorative species is taken from a living plant cultivated in the Buitenzorg Gardens, flowering June to August 1920. *New Guinea* (A. C. DE KOCK No. 95).

**Homalomena cristata**, V. A. V. R.

*Chamaecladon*. — Herba parva,  $\pm 15$  cm. alta, caudiculo  $\pm 2\frac{1}{2}$  cm. longo. Foliorum petiolus  $2\frac{1}{2}$  — 5 cm. longus,  $\frac{1}{3}$  —  $\frac{1}{2}$  parte basali vaginatus, parte superiore cristis pluribus, longitudinalibus, anguste ali-

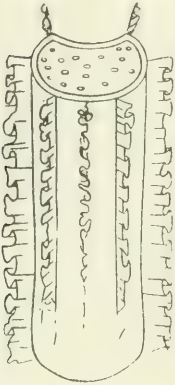


Fig. b.

formibus, conspicue crispato-undulatis munitis (fig. b); lamina subcoriacea, obovato-lanceolata,  $3\frac{1}{2}$  — 8  $\times$   $1\frac{1}{2}$  —  $3\frac{1}{2}$  cm., supra obscure, subtus pallide viridis, dimidia parte superiore latissima, apice subabrupte et breviter acuminata, basi plus minusve anguste rotundato-cuneata; costa subtus basin versus decidue crispato-cristata; venae primariae secundariis subsimiles, plures, venis tertiariis quaternariisque gracilioribus interpositis. Pedunculi graciles,  $1\frac{1}{2}$  — 2 cm. longi. Spatha elongato-vel conoideo-ovata, 1 — 2 cm. longa, 3 — 4 mm. ampla, viridis, acuminata vel subacuta. Spadix quam spatha paullo brevior, usque  $1\frac{3}{4}$  cm.  $\times$  longus; inflorescentia feminea breviter cylindrica, usque  $\frac{1}{2}$  cm. longa et  $\frac{1}{4}$  cm. crassa; ovaria globoso-ovoidea, viridia; stigma parvum, sessile, rotundum; staminodia clavata, albida; inflorescentia mascula quam feminea 2 — 4-plo longior, pallide viridis vel flavida; flores masculi 2 — 3-andri, thecis sub connectivo non absconditis.

The description is taken from dried and living plants. A non-flowering plant, cultivated in the Buitenzorg Gardens, which seems to be a more strongly developed specimen of this, differs in having the dimensions of the leaves twice to thrice as large, with the lamina elliptical-oblong, broadest at the middle, and the base abruptly rotundate-truncate, hardly cordate-emarginate. The crests of the petiole are partly deciduous, leaving the petiole slightly, longitudinally ribbed when they fall.

*Sumatra* (*Pajakombo, Harau-Ravine*, HORST, December 1918; *Ajer-Poetih-Ravine*, alt. 400 m., W. DOCTERS VAN LEEUWEN, Januari 1920).

**Homalomena oblanceolata**, V. A. V. R.

*Chamaecladon*. — Herba parva. Foliorum petiolus quam lamina  $\pm 2\frac{1}{2}$  plo brevior, 4 — 7 cm. longus,  $\frac{1}{3}$  parte basali vaginatus, sordide ruber, antice apicem versus canaliculatus, lateraliter rugulosus; lamina oblanceolata,  $\pm 10$  — 18  $\times$  4 — 7 cm., ad vel supra mediam partem latissima, paullo inaequilatera, supra saturate viridis, subtus pallidior, apice breviter acuminata, basi acuta vel subrotundato-cuneata; venae primariae 5 — 6 utrinque, angulo acuto ascendentes, apicem versus sursum arcuatae, venis secundariis, tertiariis quaternariisque gracilioribus interpositis. Pedunculus probabiliter perbrevis. Spatha elongato-ovoideo-ellipsoidea,  $\pm 1\frac{1}{2}$  — 2 cm. longa,  $\frac{1}{2}$  cm. ampla



Spadix subsessilis, usque  $1\frac{1}{2}$  cm. longus; inflorescentia feminea breviter cylindracea; ovaria conoideo-ovoidea, 2—3-locularia, ovulis placentae centrali fere tota longitudine affixis (fig. c.); stigma late discoideum, quam apex ovarii latius, deciduum; staminodia longitudinis ovarii  $\frac{3}{4}$  partes metientia, stipitato-clavata; inflorescentia mascula elongato-conoideo-cylindracea, quam inflorescentia feminea  $\pm 2$ -plo longior; flores masculi plerumque 2-andri, thecis sub connectivo non absconditis (fig. c').

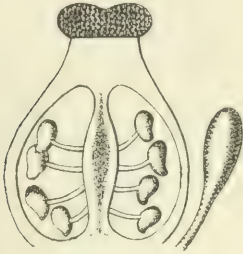


Fig. c.

The description is taken from dried material of a specimen cultivated in the Buitenzorg Gardens. — Resembles in aspect very much *H. batuensis*

ENGL., of which, however, the flower is unknown.

*Sumatra (Deli, JAHERI).*

**Homalomena lucidula, v. A. v. R.**

*Chamaecladon.* — Herba parva, caudiculo  $\pm 2$  cm. longo. Foliorum petiolus  $2\frac{1}{2}$  —  $6\frac{1}{2}$  cm. longus, viridis vel purpurascenti-afflatus, dimidia parte basali vaginatus; lamina subcoriacea, elongato-lanceolata,  $6\frac{1}{2}$ — $13 \times 1\frac{1}{2}$ — $2$  cm., paullo (vix) inaequilatera, supra lucidula, obscure viridis, subtus pallidior, basi acuta, apice acuminata, breviter apiculata; venae primariae 3 utrinque, subtus prominentes, venis secundariis tertiarisque gracilibus, immersis interpositis, angulo acuto ascendentes, apicem versus sursum curvae et margini subparallelae. Pedunculus  $\pm 2$  cm. longus, viridis vel purpurascens. Spatha conoideo-cylindracea,  $\pm 1\frac{1}{4}$  cm. longa, viridis, apice cuspidato-acuminata. Spadix subsessilis, 8—12 mm. longus; inflorescentia feminea  $\pm 2$ —3 mm. longa, pallide viridis; ovaria conoideo-globosa (fig. d), 2-locularia, ovulis apicem placentae non attingentibus; stigma parvum, rotundum; staminodia breviter clavata, sordide albida, breviter stipitata; inflorescentia mascula quam feminea  $\pm 3$ —4-plo longior, pallide flavida, subburnea; flores masculi 3-andri, thecis sub connectivo non absconditis (fig d').



Fig. c'.

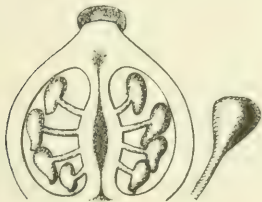


Fig. d.



Fig. d'.

The description is taken from a young specimen cultivated in the Buitenzorg Gardens, flowering December 1919 and January 1920. The adult plant has the dimensions probably somewhat larger.

*Sumatra (Deli, Haboko, in forest, W. DOCTERS VAN LEEUWEN).*

**Homalomena incerta**, v. A. v. R.

*Chamaecladon*. — Herba  $\pm$  30 cm. alta, caudiculo  $\pm$  5 cm. longo,  $\frac{1}{2}$  cm. crasso. Foliorum petiolus gracilis, 5—10 cm. longus,  $\pm$  ad tertiam partem vel brevius vaginatus; lamina in sicco herbacea, irregulariter oblongo-elliptica, 8—12  $\times$   $3\frac{1}{4}$ —6 cm.,  $\pm$  in media parte latissima, apice acuminata, breviter et graciliter apiculata, basi interdum acuta, plerumque obtusa vel rotundata et imo brevissime acutata; venae primariae  $\pm$  3—5 utrinque, angulo acuto ascendentes, venis secundariis tertiariisque gracillimis interpositis. Pedunculi graciles,  $\pm$   $3\frac{1}{2}$ —4 cm. longi. Spatha elongato-ovoidea, 3— $3\frac{1}{4}$  cm. longa,  $\frac{3}{4}$ —1 cm. ampla, acuta vel acuminata, viridis. Spadix brevissime stipitatus, quam spatha multo brevior,  $\pm$   $1\frac{1}{4}$  cm. longus; inflorescentia feminea breviter cylindrica,  $\pm$  6 mm. longa et 4 mm. crassa; ovaria conoideo-ovoidea, 3-locularia, ovulis placentae centrali tota longitudine affixis; stigma sessile, parvum, rotundum; staminodia quam ovaria plus minus duplo breviora, dimidia parte superiore obconoideo-clavata, dimidia parte inferiore graciliter cylindrica; inflorescentia mascula quam feminea paullo (vix) longior,  $\pm$  7 mm. longa.

This rivals *H. elliptica* HK. F. in shape and size of the leaves but differing totally in the spadix.

*Sumatra Ophir District, Mt. Talamau*, H. A. B. BÜNNEMEIJER No. 503, forest, alt. 900 m., 28 April 1917).

**Homalomena pygmaea** (HASSK.), ENGL., Pflzrch, LV (IV, 23 Da), Arac.-Philod.-Homal.-Schism., 34, fig. 15—16; *Chamaecladon lanceolatum*, MIQ., Flor. Ned. Ind., III, 212, tab. XL; SCHOTT, Gen. Aroid., tab. 60; *Aglaonema pygmaea*, HASSK., Cat. Bog., 57.

This species seems to be very variable. Living specimens cultivated in the Buitenzorg Gardens and dried specimens occurring in the Buitenzorg Herbarium, determined by ENGLER, have the petiole varying from 2 to 15 cm. long, the lamina from broadly oval to relatively narrowly lanceolate, 3—15  $\times$  1—6 cm., with the base acuminate to broadly rounded, the apex acute, or suddenly, shortly to gradually long-acuminate, the peduncle about 2—5 cm. long. The specimens are running into each other by intermediates so gradually that it is impossible to draw the precise line of demarcation between the typical form and the varieties *latifolia* and *pumila*.—See also the differences in the figures and plates mentioned above. ENGLER gives figures with ovaries in which the ovules are basal; in SCHOTT's plate the ovules are arranged along the whole placenta, etc. The living plants of the Buitenzorg Gardens have the masculine flowers 3—4-androus, as in *H. rupicola* v. A. v. R.

Forma typica: Petiole green, the sheath green; lamina bright-green, or reddish beneath; spathe green or yellow-green. — TEYSMANN's No. 10826 from *Borneo*, determined by ENGLER, is *H. humilis* HK. F. or a form of it.

**Var. purpurascens** (*H. purpurascens*, SCHOTT): Like the type but the sheath of the petiole reddish, the lamina above reddish or dark-green. —HALLIER's No. 3223 from *Borneo*, determined by ENGLER as *var. purpurascens*, is a species near *H. humilis* HK. F.

**Homalomena Kingii**, HK. F., Flor. Brit. Ind., VI, 535; ENGL., Pflzrch, LV (IV, 23 *Da*), Arac.-Philod.-Homal.-Schism., 41, fig. 21.

According to the diagnosis and figure given by ENGLER, this species has an oblong-ovate lamina about twice to thrice as long as broad, with a rotundate-truncate base. RAAP's No. 117 from *Batoe Island*, determined and mentioned by ENGLER, however, has a very broadly ovate lamina at best  $1\frac{1}{2} \times$  as long as broad, with a slightly cordate-emarginate base, narrowed gradually towards the apex. Specimens from *Sumatra* (BÜNNEMEIJER Nos. 3239, 3254) are distinguished in having the lamina as broad as in the *Batoe* plant but the base is not emarginate but very broadly truncate-cuneate and abruptly, shortly cuneate.

**Homalomena sulcata**, ENGL., Pflzrch, LV (IV, 23 *Da*), Arac.-Philod.-Homal.-Schism., 45, fig. 25.

WINKLER's No. 2277 from *Borneo* is unknown to me. — Two specimens from an unknown habitat, cultivated in the Buitenzorg Gardens, determined by ENGLER several years ago, differ from the original diagnosis of the species. They are distinguished as follows: Petiole shorter or sometimes somewhat longer than the lamina,  $3\frac{1}{2}$ – $12\frac{1}{2}$  cm. long, green with a reddish sheen, sheathing about  $\frac{1}{3}$ – $\frac{1}{2}$  its length, the sheath red or broadly red-margined; lamina elongate-ovate or triangular with broadly rounded basal corners,  $7\frac{1}{2}$ – $12\frac{1}{2} \times 2\frac{1}{2}$ – $7\frac{1}{2}$  cm., red-margined, above moderately dark-green, beneath green intermixed with dirty-red, the base rounded or truncate, whether or not more or less cordate-emarginate; primary veins 3–6 on a side, ascending, or the basal ones horizontal or slightly deflexed in the leaves with a truncate or emarginate base. Peduncle  $1$ – $3\frac{1}{2}$  cm. long, green. Spathe  $1\frac{1}{2}$ – $2\frac{1}{2}$  cm. long,  $\frac{1}{3}$ – $\frac{3}{4}$  cm. diam., green, becoming gradually reddish towards the finely long-cuspidate-acuminate apex. Ovaries green, broadly conoid-ovoid, with the stigma as broad as the apex of the ovary; staminodes clavate from a slender base, white; masculine flowers nearly white, 2–4-androus, the 3-androus ones resembling ENGLER's fig. 25 *D*. — These differences may be due to the conditions in which the cultivated plants are placed. — Another specimen, from *Borneo*, approaches the habit described by ENGLER.

**Var. subconcolor**: Foliorum lamina utrinque viridis sed subtus quam supra pallidior, rubro-cincta; pedunculus apicem versus pallide viridis, ceterum roseus; spathe pallide viridis. — *Sumatra*, (*Deli*, JAHERI; cultivated in the Buitenzorg Gardens, flowering July 1920).

**Homalomena refulgens**, V. A. V. R.

*Chamaecladon*. — Herba parva, caudiculo  $\pm$  5 cm. longo. Foliorum petiolus quam lamina paullo brevior, 7 — 9 cm. longus, obscure viridis,  $\frac{1}{3}$  —  $\frac{1}{2}$  parte basali vaginatus, vagina pallidiore; lamina herbacea, triangulari-ovata vel -oblonga,  $\pm$  9 — 12  $\times$  6 — 9 cm., viridis, supra obscure velutino-refulgens, inter venas leviter convexa, subtus pallidior, basi subcordato-truncata, imo brevissime cuneata, apice subabrupte et breviter acuminata, brevissime apiculata; venae primariae 8 — 10 utrinque, subtus cum venis secundariis paullo gracilioribus prominentes, venis tertiariis quaternariisque gracillimis, immersis interpositis, basales horizontales, apicem versus sursum curvae, ceterae sensim magis ascendentes. Pedunculi 2 — 4 cm. longi, virides. Spatha conoideo-cylindracea,  $1\frac{3}{4}$  —  $2\frac{1}{2}$  cm. longa,  $\frac{1}{2}$  —  $\frac{3}{4}$  cm. ampla, viridis, apice acuminata, acumine leviter incurvo. Spadix sessilis,



Fig. e.

florifer  $\pm$   $1\frac{1}{2}$  —  $1\frac{3}{4}$  cm. longus, 3 — 4 mm. crassus; inflorescentia feminea breviter cylindracea,  $\pm$  4 mm. longa, perpallide viridis; ovaria conoideo-lageniformia (fig. e), 2-locularia, ovulis apicem placentae non attingentibus; stigma discoideum, quam apex ovarii non multo crassius; staminodia breviter clavata ad subglobosa, perpallide flavida, subburnea; inflorescentia mascula quam feminea  $\pm$  3 — 4-plo longior, conoideo-cylindracea, perpallide flavida, subburnea; flo-

res masculi 2 — 4-(plerumque 3-)andri, thecis sub connectivo non absconditis (fig. d'). — Foliorum intermediorum petiolus eo foliorum normalium similis sed brevior, lamina spathae late hianti simili sed minore.

The description is taken from a young living specimen cultivated in the Buitenzorg Gardens, flowering December 1919 and January 1920. The adult plant has the dimensions perhaps somewhat larger.

*Sumatra* (*Deli, Sibolangit*, in forest, alt.  $\pm$  1000 m., W. DOCTERS VAN LEEUWEN).

**Homalomena humilis** (JACK), HK. F., Flor. Brit. I., VI, 533; ENGL., Pflzrch, LV (IV, 23 *Da*), Arac.-Philod.-Homal.-Schism., 49, fig. 27; *Chamaecladon humile*, MIQ., Flor. Ned. Ind., III, 213; *Calla humilis*, JACK, in Calctt. Journ. Nat. Hist., IV (No. 13), 11.

Specimens from *Borneo*, cultivated in the Buitenzorg Gardens, formerly determined by ENGLER as *H. ovata* ENGL. and *H. velutina* SCORT., are distinguished by the following characters not mentioned in the diagnoses given by HOOKER and ENGLER: Petiole green, with the sheath green or rosy; lamina  $1\frac{1}{2}$  — 3  $\times$  as long as broad, above bright-green, with an opaque-velutinous appearance when fresh, beneath paler, the base varying from subdecurrent-cuneate to broadly rounded and even slightly cordate-emarginate; peduncle green, yellowish or rosy, as is the spathe; feminine

inflorescence pale-green, masculine pale-green or -yellow; masculine flowers 3—4-androus. The dried plant has the lamina olive-green or -brown, not dark. MIQUEL describes the plant as having a black-red spathe. — *H. velutina* SCORT. is said to differ in having the petiole somewhat shorter than the lamina, the lamina more velvety, with more numerous (10—15) primary veins on a side, and the spathe blood-red or purplish. A duplicate of SCORTECHINI's No. 276 mentioned in ENGLER's monograph under *H. humilis* HK. F. var. *velutina*, occurring in the Buitenzorg Herbarium, has the lamina not invariably longer than the petiole, with only 4—6 primary veins on each side.

***Homalomena obscurifolia*, v. A. v. R.**

*Chamaecladon*. — Tota planta in sicco obscure fusca, relative parva,  $\pm$  25 cm. alta, caudiculo  $\pm$  5 cm. longo et 1 cm. crasso. Foliorum petiolus quam lamina nunc paullo brevior nunc paullo longior, 4—8 cm. longus,  $\frac{1}{3}$ — $\frac{1}{2}$  parte basali vaginatus; vagina in sicco rubescens; lamina in sicco relative firmiter herbacea, ovato-lanceolata,  $\pm$  5—10  $\times$  2 $\frac{1}{4}$ —5 cm., supra sub lente densissime et minutissime papillosa, subtus dense et minute pallide verruculosa, ad venas et inter verruculas minutissime papillosa, basi rotundato-cuneata vel late rotundata, imo breviter cuneata, margine crispatula, apice acuminata, breviter et graciliter apiculata; venae primariae  $\pm$  3—5 utrinque, venis secundariis, tertiariis quaternariisque, sensim gracilioribus interpositis, ascendentes, apicem versus valde sursum curvae, basi decurrentes. Pedunculi breves, usque  $\pm$  1 $\frac{1}{2}$  cm. longi. Spatha conoideo-fusiformis,  $\pm$  1—1 $\frac{1}{2}$  cm. longa et 3 mm. ampla, apice breviter et graciliter cuspidata. Spadix subsessilis, usque 1 $\frac{1}{4}$  cm. longus; inflorescentia

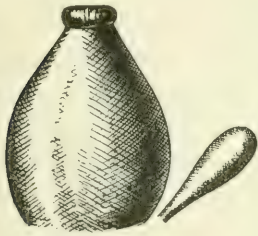


Fig. f.

feminea brevis,  $\pm$  2 mm. longa; ovaria conoideo-ovata (fig. f), ovulis specie subbasalibus; stigma parvum, discoideum; staminodia breviter clavata; inflorescentia mascula quam feminea  $\pm$  5-plo longior,  $\pm$  1 cm. longa; flores masculi 3—5-andri, thecis sub connectivo non occultis (fig. f').

*Borneo* (HALLIER No, 3223).

***Homalomena pusilla*, v. A. v. R.**

*Chamaecladon*. — Herba parva, foliis nutantibus tantum usque 5 cm. alta, caudiculo brevi. Foliorum petiolus 2 $\frac{1}{2}$ —5 cm. longus, sordide roseus, basi  $\frac{1}{3}$  viridi-vaginatus, ceterum antice canaliculatus, lateraliter, longitudinaliter rugulosus; lamina in vivo relative firmiter herbacea, in sicco tenuior, lanceolata, foliorum majorum 5—7 $\frac{1}{2}$   $\times$  2—2 $\frac{3}{4}$  cm., smaragdina, supra opaco-velutina, apice sensim breviter acuminata, breviter apiculata, margine



Fig. f'.

crispatula. basi rotundata vel rotundato-cuneata; costa subtus basin versus lateraliter rugulosa et saepe sordide rosea; venae primariae 3 utrinque, erecto-patentes, subtus prominentes, apicem versus sursum curvae, basi in costa decurrentes; venae secundariae tertiariaeque graciliores. Pedunculus  $\pm 1\frac{1}{2}$  cm. longus, sordide roseus. Spatha cylindracea,  $1\frac{1}{2}$  cm. vel plus longa, 3 mm. ampla, sursum smaragdina, deorsum sordide rosea, apice acuminata, basi obconoideo-attenuata. Spadix stipite 2 mm. longo, roseo suffultus, juvenilis  $\pm 11$  mm. longus; inflorescentia feminea breviter cylindracea, juvenilis  $\pm 2$  mm. longa et (cum staminodiis) flavido-viridis; ovaria depresso-globosa ad sublentiformia, 2-locularia, ovulis basifixis; stigma parvum; staminodia ovaria aequantia, clavata; inflorescentia mascula cylindracea, juvenilis  $\pm 9$  mm. longa et smaragdina, apice sensim conoidea, acutiuscula; flores masculi plerumque 3-andri, thecis sub connectivo non occultis.

The description is taken from a plant cultivated in the Buitenzorg Gardens, flowering July 1920.

*Celebes (Mt. Taloang, Capt. L. VAN VUUREN's Exploration Expedition).*

**Homalomena aeneifolia**, v. A. v. R.

*Chamaecladon*. — Herba parva, foliis nutantibus tantum usque ad 10 cm. alta, caudiculo usque ad 4 cm. longo. Foliorum petiolus 4–8 cm. longus, usque ad medium vaginatus, ceterum antice canaliculatus, lateraliter leviter longitudinaliter rugulosus, apicem versus sordide ruber, basin versus (cum vagina) coccineus; vagina relative lata, albido-marginata; lamina in vivo relative firmiter herbacea, in sicco tenuior, ovata vel ovato-oblonga, foliorum majorum  $7\frac{1}{2}$ –12  $\times$   $3\frac{1}{2}$ –5 cm., supra in vivo nitido-velutina, in juventute obscure sordide rubra, post aeneo-viridis (rubro-viridis), postremo (marcescens) aurantiaca, subtus in juventute viridis, post obscure sordide rubra, postremo (marcescens) miniata, basi rotundata vel rotundato-truncata, apice sensim obtusiuscule acuminata, breviter, acute apiculata; costa subtus leviter, longitudinaliter rugulosa et cum venis sordide rosea ad obscure rubra; venae primariae 4–6 utrinque, subtus prominentes, ascendentes, apicem versus sursum curvae, basi in costam decurrentes; venae secundariae tertiariaeque sensim graciliores. Pedunculus  $\pm 1\frac{1}{2}$  cm. longus, coccineus. Spatha cylindracea,  $\pm 2$  cm. longa, 3 mm. ampla, obscure sordide rubra, basi obconoidea, apice acuminata, aeneo-viridis, acumine curvato, viridi. Spadix subsessilis,  $\pm 1\frac{1}{2}$  cm. longus; inflorescentia feminea breviter cylindracea, apice obliqua, circiter  $2\frac{1}{2}$  mm. (antice 2 mm., postice 3 mm.) longa; ovaria (cum staminodiis) flavido-viridia, crasse conoideo-ovoidea vel lageniformi-globosa et apice styliformi-attenuata, 2-locularia, ovulis subbasifixis; stigma parvum; staminodia clavata, ovaria aequantia vel breviora; inflorescentia mascula cylindracea,  $\pm 12\frac{1}{2}$  mm. longa, pallide viridis, basi obliqua, apice sensim conoidea, obtusiuscula; flores masculi 3-andri, thecis sub connectivo non occultis.

The description is taken from a living plant cultivated in the Buitenzorg Gardens, flowering July 1920.

*Celebes* (Capt. L. VAN VUUREN's Exploration Expedition).

**Homalomena asperifolia**, v. A. v. R.

*Chamaecladon*. — Herba relative parva, usque  $12\frac{1}{2}$  cm. alta, caudiculo usque  $7\frac{1}{2}$  cm. longo,  $\frac{3}{4}$  cm. crasso. Foliorum petiolus quam laminae  $\pm$  2-plo brevior (nunc paullo longior, nunc paullo brevior), laevis,  $\frac{1}{3}$ — $\frac{1}{2}$  parte basali vaginatus, vagina viridi vel rosea; lamina subcoriacea subelliptica, ovalis, ovata vel lanceolata, longitudine  $1\frac{1}{2}$ —3-plo latitudinem metiens,  $7\frac{1}{2}$ — $12\frac{1}{2} \times 2\frac{1}{2}$ —6 cm., supra obscure viridis, verrucis subcontiguus, obtuse conicis, oculo nudo perspicuis aspera, subtus pallidior, verruculis minutis, oculo nudo non perspicuis asperula, basi rotundato-cuneata ad late rotundata vel leviter cordato-emarginata, apice rotundata vel breviter acuminata, minute apiculata; venae primariae 4—7 utrinque, cum venis secundariis subtus distincte prominentes, venis tertiariis gracillimis, immersis, erecto-patentes, inferiores in foliis latissimis subhorizontales, apicem versus sursum curvae. Pedunculi  $1\frac{1}{2}$ —2 cm. longi, virides vel flavido-virides. Spatha conoideo-ellipsoidea,  $\pm$   $1\frac{1}{2}$ —2 cm. longa, usque  $\frac{1}{2}$  cm. ampla, viridis vel flavido-viridis, breviter cuspidata. Spadix subsessilis,  $1\frac{1}{4}$ — $1\frac{3}{4}$  cm. longus, usque  $\pm$  3 mm. crassus; inflorescentia feminea usque  $\pm$  3 mm. longa; ovaria ovoideo-conoidea (fig. g), pallide viridia, 2-locularia, ovulis  $\pm$  basifixis; stigma parvum, rotundum; staminodia non vidi; inflorescentia mascula quam feminea  $\pm$  3—4-plo longior, pallide viridis vel flavida; flores masculi 3—4-andri, thecis sub connectivo non occultis (fig. d').



Fig. g.

The description is taken from living plants cultivated in the Buitenzorg Gardens, flowering December 1919 and January 1920.

*Sumatra* (*Deli*, *Haboko*, in forest, W. DOCTERS VAN LEEUWEN).

**Homalomena Doctersii**, v. A. v. R.

*Chamaecladon*. — Herba perparva, foliis subrosulatis. Foliorum petiolus perbrevis, 3—4 mm. longus, supra canaliculatus, usque vel fere usque ad laminam vaginatus, inter vaginam et laminam marginatus et ciliolatus; vagina apice 2-ligulato-auriculata, auriculis ciliolatis vel integerrimis (decidue ciliolatis?); lamina herbacea, obovata  $2$ — $4\frac{1}{2} \times 1\frac{1}{2}$ — $2\frac{1}{2}$  cm., apice rotundata vel obtusa et abrupte, minutissime acuminata, margine in vivo plicis recurvatis, copiosis, regularibus, subcontiguus, falcatis specie (oculo nudo conspecta) minute denticulata, copiose albido-ciliolata (fig. h), basi plus minusve anguste rotundato-cuneata; costa subtus basin



Fig. h.

versus striis breviter pilosis munita; venae primariae  $\pm 3$  utrinque, e parte inferiore costae ortae, margini parallelae, apicem versus sursum curvae, immersae, venis secundariis tertiariisque gracilioribus interpositis. Pedunculi graciles,  $1\frac{1}{2}$ —2 cm. longi, virides vel rubescentes, copiose breviter puberuli. Spatha angustius ad latius ovoidea,  $\frac{3}{4}$ —1 cm. longa,  $\frac{1}{4}$ — $\frac{1}{2}$  cm. ampla, viridis vel rubescenti-afflata, acuta, dorso costa decidue, breviter puberula munita. Spadix sessilis, quam spatha paullo brevior; inflorescentia feminea breviter cylindracea, 1— $1\frac{1}{2}$  mm. longa; ovaria subglobosa, viridia; stigma sessile, parvum, rotundum; staminodia . . . ; inflorescentia mascula conoideo-cylindracea, primum pallide viridis, post pallide flavida, quam inflorescentia feminea  $\pm 4$ -plo longior, acutiuscula; flores masculi 2—3-andri, thecis sub connectivo non occultis.

A very distinct species. — The description is taken from a living specimen cultivated in the Buitenzorg Gardens, flowering January 1920. A non-flowering plant collected in the same locality, nearly indistinguishable from this when seen with the naked eye, differs in having the dimensions somewhat larger, the fully developed leaves somewhat reddish beneath, without hairs or ciliae, and the apex more distinctly acuminate, apiculate.

*Sumatra (Pajakombo, Harau-Ravine, alt.  $\pm 400$  m., W. DOCTERS VAN LEEUWEN).*

### **Homalomena polyandra, V. A. V. R.**

*Chamaecladon.* — Caudex repens, usque  $\pm 10$  cm. longus, 2 cm. crassus, apicem versus foliatus. Foliorum petiolus  $7\frac{1}{2}$ —15 cm. longus, adultus basi valde crassus, nunc breviter, nunc ultra medium vaginatus, levissime verruculoso-asperulus, juvenilis pallide brunneo-roseus, apicem versus perdense et brevissime glanduloso-puberulus, postremo viridis, glabrescens, inter vaginam laminamque antice anguste canaliculatus et acute 2-marginatus; vagina perdense et brevissime puberula, mox exsiccata; lamina in vivo coriacea, lanceolata vel ovato-lanceolata, 11—22  $\times$  3— $6\frac{1}{2}$  cm., ad vel infra medium latissima, juvenilis pallide roseo-brunnea, mox supra obscure smaragdina, maculis plus minusve copiosis, irregulariter sparsis, inaequimagnis, irregularibus, pallidius viridibus ornata, subtus subglauca, basi latius vel angustius rotundato-cuneata, margine leviter undulata, apice acuminata; costa cum venis primariis subtus perdense et brevissime glanduloso-puberula; venae primariae 12—18 utrinque, relative crassae, basi patentes vel subhorizontales, ceterum arcuato-ascendentes; venae secundariae graciliores, parce puberulae; venae tertiariae graciles. Pedunculus juvenilis  $2\frac{1}{2}$  cm. longus, levissime verruculoso-asperulus, basin versus roseus, glaber, apicem versus sordide brunneus, perdense et brevissime puberulus, postremo usque  $12\frac{1}{2}$  cm. longus, viridis, glabrescens. Spatha ovoideo-fusififormis,  $2\frac{1}{2}$ —4 cm. longa, 6—9 mm. ampla, viridis vel brunnescenti-viridis, glabra, acuta. Spadix stipite  $\frac{1}{4}$  cm. longo suffultus, ellipsoideus, juvenilis  $1\frac{3}{4}$  cm. longus, in medio  $\frac{1}{2}$  cm. crassus, utrinque  $\pm$  rotundatus, postremo usque 3 cm.



longus; inflorescentia feminea  $\frac{1}{4}$  cm. longa; ovaria ovoidea, plus minusve crassa, pallide viridia, apice in stylum crassum, longius vel brevius

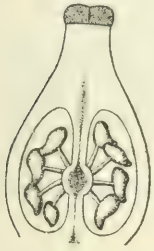


Fig. i.

cylindraceum attenuata, ovulis infra medium placentarum congregatis (fig. i); stigma plano-discoideum, rotundum, leviter 3—4-lobatum, perpallide viride; staminodia non vidi; inflorescentia mascula quam feminea 5—6-plo longior, juvenilis viridescenti-albida, demum . . . . . ; flores masculi 5- vel saepius 6-andri, rotundi vel 5-angulosi, saepius elongati et 6-angulosi, thecis sub connectivo non occultis (fig. i').



Fig. i'.

The description is taken from living plants cultivated in the Buitenzorg Gardens. — Habitat unknown.

**Homalomena rupicola, v. A. v. R.**

*Chamaecladon*. — Herba majuscula,  $\pm$  40 cm. alta, caudiculo usque 15 cm. longo et  $\frac{3}{4}$  cm. crasso. Foliorum petiolus quam lamina paullo brevior, 10—20 cm. longus, plerumque obscure viridi-purpureus, basi breviuscule ( $\pm \frac{1}{6}$ — $\frac{1}{3}$ ) vaginatus; lamina in sicco firmiter herbacea, lanceolata, 12—22 $\frac{1}{2}$   $\times$  3—9 cm., vix inaequilatera, viridis, basi acuta, apice breviter et obtusiuscule acuminata, brevissime apiculata; venae primariae in foliis majoribus 9—12 utrinque, angulo acuto ascendentes, apice sursum arcuatae, venis secundariis distinctis, tertiariis quaternariisque occultis interpositis. Pedunculi 2—2 $\frac{1}{2}$  cm. longi, graciles, rubro-brunnei. Spatha elongato-conoideo-fusififormis, cuspede exclusa 1 $\frac{1}{2}$ —1 $\frac{3}{4}$  cm. longa, 3—4 mm. ampla, rubro-brunnea, acute cuspidata, cuspede H. Scortechinii HK. F. more recurvata, plus minusve sigmoidea. Spadix sessilis, 1—1 $\frac{1}{2}$  cm. longus, in media parte  $\pm$  2 mm. crassus; inflorescentia feminea brevis,  $\pm$  2—3 mm. longa; ovaria conoideo-ovata (fig. j), pallide carnea, specie 2-locularia, ovulis apicem placentarum non attingentibus; stigma discoideum, rotundatum, quam apex ovarii latius; staminodia clavata, quam ovaria  $\pm$  2-plo breviora; inflorescentia mascula elongato-conoidea, quam feminea  $\pm$  3—4-plo longior, acutiuscula, flavido-viridis; flores masculi plerumque 3-andri, thecis sub connectivo non occultis (fig. d').



Fig. j.

*Sumatra (Deli, Sibolangit, on rocks and slopes in deep shade of primeval forest, alt.  $\pm$  450 m., J. A. LÖRZING, No. 5197, 10 July 1917).*

**Homalomena silvatica, v. A. v. R.**

*Chamaecladon*. — Herba majuscula, usque  $\pm$  30 cm. alta, caudiculo usque 10 cm. longo,  $\frac{3}{4}$  cm. crasso. Foliorum petiolus quam lamina nunc paullo brevior, nunc paullo longior, 7 $\frac{1}{2}$ —15 cm. longus,  $\frac{1}{4}$ — $\frac{1}{2}$  parte

basali viginatus; lamina in sicco herbacea, plerumque ovata, foliorum minorum raro lanceolata,  $8-16 \times 3-8$  cm., basi late rotundata, raro rotundato-cuneata, imo abrupte, brevissime cuneata, apice acuta ad breviter acuminata, minute apiculata; venae primariae  $\pm 4-7$  utrinque, venis secundariis, tertiariis quaternariisque gracilioribus, pluribus interpositis, conspicue sursum arcuatae, basales parte inferiore patentes vel horizontales, ceterae ascendentes. Pedunculi graciles, 3—4 cm. longi. Spatha conoideo-fusififormis,  $\pm 1\frac{1}{2}-1\frac{3}{4}$  cm. longa,



Fig. k.

3 mm. ampla, acuminata, laete viridis. Spadix brevissime stipitatus, cum stipite  $1-1\frac{1}{2}$  cm. longus, usque 2 mm. crassus; inflorescentia feminea brevissima,  $1-2\frac{1}{2}$  mm. longa; ovaria conoideo-ovoidea (fig. k), 2-locularia, ovulis subbasifixis; stigma discoideum, rotundum, quam apex ovarii latius; staminodia quam ovaria  $\pm 2$ -plo breviora, clavata, breviter stipitata; inflorescentia mascula elongato-cylindraco-

conoidea, quam feminea 4—8-plo longior; flores masculi 4-andri, thecis sub connectivo non occultis (fig. k').

*Sumatra (Deli, Upper Bandar-baroe, in forest, alt.  $\pm 1250$  m., J. A. LÖRZING No. 4696, 3 February 1917).*



Fig. k'

### **Homalomena coccinea, v. A. v. R.**

*Chamaecladon.* — Herba parva, 15—25 cm. alta, caudiculo 5—10 cm. longo, 3 mm. crasso. Foliorum petiolus quam lamina plerumque paullo brevior,  $2\frac{1}{2}-7\frac{1}{2}$  cm. longus, purpureus vel viridis et purpureo-tinctus, supra plus minusve canaliculatus,  $\frac{1}{3}-\frac{1}{2}$  parte basali membranaceo-vaginatus; lamina late elliptica vel elliptico-ovata, quam lata plerumque 2-plo longior, interdum pro ratione paullo longior vel brevior,  $4-8 \times 3-4$  cm., paullo inaequilatera, altero latere  $1\frac{1}{8}-1\frac{1}{4}$ -plo latiore, supra nigro-vel purpureo-viridis, subtus sordide rubra, postremo utrinque laete coccinea, apice breviter et late acuminata, breviter et graciliter apiculata, basi late rotundata vel rotundato-cuneata, imo breviter decurrenti-cuneata; venae primariae  $\pm 4$  utrinque, ascendentes, apicem versus conspicue sursum curvae, venis secundariis, tertiariis quaternariisque sensim gracilioribus interpositis. Pedunculi 1—2 cm. longi, pallide purpureo-rosei, deorsum dense pallidius punctulati. Spatha conoideo-fusififormis,  $1\frac{1}{4}-1\frac{3}{4}$  cm. longa,  $\pm 3$  mm. ampla, dimidia parte basali pallide purpureo-rosea, sursum viridis et purpureo-tincta, apice acute acuminata. Spadix perbrevis stipitatus, usque  $\pm 1\frac{1}{4}$  cm. longus; inflorescentia feminea  $\pm 2\frac{1}{2}$  mm. longa et 2 mm. crassa; ovaria globoso-ovoidea, 2-locularia, ovulis dimidiam partem inferiorem placentae occupantibus (fig. l); stigma sessile, discoideum, rotundum, quam apex ovarii latius; staminodia quam ovaria paullo breviora,



Fig. l.

acuminata. Spadix perbrevis stipitatus, usque  $\pm 1\frac{1}{4}$  cm. longus; inflorescentia feminea  $\pm 2\frac{1}{2}$  mm. longa et 2 mm. crassa; ovaria globoso-ovoidea, 2-locularia, ovulis dimidiam partem inferiorem placentae occupantibus (fig. l); stigma sessile, discoideum, rotundum, quam apex ovarii latius; staminodia quam ovaria paullo breviora,

crasse capitato-clavata, brevissime, graciliter stipitata; inflorescentia mascula elongato-conoideo-cylindracea, quam feminea  $\pm$  5-plo longior,  $1\frac{1}{4}$  cm. longa; flores masculi 2—4-(plerumque 3)-andri, thecis sub connectivo non absconditis (fig. l').



Fig. l'.

The description of the colours is taken from fresh material, flowering January 1920.

*Java* (*Preanger Regencies, Mt. Halimoen*, on weather beaten rocks along brooks in primeval forest, alt, 600 m., R. C. BAKHUIZEN VAN DEN BRINK No. 172).

### *Homalomena triangularis*, V. A. V. R.

*Euhomalomena*. — Planta majuscula,  $\pm$  65—80 cm. alta, caudiculo  $\pm$  2 cm. crasso. Foliorum petiolus quam lamina  $\pm$  2— $2\frac{1}{2}$ -plo longior,  $\frac{1}{4}$ — $\frac{1}{3}$  parte basali vaginatus; lamina in sicco firmiter herbacea, paullo elongata, leviter cordato-triangularis,  $\pm$  20  $\times$  10—12 cm.; lobus anticus triangularis,  $\pm$  17 $\frac{1}{2}$  cm. longus, apicem breviter acuminatum versus linea paullo excurva sensim angustatus; lobi postici late rotundato-triangulares,  $\frac{1}{10}$ — $\frac{1}{8}$  longitudinis lobi antici metientes, sinu non profundo, latissime obtusissimeque triangulari separati; venae primariae  $\pm$  8—10 utrinque, basales horizontales vel leviter deflexae, parte superiore sursum curvae, costales arcuato-ascendentes, venis secundariis tertiariisque gracilioribus interpositis. Pedunculi primum  $\pm$  7 $\frac{1}{2}$  cm., demum usque 30 cm. longi, deorsum carnei, sursum (cum spatha?) virides vel flavido-virides, olivaceo-striati. Spatha cylindraceo-ellipsoidea, apiculata, primum  $\pm$  7 cm. longa et 1 cm. ampla, demum usque 12 cm. longa et 1 $\frac{1}{2}$  cm. ampla. Spadix breviter stipitatus, primum  $\pm$  5 $\frac{1}{2}$  cm., demum usque 9 cm. longus; inflorescentia feminea cylindrica, primum  $\pm$  1 $\frac{1}{2}$  cm. longa et  $\frac{1}{2}$  cm. crassa, demum major; ovaria conoideo-ovoidea (fig. m), demum obovoidea, viridia, 3-locularia; stigma sessile, discoideum, primum rotundum, demum sub-3-lobatum, radiatim 3-sulcatum; staminodia cujusque floris 1—2, pistilla  $\pm$  aequantia, dimidia parte inferiore filiformia, dimidia parte superiore crassissime obconoideo-clavata, flavida; inflorescentia mascula cylindrica, flavida, primum  $\pm$  4 cm. longa et  $\frac{1}{2}$  cm. crassa, demum major; antherae connectivo crasso, supra appianato, thecas occultante (fig. m').



Fig. m.



Fig. m'.

*Sumatra* (*Deli, Medan*, swampy places in jungle, alt. 15 m., J. A. LÖRZING No. 4071, 27 July 1915).

**Homalomena latifrons**, ENGL, Pflzrch, LV (IV, 23 *Da*), Arac.-Philod.-Homal.-Schism., 54, fig. 30.

HALLIER's original Nos. 68 and 1357, on which ENGLER based this species, are distinguished from his diagnosis by the following characters: Petiole to nearly  $2\frac{1}{2} \times$  as long as the lamina, 25—47 $\frac{1}{2}$  cm. long, sheathing  $\frac{1}{5}$ — $\frac{1}{4}$  its length; lamina broadly triangular-cordate, tending towards sagittate, 17 $\frac{1}{2}$ —25  $\times$  17—24 cm., with the posterior lobes  $\frac{1}{4}$ — $\frac{1}{2}$  as long as the central lobe; peduncles 5—12 $\frac{1}{2}$  cm. long; spathe 4—6 $\frac{1}{2}$  cm. long; spadix on a stalk about 5 mm. long (not hardly stalked), about as long as the spathe (including the stalk); masculine inflorescence about  $1\frac{1}{2}$ —2  $\times$  as long as the feminine.

A specimen from an unknown locality, cultivated in the Buitenzorg Gardens, determined by ENGLER, is distinguished in having the ovaries very pale-green, the staminodes white, the masculine inflorescence greenish- or yellowish-white.

**Homalomena paliformis**, v. A. v. R.

*Ethomalomena*. — Foliorum petiolus quam lamina longior, usque 35 cm. longus; basi  $\pm \frac{1}{3}$  vaginatus; lamina in sicco relative firmiter herbacea, subcordato-triangularis, imo (in sinu) brevissime et late cuneata,  $\pm 20$ —25  $\times$  15—25 cm.; lobus anticus palae more rotundato-triangularis,  $\pm 17\frac{1}{2}$ —20  $\times$  15—24 cm., apicem relative abrupte et breviter acuminatum versus linea excurva angustata; lobi postici triangulares, paullo extrorsi,  $\pm \frac{1}{4}$  longitudinis lobi antici metientes, sinu obtuso, latissime triangulari separati, apice rotundati; venae primariae  $\pm 8$ —9 utrinque, subtus prominentes, venis secundariis, tertiariis, quaternariis parallelibus, gracilioribus interpositis, basales recurvatae et horizontales, apicem versus sursum curvae, costales sensim conspicue ascendentes. Pedunculi floriferi usque 12 $\frac{1}{2}$  cm. longi. Spatha cylindrico-ellipsoidea, viridis, 5 $\frac{1}{2}$ —6 $\frac{1}{2}$  cm. longa, 1—1 $\frac{1}{4}$  cm. diam., apice brevissime rostrato-apiculata. Spadix stipite  $\pm 5$ —6 mm. longo suffultus, spatham  $\pm$  aequans; inflorescentia feminea cylindrica,  $\pm 1\frac{1}{4}$ —1 $\frac{1}{2}$  cm. longa  $\frac{1}{2}$  cm. crassa; ovaria cylindrico-lageniformia (fig. n), apice rotundato-conoidea, in stylus breviter

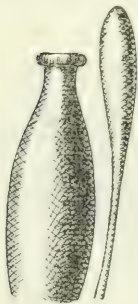


Fig. n.

cylindricum transientia; stigma discoideum, rotundum, quam stylus latius, in media parte paullo depressum; staminodia quam pistilla altiora, dimidia parte inferiore filiformia, dimidia parte superiore elongato-cuneato-clavata; inflorescentia mascula conico-cylindrica, quam feminea  $\pm 2\frac{1}{2}$ -plo longior et paullo crassior, sursum paullo attenuata; flores masculi plerumque 4-andri; antherae connectivo tenui thecas non occultante (fig. n').



Fig. n'.

Resembles at first sight *H. latifrons* ENGL.

*Java* (*Rembang, Ngawen*, in swampy places, J. BEUMÉE No. 816, May 1917; *Semarang, Manggar*, J. BEUMÉE No. 5045, 3 March 1920).

**Homalomena habokoana**, v. A. v. R.

*Euhomalomena*. — Herba majuscula, caudiculo  $\pm 12\frac{1}{2}$  cm. alto, 1 cm. crasso. Foliorum petiolus quam lamina longior,  $12\frac{1}{2}$ — $22\frac{1}{2}$  cm. longus, antice leviter canaliculatus,  $\frac{1}{4}$  parte basali vaginatus; vagina coriacea, persistens; lamina in vivo coriacea, subcordato-triangularis,  $12$ — $16 \times 10$ — $14$  cm., supra obscure, subtus pallide viridis; lobus anticus rotundato-triangularis, apicem breviter acuminatum versus linea excurva angustata; lobi postici obtusissime triangulares, sinu latissime et obtusissime triangulari separati,  $\frac{1}{8}$ — $\frac{1}{7}$  longitudinis lobi antici metientes, apice late rotundati; venae primariae  $\pm 8$ — $9$  utrinque, subtus prominentes, venis secundariis paullo prominentibus et venis tertiariis gracillimis absconditisque interpositis, basales plus minus horizontales vel paullo reversae, apicem versus sursum curvae, costales sensim ascendentes. Pedunculus 3—5 cm. longus, roseo-brunneus vel viridi-brunnescens, demum viridescens, longitudinaliter rugulosus. Spatha cylindracea,  $3\frac{1}{2}$ —4 cm. longa,  $\frac{3}{4}$ —1 cm. ampla, primum brunnea vel pallide rubro-brunnea, postremo viridescens, brunneo-afflata, basi et apice attenuata, apice cuspidato-acuminata. Spadix stipite  $1\frac{1}{2}$ — $2\frac{1}{2}$  mm. longo suffultus,  $2\frac{1}{2}$ — $3\frac{1}{4}$  cm. longus; inflorescentia feminea cylindracea,  $\frac{3}{4}$ —1 cm. longa,  $\frac{1}{2}$ — $\frac{3}{4}$  cm. crassa; ovaria conoideo-ovoidea, pallide viridia; stigma parvum, discoideum, rotundum; staminodia quam ovaria vix vel paullo breviora, dimidia parte inferiore filiformia, dimidia parte superiore clavata, albida (fig. o);

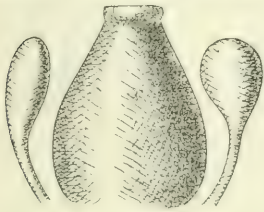


Fig. o.

inflorescentia mascula conoideo-cylindracea, quam feminea 2— $2\frac{1}{2}$ -plo longior, pallide flavida, subalbida, obtusiuscula; flores masculi 3-4-andri; antherae connectivo thecas non occultante (fig. o').

Resembles at first sight *H. latifrons* ENGL. The description is taken from a living plant cultivated in the Buitenzorg Gardens, flowering February 1920).

*Sumatra* (*Deli, Haboko*, in forest, W. DOCTERS VAN LEEUWEN).

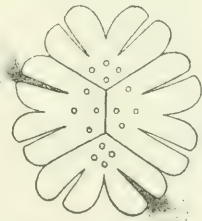


Fig. o'.

**Homalomena javanica**, v. A. v. R.

*Euhomalomena*. — Planta majuscula, caudice usque  $\pm 15$  cm. alto,  $1\frac{1}{2}$  cm. crasso. Foliorum petiolus  $\pm 40$ — $60$  cm. longus,  $\frac{1}{4}$  parte basali vaginatus; lamina ovato-vel subsagittato-cordata,  $\pm 20$ — $40 \times 12$ — $24$  cm.; lobus anticus triangularis,  $\pm 16$ — $26$  cm. longus, a basi linea extrorsum curvata apicem acute acuminatum, breviter cuspidato-apiculatum versus angustatus; lobi

postici obtuse triangulares vel semiovales, quam lobus anticus  $\pm$  3—4-plo breviores, retrorsi vel apice leviter extrorsi, sinu sat profunde triangulari separati; venae primariae  $\pm$  7—9 utrinque, venis secundariis, tertiariis quaternariisque gracilioribus interpositis, apicem versus sursum curvae, basales radiantes, costales sensim ascendentes. Pedunculus  $\pm$  10 cm. longus, demum longior (usque 20 cm). Spatha elongato-ovoideo-ellipsoidea, 5—6 cm. longa, 1 cm. ampla, demum maior, acuminata. Spadix stipite  $\pm$   $\frac{1}{3}$ — $\frac{1}{2}$  cm.

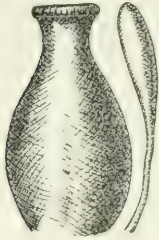


Fig. p.

longo suffultus, florifer  $\pm$   $4\frac{1}{2}$ —5 cm. longus, demum longior; inflorescentia feminea cylindracea,  $\pm$   $1\frac{1}{2}$  cm. longa, in sicco  $\frac{1}{2}$ —1 cm. crassa; ovaria ovoideo-lageniformia (fig. p), in specimine examinato 3-locularia; stigma subsessile vel stylum brevem coronans, discoideum, specie sub-3-lobatum; staminodia altitudinem pistillorum  $\pm$  aequantia, dimidia parte inferiore filiformia, in dimidiam partem superiorem elongato-clavatam sensim transiente; inflorescentia mascula elongato-conoideo-cylindracea, quam feminea  $\pm$  2—3-plo longior,  $\pm$  3— $3\frac{1}{2}$  cm. longa; flores masculi saepe 4-(interdum 3-) andri; antherae connectivo tenui thecas non occultante (fig. p').

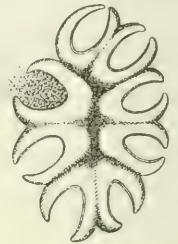


Fig. p'.

*H. aromatica* SCHOTT and *H. cordata* SCHOTT differ, according to the figures given by ENGLER in *Pflzrch*, LV (IV, 23 *Da*), 59—60, in having the thecae hidden under a thick connective.— The description is taken from dried specimens provided with labels not mentioning the colours.

Forma typica.— *Java* (*Preanger Regencies, Tjibodus*, in forest, near river side, alt.  $\pm$  1400 m., SAPII No. 117; J. A. LÖRSING No. 1716, 6 May 1914).

A plant cultivated in the Buitenzorg Gardens, flowering May-August 1920, which may be a form of this species, is distinguished by the following characters: Foliorum petiolus viridis, longitudinaliter obscurius striolatus, fere  $\frac{1}{2}$  vaginatus; lamina breviter acuminata, supra saturate, subtus pallide viridis. Pedunculus colore stipitis.

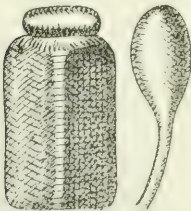


Fig. q.

Spatha longior, usque  $\pm$  10 cm. longa, flavido-viridis et punctis minutis rubescentibus specie brunneo-afflata vel pallidissime viridis, apicem versus rosea, marginem versus subalba, breviter apiculato-acuminata, acumine viridi, basi brunneo. Spadix longior, usque 8 cm. longus; inflorescentia feminea usque  $2\frac{1}{2}$  cm. longa; ovaria oblonga, pallide viridia; stigma sessile, perpallide viride; staminodia alba, dimidia parte superiore crasse clavata (fig. q); inflorescentia mascula usque ad  $5\frac{1}{2}$  cm.

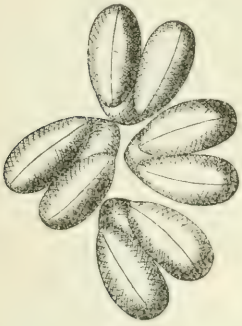


Fig. q'.

longa, primum perpallide viridi-albida, demum perpallide brunneo-flavida, subalba; flores masculi irregulariter 3—4-andri (fig. q'). (Forma aberrans). — *Borneo*.

**Var. kangeanensis:** Foliorum lamina basi pro ratione profundius cordata; spatha cum spadice pro ratione longior et gracilior; ovaria pro ratione breviora et crassiora; staminodia quam pistilla multo longiora, stipite supra basin conoideam fusiformi (fig. r).

In forest; alt. 200—250 m. — A distinct species? Material few and incomplete.

*Kangean Island* (near *Java*; C. A. BACKER No. 27477, 23 March 1919).



Fig. r.

### **Homalomena discolor, V. A. V. R.**

*Euhomalomena*. — Herba majuscula, caudiculo usque  $\pm 7\frac{1}{2}$  cm. longo et 1 cm. crasso. Foliorum petiolus  $\pm 20 - 25$  cm. longus, viridis, antice plus minusve canaliculatus, parte basali usque ad medium (vel longius aut brevius) vaginatus; vagina herbacea; lamina herbacea, ovato-vel subsagittato-cordata,  $\pm 15 - 20 \times 10 - 15$  cm., imo (in sinu) late et brevissime cuneata; lobus anticus late triangularis,  $12\frac{1}{2} - 15$  cm. longus, a basi apicem subabrupte et acute acuminatum, breviter cuspidato-apiculatum versus linea extrorsum curvata angustata; lobi postici obtuse triangulares vel semiovales, quam lobus anticus 5-plo breviores, sinu obtuse triangulari separati, retrorsi vel apice leviter extrorsi; venae primariae  $\pm 8 - 12$  utrinque, venis secundariis, tertiariis quaternariisque sensim gracilioribus interpositis, basales partim recurvatae, partim horizontales, apicem versus sursum curvae, costales sensim ascendentes. Cataphylla alba, 2-carinato-cristata, cristis roseis. Pedunculi  $5 - 12\frac{1}{2}$  cm. longi, primum pallide virides, demum obscuriores, hic illic pallide rubro-maculati. Spatha elongato-ovoidea, 5—7 cm. longa, 1—2 cm. ampla, breviter et acute acuminata, perpallide viridis, albida, hic illic (praesertim in dimidia parte superiore) rubescenti-afflata et -maculata, acumine rubro. Spadix stipite  $\frac{1}{4} - \frac{1}{2}$  cm. longo suffultus, 4— $6\frac{1}{2}$  cm. longus; inflorescentia feminea cylindrica,  $1\frac{3}{4} - 2\frac{1}{2}$  cm. longa,  $\frac{3}{4}$  cm. crassa; ovaria subobpyramidata, parte inferiore obtuse angulosa, apice conoidea (fig. s), pallide viridia, 3-locularia; stigma sessile, discoideum, rotundum, latitudine apicem ovarii aequans, leviter 3-lobatum, perpallide viride, albidum; staminodia altitudinem pistillorum aequantia vel subaequantia,

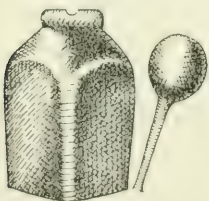


Fig. s.

eburnea, crasse capitatum, longius et graciliter stipitatum, stipite quam apice  $1\frac{1}{2}$ -plo longiore; inflorescentia mascula conoideo-cylindracea, quam feminea  $1\frac{1}{4}$ —2-plo longior, 3— $3\frac{1}{2}$  cm. longa, eburnea, apicem obtusiusculum versus sensim attenuata; flores masculi 2- vel saepius 3—4-andri; antherae connectivo crasso thecas non occultante (fig. s').

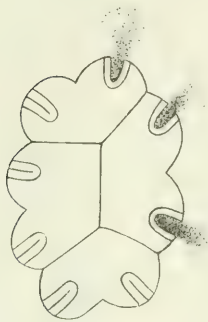


Fig. s'.

The description is taken from fresh material, flowering December 1919).

Java (*Buitenzorg*, *Tjampea*, in secondary forest, alt. 300 m., D. F. VAN SLOOTEN No. 245).

### *Homalomena bancana*, V. A. V. R.

*Euhomalomena*. — Herba majuscula caudice usque  $17\frac{1}{2}$  cm. longo et  $1\frac{1}{2}$  cm. crasso. Foliorum petiolus quam lamina  $\pm 1\frac{1}{2}$ —2-plo longior, 30—45 cm. longus,  $\frac{1}{8}$ — $\frac{1}{4}$  parte basali vaginatus; vagina a basi lata sursum angustata; lamina in sicco firmiter herbacea et brunnea, subsagittato-triangularis, imo (in sinu) brevissime et late cuneata,  $17\frac{1}{2}$ — $30 \times 15$ — $20$  cm.; lobeus anticus triangularis,  $15$ — $22\frac{1}{2} \times 10$ — $15$  cm., basi linea incurva in lobos anticos transiens, apicem versus linea paullo excurva angustatus, apice acute et anguste acuminatus, tubuliformi-apiculatus; lobi postici triangulares, saepe distincte extrorsi vel excurvi,  $\frac{2}{5}$ — $\frac{1}{3}$  longitudinis lobi antici metientes, apice rotundati, sinu obtuso, late triangulari separati; venae primariae  $\pm 8$ — $10$  utrinque, crassiusculae, venis secundariis, tertiariis quaternariisque gracilioribus interpositis, basales recurvatae et horizontales, parte apicali sursum curvae, costales sensim ascendentes. Pedunculi  $7\frac{1}{2}$ — $10$  cm. longi. Spatha elongato-ovoidea vel ellipsoidea, 4—8 cm. longa, primum  $\pm 1\frac{1}{2}$  (postremo usque  $2\frac{1}{2}$ ) cm. ampla, acuta vel apiculata. Spadix breviter stipitatus, florifer quam spatha paullo brevior; inflorescentia feminea cylindrica,  $\pm 1\frac{1}{2}$ — $2$  cm. longa, primum  $\frac{1}{2}$ — $\frac{3}{4}$  (fructifera usque  $\pm 1\frac{1}{2}$ — $1\frac{3}{4}$ ) cm. crassa; ovaria conoideo-ovoidea, obscure puncticulata, in specimine examinato 3-locularia (Fig. t); stigma sessile, discoideum, rotundum, latitudinem apicis ovarii metiens; staminodia parte basali filiformia, parte apicali obconoideo-clavata, altitudinem pistillorum plus minus aequantia; inflorescentia mascula conoideo-cylindracea, longitudinem femineae  $1\frac{1}{2}$ —2-plo metiens; flores masculi sublaxi, plerumque 4-andri; antherae breves, latae, thecis sub connectivo crasso, supra leviter verruculoso absconditis

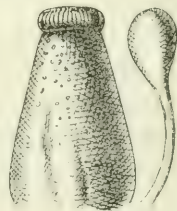


Fig. t.





Fig. 1'.

(fig. 1'); baccae obconoideo-obovoideae, 6-angulosae, apice rotundatae.

Near *H. pontederiifolia* GRIFF. which differs in having the lamina blackish when dry, with the basal lobes much shorter,  $\frac{1}{7}$ — $\frac{1}{6}$  the length of the antical lobe.— In forest, along road- and river-sides; alt. 30—300 m.

*Bangka* (H. A. B. BÜNNEMEIJER, *Mt. Benoeming* No. 1439, type, 12 October 1917; *Bindik* No. 2337, 9 December 1917); *Pulo Lepar* (H. A. B. BÜNNEMEIJER No. 2422, 12 December 1917).

***Homalomena rubra***, HASSK., in HOEV. & DE VR., *Tijdschr.*, IX, 162; ENGL., in *Pflzrch*, LV (IV, 23 *Da*), *Arac.-Philod.-Homal.-Schism.*, 63; *H. rubescens*, MIQ. (not KNTH), *Flor. Ned. Ind.*, III, 212.

Specimens gathered in *Batavia* by C. A. BACKER and others cultivated in K. HEYNE's garden in *Buitenzorg* are distinguished in having the petiole to about 75 cm. long, dark-purple, the lamina to  $47\frac{1}{2} \times 35$  cm., the spathe to  $8\frac{1}{2}$ —9 cm. long, purple, the spadix to 9—10 cm. long, on a stalk about  $\frac{1}{2}$  cm. long, the ovaries oblong-ellipsoidal, yellow-green with a purple apex, the staminodes obconoid-clavate, ivory-white, long-stalked, the masculine inflorescence about twice as long as the feminine,  $\frac{1}{2}$  cm. thick.— A specimen gathered in *Tjibeber* by W. F. WINCKEL at an altitude of 1000 m. differs in having the different dimensions smaller.

A plant gathered in *Sumatra* (*Deli, Sibolangit*, J. A. LÖRZING No. 5324, 10 October 1917), which may be a form of this species, is distinguished in having the caudex to 1 m. high, the leaves with the lamina deeply cordate at the base, with the basal lobes nearly half as long as the antical lobe, the spathe smaller than in the type, pale-red, the spadix about 5—6 cm. long, with the masculine inflorescence about  $1\frac{1}{2} \times$  as long as the feminine.— All the portions of this specimen are said to be awfully stinking; the young leaves and the cataphylla are bright-pale-red.

***Homalomena alba***, HASSK., *Catal. Bog*, 57; ENGL., *Pflzrch*, LV (IV, 23 *Da*), *Arac.-Philod.-Homal.-Schism.*, 63.

A specimen gathered bij C. A. BACKER near *Batavia* is distinguished in having the lamina large,  $60 \times 45$  cm., the spathe 9— $9\frac{1}{2}$  cm. long, greenish-white, the spadix  $9\frac{1}{2}$ —10 cm. long, on a stalk  $\pm 5$  mm. long, the feminine inflorescence cylindrical,  $2\frac{3}{4}$  cm. long, the ovaries more or less oval, yellow-white, the staminodes obconical-clavate, very thick, long-stalked, the masculine inflorescence about twice as long as the feminine.— This is perhaps hardly more than a form or variety of the preceding. In dried state BACKER's specimens of both species are not distinguishable from each other.

**Homalomena cordata** (HOULT.), SCHOTT, Melet., 1, 20; ENGL., Pflzrch, LV (IV, 23 *Da*), Arac.-Philod.-Homal.-Schism., 57, fig. 35; *Dracontium cordatum*, HOULT., Handl., XI, 200, tab. LXXI, fig. 2.

VERSTEEG's No. 1072 from *New Guinea*, referred by ENGLER to this species, is distinguished from ENGLER's diagnosis and figure in having the petiole sheathing  $\frac{1}{7}$  its length, the peduncle 4 times as long as the spathe, the spathe white, the spadix slender, at best 3 mm. thick, the ovaries cylindrical, the staminodes obconical-clavate in the upper half, rather truncate at the apex.

ENGLER gives no detail figure of the masculine flowers. Two specimens from *Java* (*Batavia*, probably cultivated) and the *Moluccas* (*Amboina*, BOERLAGE No. 360), both determined by ENGLER, have the stamens as in fig. 35 *D* (upper portion), i. e. with a thick, angular connective covering the thecae.

**Homalomena gigantea**, ENGL., Pflzrch, LV (IV, 23 *Da*), Arac.-Philod.-Homal.-Schism., 62, fig. 37—38.

This Bornean species has been founded on 2 specimens cultivated in the Buitenzorg Gardens under Nos. 34 and 103. — No. 34, from *Borneo*, after which fig. 38 has probably been taken, is now dead. — No. 103, from an unknown habitat, does not agree with the diagnosis and the fig. 38 quoted above; it is distinguished by the following characters: Fully developed (but not too old) leaves with the petiole to 75 cm. long, green, with copious relatively short, fine, longitudinal, purplish streaks, sheathing  $\pm \frac{1}{4}$  its length, the sheath red-margined, becoming green towards the line of attachment; lamina  $\pm 27\frac{1}{2}$ —45  $\times$  17 $\frac{1}{2}$ —30 cm., narrowly pale-red-margined, with the basal lobes not or hardly extrorse (as in *H. aromatica* SCHOTT, ENGL., l. c., fig. 36, highest leaf), the primary veins  $\pm 7$ —9 on a side (including the basal ones); spadix 8—9 cm. long when flowering larger when fruiting; staminodes with the apex obconical-clavate.

**Homalomena Treubii**, ENGL., Pflzrch, LV (IV, 23 *Da*), Arac.-Philod.-Homal.-Schism., 70.

HALLIER's original No. 2622, on which ENGLER based this species, is distinguished by the following characters not mentioned in the diagnosis: Lamina relatively suddenly acutely acuminate and apiculate; primary veins distinctly stouter than the secondary and tertiary ones; peduncle more than  $7\frac{1}{2}$ —10 cm. long; spathe with the tube ovoideo-ellipsoidal, the lamina conoideo-cylindrical, 5—7 cm. long,  $\frac{1}{2}$ — $\frac{3}{4}$  diam., subulate-acuminate.

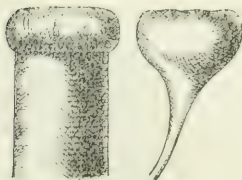


Fig. u.

ENGLER gives no figure of this species. Regarding the spadix he writes „inflorescentia feminea staminodiis destituta”. I have examined a young

spadix of the original specimen on which ENGLER based this species and I have found that each pistil was provided with stalked, very thick, obconical staminode (fig. u); the masculine flowers are 4–6-angular, consisting mostly of 4 stamens with a thick connective hiding the thecae (fig. u').



Fig. u'.

**Homalomena Nieuwenhuisii**, ENGL., MS. in Herb. Bog.; *H. Wigmanii*, ENGL., in Hort. Bog.

*Euhomalomena*. — Herba relative parva. Foliorum petiolus 10–12½ cm. longus, ruber, ± usque ad mediam partem vaginatus; vagina rubra; lamina in sicco herbacea, in vivo supra obscure vel laete viridis, rubro-iridescens, subtus sordide rubra vel viridis et rubra, oblonga, 15–22½ × 7½–12 cm., inaequilatera, latere altero margine subrecta et costae parallela, latere altero margine late rotundata, basi truncata vel leviter emarginata, imo brevissime cuneata, apice rotundato-triangularis et subabrupte acuminata, minute et graciliter apiculata; venae primariae 5–7 utrinque, apicem versus valde sursum curvae et margini parallelae, basi decurrentes, venis secundariis, tertiariis et quaternariis numerosis interpositis, basales parte inferiore horizontales vel patentes, costales ascendentes. Cataphylla . . . . . Pedunculi rubri, 7½–10 cm. longi. Spatha 5–8 cm. longa, viridulo-alba, primum convoluta, postremo apice antice aperta; tubus ellipsoideus, ± 1 cm. amplus, demum amplior; lamina cylindrica vel conoideo-cylindrica, longitudine tubum aequante, ± ½ cm.

ampla, demum amplior, acuminata. Spadix stipite incluso 4–7 cm. longus, floribus omnibus arcte contiguis; inflorescentia feminea cylindrica, 1½–2½ cm. longa, usque 6 mm. crassa, pallide viridis; ovaria breviter cylindrica (fig. v), apice truncato-rotundata, in specimine examinato 3-locularia; stigma discoideum, rotundum, crassum, latitudinem ovarii aequans; staminodia . . . . . ; inflorescentia mascula quam



feminea ± 1¼-plo longior, 2¼–3½ cm. longa, usque 4 mm. crassa, pallide flavido-grisea, a feminea parte neutrali, brevissime conoideo-cylindrica vel cylindrica, alba, floribus sterilibus formata, usque 4–6 mm. crassa separata; flores masculi 3–5-andri; stamina connectivo crasso thecas occultante (fig. v').



Fig. v'.

In the four spadices examined I could not find any trace of a staminode. — I can nowhere find a diagnosis of this species which up till now has been cultivated in the Buitenzorg Gardens under the name of *H. Wigmanii* ENGL. — Dried material of the very



Fig. v.

same plant, however, occurring in the Buitenzorg Herbarium, is provided with a label bearing a name dedicated to the discoverer of the plant, written by ENGLER himself. The description of the habit and dimensions is taken partly from the dried material, partly from recently gathered alcohol material, of the colours partly from the living plant, partly from a water-colour by the late J. W. HUIJSMANS.

*Borneo* (NIEUWENHUIJS No. 1882).

**Homalomena submarginata**, V. A. V. R.; *H. aromatica*, ENGL. (non SCHOTT), MS. in Hort. Bog.

*Euhomalomena*. — Caudex usque  $\pm$  25 cm. longus. Foliorum petiolus quam lamina paullo longior vel brevior, 15—25 cm. longus, viridis, basi ad  $\frac{1}{3}$ — $\frac{1}{2}$  partem vaginatus, antice apicem versus leviter applanatus; vagina persistens, margine brunneo-scarioso, deciduo; lamina late ovata,  $17\frac{1}{2}$ — $20 \times 12\frac{1}{2}$ — $17\frac{1}{2}$  cm., supra saturate viridis, subtus pallide viridis, apicem breviter acuminatum versus linea excurva angustata, basi truncata vel potius leviter cordato-emarginata; venae primariae utrinque 8—10 (plerumque 9), subtus prominentes, apicem versus sursum curvae, basales horizontales, costales sensim ascendentes; venae secundariae tertiariaeque graciles. Pedunculus 7—8 cm. longus, viridis. Spatha  $\pm$  7 cm. longa; tubus leviter oblique ellipsoideus,  $3\frac{1}{2}$  cm. longus,  $1\frac{1}{2}$  cm. amplus, viridis; lamina convoluta conoideo-cylindracea,  $3\frac{1}{2}$  cm. longa,  $\frac{3}{4}$  cm. ampla, demum antice oblique aperta, viridi-flavida, breviter acuminata vel acuta. Spadix stipite  $\frac{1}{4}$ — $\frac{1}{2}$  cm. longo suffultus; inflorescentia feminea cylindracea, 2— $2\frac{1}{2}$  cm. longa,  $\frac{3}{4}$  cm. crassa; ovaria oblonga, primum pallide viridia, demum pallide brunneo-flavida, 3-locularia, multi-ovulata; stigma sessile, crasse discoideum, latum, primum pallide brunneo-griseum, demum brunneo-flavidum; staminodia adsunt, pistilla aequantia, crasse capitata, alba, graciliter stipitata; inflorescentia mascula a feminea interstitio  $\frac{1}{4}$  cm. longo, organis neutris, paucis, subsessilibus, crasse capitato-clavatis, albis vel sordide albis sparse obsesso separata; inflorescentia mascula conoideo-cylindracea,  $3\frac{1}{2}$  cm. longa, basi  $\frac{1}{2}$  cm. crassa, pallide grisea vel sordide albida, apice subacuta; flores masculi 3—4-andri; antherae thecis sub connectivo crasso, apice truncato absconditis.

Near *H. schismatoglottoides* ENGL. — The description is taken from a living specimen cultivated in the Buitenzorg Gardens, flowering May 1920.

*Habitat unknown, probably Malayan.*

**Homalomena Miqueliana**, SCHOTT, in Ann. Mus. Bot. L. B., I, 120; ENGL., Pflzrch, LV (IV, 23 *Da*), Arac.-Philod.-Homal.-Schism., 69, fig. 44.

HALLER's No. 1465, mentioned by ENGLER, differs from the diagnosis given in having the lamina oblanceolate, 25—40  $\times$  4—8, broadest above the middle, the base sometimes acute, generally broadly rotundate-cuneate, suddenly shortly acuminate, the peduncle to 25 cm. long. — Figure 44 is incorrect.

**Homalomena propinqua**, SCHOTT, in Ann. Mus. Bot. L. B., I, 280; ENGL., Pflzrch, LV (IV, 23 Da), Arac.-Philod.-Homal.-Schism., 72, fig. 47; *H. subtriangularis*, ENGL. (includ. var. *major*, ENGL.), MS. in Herb. Bog.

HALLIER's No. 1356 (*H. subtriangularis*, ENGL., var. *major*), mentioned in ENGLER's monograph quoted above, differs from the diagnosis given in having the petiole 10–25 cm. long, sheathing  $\frac{1}{3}$  to nearly  $\frac{1}{2}$  its length, the lamina 10–20  $\times$  5–7 $\frac{1}{2}$  cm., triangular-subhastate to -subsagittate; the staminodes, which are very caducous and only obteable in very young material, have the filiform basal portion shorter, the much thickened apical portion consequently larger, globose to obconical-clavate; the stamens have the anthers not close the apex of the connective but close to the base, with a more or less narrow nudate space between their apex and the apex of the connective (fig. w.).

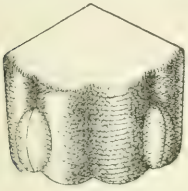


Fig. w.

HALLIER's No. 1391 (*H. subtriangularis*, ENGL.), not mentioned by ENGLER, is a smaller form of this, approaching *H. paludosa* HK. F. — A specimen from Java (*Buitenzorg, Tjampea, PAIDAN*), cultivated in the Buitenzorg Gardens, differs in having the lamina commonly truly sagittate, sometimes subhastate, rarely triangular-cordate, mostly twice as long as broad, sometimes proportionally shorter and broader, with the thecae separated from the apex of the connective by a broad nudate space. (fig. w'.)

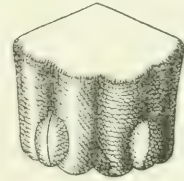


Fig. w'.

A specimen gathered in Java (*Mt. Tjipoetih, near Buitenzorg*) by R. C. BAKHUIZEN VAN DEN BRINK, is distinguished in having the leaves with petiole to 80 cm. long, the lamina to 45  $\times$  30 cm., and the peduncle to 20 cm. long.

**Homalomena Raapii**, ENGL., Pflzrch, LV (IV, 23 Da), Arac.-Philod.-Homal.-Schism., 73, fig. 49.

RAAP's No. 235, occurring in the Buitenzorg Herbarium, on which ENGLER based his original diagnosis, has the staminodes very thick-obconical-clavate on a slender stalk not much longer than the apical portion. — ENGLER says and draws „Staminodia filiformia, apice paulum incrassata“, but in reality the apex of the staminodes is so much thickened that, when seen under the lens by 60 times magnifying power, it rivals the dimensions of a billiard-ball crowning a darning-needle.

**Homalomena sagittifolia**, JUNGH., in Herb. Lugd. Bat. ex SCHOTT, Prod., 311; HK. F., Flor. Brit. Ind., VI, 531; ENGL., Pflzrch, LV (IV, 23 Da), Arac.-Philod.-Homal.-Schism., 73, fig. 48.

**Var. sumatrana:** Dimensiones omnes minores; foliorum petiolus  $22\frac{1}{2}$ — $27\frac{1}{2}$  cm. longus, usque ad  $\frac{1}{2}$  longitudinis vel ultra vaginatus; lamina  $12$ — $20 \times 6$ — $12$  cm.; venae primariae  $7$ — $9$  utrinque; pedunculi  $7\frac{1}{2}$ — $10$  cm. longi; spatha quam spadix paullo longior vel paullo brevior et angustior; staminodia apice crasse capitato-clavata.

The colour of the spathe is not mentioned on the field label but it is (according to the collector's information) probably green. — In forest; alt.  $600$ — $1000$  m.

*Sumatra* (H. A. B. BÜNNEMEIJER, *Ophir*, *Taloe* No. 129, 10 April 1917 *Loeboeq Sikaping*, *Boekit Kaboeng* No. 1220, 22 June 1917).

**Philodendron gloriosum**, ANDRÉ, in *Ill. Hort.*, 194, tab. 262; ENGL. & KRAUSE, in *Pflzrch*, LV (IV, 23 *Db*), *Arac.-Philod.-Phil.*, 104.

Plants cultivated in the Buitenzorg and Tjibodas Gardens under the name of *Ph. gloriosum* ANDRÉ and *Ph. imperiale* SCHOTT are quite indentic; they have the caudex and leaves agreeing very well with the incomplete diagnosis of this species given by ENGLER and KRAUSE. Specimens of both gardens, having flowered August 1920, prove that this species belongs to the section *Polyspermium* and are distinguished as follows: Caudex relatively short-creeping, with the internodes subsemiterete, i. e. rounded on the lower side, nearly flattened (slightly convex) and subacutely 2-marginate on the upper side,  $3$ — $6$  cm. long,  $1\frac{1}{2}$ — $3$  cm. thick, green, with the cataphylla red or rosy when young, not keeled. Leaves with the petiole  $20$ — $80$  cm. long, subterete in the lower part, subsemiterete and acutely 2-marginate in the upper part, when young pale-green, reddish at the apex, at length dark-green, provided with very copious fine, short, interrupted, slightly elevated, longitudinal, pale-green (nearly white) stripes; lamina firm-herbaceous, cordate-ovate,  $15$ — $50 \times 12\frac{1}{2}$ — $35$  cm., narrowly red- or rosy-margined, the upper surface when young emerald-green, at length saturate-green, opaque-velutinous, copiously pale-punctulate especially along the reddish marginal stripe, the under surface when young pale-rosy-green, at length emerald-green, the antical lobe subdeltoid, to  $35 \times 35$  cm., narrowed from the base with an extrorsely curved line towards the very shortly acuminate apex, the postical lobes subsemiorbicular or subsemireniform, to  $15 \times 17\frac{1}{2}$  cm., with the inner edges whether or not slightly imbricating, separated at the base by an acute sinus; costa and primary veins above when young pale-rosy, at length pale-green, with numerous much paler, very short, longitudinal stripes, beneath very prominent, when young rosy, at length olive-green; primary veins  $6$ — $10$  on a side, upcurved towards the apex, the costal ones spreading, the basal ones radiating, shortly connected and not or hardly denudate at the base; secondary, tertiary and quaternary veins oblique to the primary ones, much finer, rather dark, when young rosy, at length green. Peduncle terete,  $\pm 17\frac{1}{2}$  cm. long,  $1$ — $1\frac{1}{2}$  cm. thick, green or red-green, provided with many elevated, relatively

stout, short, longitudinal, white or pale-rosy stripes, especially towards and at the carmine-red, obconically thickened apex. Spathe convolute; tube obliquely oblong, 5—6 cm. long by  $2\frac{1}{2}$ —3 cm. diam., emerald-green, olivaceous or red-green, red-margined, provided with copious very short, longitudinal, partly pale-green, partly pale-rosy stripes; lamina ellipsoidal-oblong, 8—10 cm. long by  $\pm 3$  cm. diam. at the middle, narrowed towards the truncate base and the rather suddenly, shortly acuminate apex, rosy, carmine or purple, red-margined, copiously and very shortly rosy-striolate. Spadix on a thick, oblique stalk about 3 mm. long; feminine inflorescence cylindrical, straight or slightly curved,  $2\frac{1}{2}$ —3 cm. long,  $1\frac{1}{2}$ —2 cm. thick, oblique at the base; ovaries subprismatical, 4—6-angular, very pale-green, rounded at the apex, 4(—6?)-locular, with numerous ovules arranged in each loculus in 2 central, longitudinal rows; stigma sessile, discoid, obtusely 4—6-angular, slightly 4—6-lobed, very pale-green or pale-rosy; masculine inflorescence conoid-fusiform from a slightly truncate-conoid, sterile base; sterile portion  $\pm 2$  cm. long, 2 cm. thick at the base,  $1\frac{1}{2}$  cm. thick at the apex, provided with 2—3 contiguous, broad, transversal rows of crowded, shortly subprismatical-obpyramidal, white or rosy, truncate staminodes; fertile portion  $\pm 8\frac{1}{2}$  cm. long,  $1\frac{3}{4}$  cm. thick at the middle, narrowed towards both ends, pale-green-yellow or milk- or ivory-white, the base passing gradually into the sterile portion, the apex blunt or subacute; masculine flowers 4—8-androus; stamens prismatical, about  $2\frac{1}{2} \times$  as long as thick, truncate at the apex, the thecae hidden under the thick connective.

**Piptospatha angustifolia**, ENGL., MS. in Herb. Bog.

Herba parvula, usque 25 cm. alta, caudiculo brevi, usque  $\pm 2$  cm. longo. Foliorum petiolus quam lamina brevior, 5—11 cm. longus, antice latiuscule canaliculatus; lamina rigide coriacea, glabra, lanceolata, 8—14  $\times$   $1\frac{1}{2}$ — $2\frac{1}{2}$  cm. vel forsitan longior (in omnibus foliis speciminis pars apicalis laminae brevius vel longius rupta), margine anguste recurvata, basi acuta, subdecurrens; venae primariae ut videtur paucae ( $\pm 5$  utrinque?), conspicue ascendentes, indistinctae, gracillimae, subtus vix prominentes; venae secundariae absconditae. Pedunculus gracilis, 15—20 cm longus. Spathae pars basalis persistens late obconoidea,  $\pm 1\frac{1}{3}$  cm. longa; lamina..... Spadix cylindraceus, parte basali stipitiforimi (rachis organis neutris caducis denudata?),  $\pm \frac{1}{2}$  cm. longa, ceterum  $\pm 2\frac{1}{4}$  cm. longus, 4 mm. crassus; inflorescentia feminea brevis,  $\pm \frac{1}{2}$  cm. longa; ovaria breviter oblonga, apice truncata, obtuse angulosa, stigmatate parvulo, sessili, discoideo, rotundato coronata; ovula 6—12—18, basilaria, erecta; inflorescentia mascula quam feminea  $\pm 3$ -plo longior, obtusa; antherae basem staminorum non attingentes, apice truncatae, connectivo thecas non superante.

The description is taken from a specimen determined by ENGLER, of which, however, I could not find the diagnosis.

*Borneo* (HALLIER No. 614).

**Piptospatha marginata** (ENGL.), N. E. BR., in Curt. Bot. Mag., LI, in descr. ad tab. 7410; ENGL., in Pflzrch, LV (IV, 23 *Da*), Arac.-Philod.-Homal.-Schismat., 125; *Rhynchopyle marginata*, ENGL., in BECC., Mal., I, 288, tab. XXIII, fig. 1—2; *Schismatoglottis marginata*, ENGL., in Bull. Soc. Tosc. di Ort., 298 (oldest name).

TEYSMANN's No. 16705 from *Lingga* (not *Liangga*) and No. 11540 from *Borneo*, referred both by ENGLER to this species, do not agree with the description given by ENGLER in Pflanzenreich. — No. 16705, consisting of 3 specimens, resembles too much TEYSMANN's No. 11538 from *Borneo*, referred by ENGLER to *P. elongata* N. E. BR. The plants have the leaves with the petiole distinctly shorter than the lamina; the flower is still too young and has the spadix clavate but in the said young state it was not difficult to me to settle that the ovaries are *pluri*-ovulate, i.e. with 16—20 ovules arranged along 2 opposite parietal placentae. According to ENGLER's diagnosis quoted, *P. marginata* has the leaves with the petiole distinctly longer than (to twice as long as) the lamina, and the ovaries are described as being but 2-ovulate. — No. 11540 is an undeterminable small plant having the leaves with the lamina 5—8 cm. long on a petiole 3—4 cm. long; the ripe spadix has the berries *pluri*-spermous.

#### **Raphidophora ternatensis**, V. A. V. R.

Planta usque  $\pm 8$  m. alte scandens, ramosa, ramis pendulis; rami floriferi  $\pm \frac{1}{2}$  cm. crassi, in sicco longitudinaliter rugulosi, internodiis 1—2 cm. longis. Foliorum petiolus in sicco pro ratione gracilis,  $7\frac{1}{2}$ —10 cm. longus, antice canaliculatus, nunc usque ad laminam, nunc haud ultra geniculum vaginatus; vagina membranacea, mox exsiccata, dilacerata, caduca; lamina coriacea, in sicco flaccida, lanceolata vel ovato-lanceolata,  $20$ — $30 \times 6$ — $7$  cm., levissime falcato-curvata, ad vel infra medium latissima, paullo inaequilatera, latere altero  $\pm 1\frac{1}{4}$ -plo latiore, supra obscure viridis, copiose minute albido-puncticulata, basi rotundato-cuneata, acuta, apice leviter falcata, acuminata, acute apiculata; venae laterales primariae copiosae, graciles, quam secundariae tantum paullo crassiores, ascendentes, basi patentes, apicem versus sursum curvatae; venae tertiariae gracillimae. Pedunculus  $\pm 9$  cm. longus, cataphyllo mox marcescente, dilacerato, deciduo cinctus. Spatha conoideo-cylindracea,  $\pm 12\frac{1}{2}$  cm. longa, convoluta 1 cm. ampla, apicem versus sensim longe acuminata. Spadix stipite  $\pm 6$  mm. longo suffultus, conoideo-cylindraceus,  $\pm 7\frac{1}{2}$  cm. longus,  $\frac{3}{4}$  cm. crassus, apicem subacutum versus sensim attenuatus; overia prismatica,  $\pm 2$  mm. alta, apice applanata, 1 mm. lata, 4—6-angulosa, levissime rugulosa; ovula multa; stylus angustus, brevissime cylindraceus, interdum subconoideus; stigma parvulum, rotundatum vel suboblongum.

*Ternate Island* (*Akè Bobotja*, in ravine, alt. 20 m., V. M. A. BEGUIN No. 1004, 20 October 1920; Malay name: koki).

Forma major: Dimensiones fere omnes majores. Foliorum petiolus usque  $12\frac{1}{2}$  cm. longus; lamina oblonga,  $\pm 20$ — $22 \times 8\frac{1}{2}$ — $9\frac{1}{2}$  cm., basi



latius rotundato-cuneata, apice sensim ad abrupte breviter acuminata. Pedunculus usque 12 cm. longus. Spatha usque 22 cm. longa,  $1\frac{1}{2}$  cm ampla, apice sensim ad abrupte acuminata. Spadix stipite usque 2 cm. longo suffultus, usque 15 cm. longus et 1 mm. crassus; ovaria paullo longiora. — *Ternate Island* (V. M. A. BEGUIN No. 1141; Malay name: koki - Perhaps a more developed form of No. 1004 only).

**Raphidophora octovulata**, V. A. V. R.

Planta suffruticosa, florifera fructiferaque in juventute erecta vel e basi decumbente, radicante ascendens,  $\pm$  50 cm. alta, postremo forsitan scandens, caudice  $\pm$  2 cm. crasso, internodiis inferioribus  $\pm$   $2\frac{1}{2}$  cm., superioribus  $\pm$  1 cm. longis. Foliorum petiolus 10–15 cm. longus, ultra medium vaginatus, antice apicem versus canaliculatus; vagina in vivo coriacea, in sicco herbacea, interdum geniculum  $\pm$   $\frac{3}{4}$ –1 cm. longum fere attingens, persistens; lamina in vivo coriacea, viridis, subtus quam supra pallidior, in sicco subcoriacea, lanceolata, 12–21  $\times$  3– $6\frac{1}{2}$  cm., ad, supra vel infra medium latissima, utrinque angustata et acuta vel plus minusve acuminata, breviter et graciliter apiculata; costa glabra, subtus prominens; venae primariae numerosae, cum venis secundariis paullo gracilioribus regulariter alternantes, in vivo absconditae, in sicco subtus paullo prominentes, venis tertiariis gracilioribus

interpositis, ascendentes, basi decurrentes, apicem versus sursum curvae. Pedunculi elongati, 20– $22\frac{1}{2}$  cm. longi, teretes. Spatha juvenilis acuminato-fusiformis, arcte convoluta, viridis, demum aperta et latissime navicularis, quam longa latior, antice conspecta transverse ovalis,  $\pm$   $4\frac{1}{2}$  cm. longa et  $6\frac{1}{2}$  cm. lata, breviter apiculata, intus albida, extus pallide viridis, marginem versus pallescens, albescens, mox decidens. Spadix stipite  $\pm$   $\frac{1}{2}$  cm. longo suffultus, subcylindraceus, florifer  $\pm$  5 cm. longus et 9 mm. crassus, apicem sterilem obtusum et basin versus paullo attenuatus, pallide citrinus, fructifer  $\pm$   $6\frac{1}{2}$  cm. longus et  $1\frac{3}{4}$  cm. crassus, apice sterili non incrassatus, aurantiacus; ovaria subobpyramidata,  $\pm$  3 mm. alta, deorsum latera-

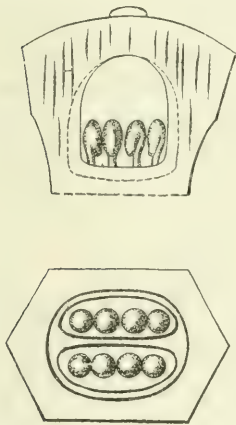


Fig. x.

liter compressa, apice subtruncata, 6-angulosa,  $\pm$  3 mm. crassa, lamellis 2 angustis, longitudinalibus, oppositis, in placentam basilarem continuatis imperfecte 2-locularia (fig. x); ovula 8, basilaria, 2-seriata; stigma parvum, rotundatum, breviter oblongum, vix elevatum, sordide album, mox fuscenscens; baccae ovariis similes sed majores; semina 8, oblonga, recta, albuminosa (fig. x'); embryo rectus.

The stamens are placed on opposite sides of the ovaries so as to form conspicuously flexuose, ascending,

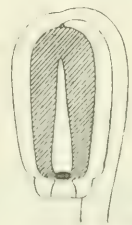


Fig. x'

white spirals round about the just flowering spadix. — The description is taken from a living specimen cultivated in the Buitenzorg Gardens, flowering and fruiting December 1919 and January 1920.

*Habitat unknown.*

**Raphidophora pilosula**, v. A. v. R., this Bull., 1<sup>5</sup>, 1920, 386.

Scandent. Petiole with the knee flattened, slightly canaliculate and narrowly 2-cristate on the anterior side; lamina above emerald-green, beneath paler, when young glaucous, when dry slightly asperulous by numerous very minute and densely crowded points, except on the primary veins; costa beneath when fresh apparently smooth, when dry apparently provided among the hairs with a very thin layer of tomentum.<sup>1)</sup>

The specimen on which I founded this species has originally been cultivated in the Buitenzorg Gardens under the name of *R. oblongifolia* SCHOTT, which, according to the diagnosis given by ENGLER and KRAUSE, is distinguished also in having the spadix provided with a stalk about 1 cm. long, whilst in this species the spadix is sessile. — ENGLER and KRAUSE's fig. 10 C (Pflzrch, XXXVII, IV 23 B), however, shows (erroneously?) a sessile spadix.

A fruiting plant gathered in *Sumatra (Deli, Bandar-baroe)*, J. A. LÖRZING No. 5913, 11 August. 1918, primeval forest, alt.  $\pm$  1000 m.) agrees very well with this species. It is distinguished in having the caudex climbing to  $\pm$  15 m. high, the petiole and lamina of the fully developed leaves longer, to 35 cm long, the base somewhat more acute, the primary veins more numerous, 20—30 on a side, the fructiferous spadix 12—14 cm. long, 2 cm. thick, apparently stalked (i.e. the spiral-shaped line of insertion of the base of the spathe is rather open), the berries pauci ( $\pm$  2—6)-spermous.

**Raphidophora Hallieri**, v. A. v. R. this Bull., 1<sup>5</sup>, 1920, 385.

The leaves of this species agree nearly exactly with those of LÖRZING's Sumatran plant mentioned under *R. pilosula* v. A. v. R. but I could not find a single hair in the costal pseudo-tomentum which, moreover, is less distinct. — *R. puberula* ENGL, which is unknown to me, seems at any rate nearly allied with this and the preceding species; it is, however, described as having all the veins slender, whilst in this and the preceding species the primary and secondary veins are distinctly different.

**Raphidophora scaberula**, v. A. v. R.

Planta scandens, usque 3 m. vel plus alta. Foliorum petiolus  $\pm$  47 $\frac{1}{2}$  cm. longus, antice canaliculatus et fere usque ad medium geniculi 3 cm. longi

<sup>1)</sup> This spurious tomentum is caused by the presence of innumerable very minute capitate-clavate papillae that can be seen by high magnifying power only; in the dried plant these papillae become somewhat contracted, and more distinct when seen under a common lens, then giving the costa beneath a very thinly tomentose aspect.

vaginatus, perdense sed minutissime puncticulato-scaberulus; vagina caduca; lamina in sicco coriacea, lanceolata, in specimine  $52 \times 16$  cm., circiter in medio latissima, inaequilatera, uno latere  $\pm 1\frac{1}{4}$ -plo latiore, basi acute rotundato cuneata, apice acuta; costa subtus decidue, breviter puberula, inter pilos haud vel vix spurie tomentosa <sup>1)</sup>; venae in sicco utrinque sed subtus distinctius prominentes, patentes, leviter arcuato-ascendentes, apice sursum curvae; venae primariae  $\pm 22$  utrinque, distinctae, venis secundariis 1 et tertiariis 4—6 sensim gracilioribus, venulis transversalibus gracillimis unitis interpositis. Pedunculus  $7\frac{1}{2}$ —10 em. longus. Spatha crasse coriacea, 15 cm. longa, acuta. Spadix cylindraceus, florifer brevissime stipitatus, potius subsessilis,  $12\frac{1}{2}$  cm. longus, in sicco  $1\frac{3}{4}$  cm. crassus, basi obliquus, apice late rotundatus, fructifer paullo longius stipitatus, usque  $\pm 17\frac{1}{2}$  cm. longus, paullo crassior; ovaria prismatica,  $\pm 4$  mm. longa,  $\frac{1}{4}$  parte apicali incrassata, 4—6-angulosa,  $\pm 1\frac{1}{2}$  mm. crassa,  $\pm$  truncata, levissime radiato-rugulosa; ovula copiosa, ad placentas 2 oppositas disposita; stylus brevissime cylindraceus; stigma rotundato-discoideum; planum, quam stylus non latius. (Fig. y).



Fig. y.

*Sumatra* (Deli, Betimoes Valley, primeval forest, alt.  $\pm 500$  m., J. A. LÖRZING No. 5563, 20 March 1918).

#### **Raphidophora jaculiformis**, v. A. v. R.

Caudex subteres, internodiis  $\frac{1}{2}$ — $\frac{3}{4}$  cm. longis,  $\frac{3}{4}$ —1 cm. crassis. Foliorum petiolus  $12\frac{1}{2}$ — $17\frac{1}{2}$  cm. longus, usque ad geniculum  $\frac{1}{2}$ —1 cm. longum vaginatus; vagina crasse scariosa, a basi apicem versus sensim angustata, persistens; lamina in sicco coriacea, lanceolata,  $17\frac{1}{2}$ — $25 \times 4\frac{1}{2}$ — $5\frac{1}{2}$  cm., infra medium latissima, inaequilatera, uno latere  $1\frac{1}{4}$ — $1\frac{1}{2}$ -plo latiore, basi oblique rotundato-cuneata, apice sensim angustata, acuminata, acumine saepe subabrupte falcato-curvato, breviter apiculato; venae in sicco utrinque prominentes, supra subaequales, subtus distincte diversae; venae primariae 10—15 utrinque, plus minusve ascendentes, apicem versus sursum curvae, venis secundariis tertiariisque gracilioribus venulis transversalibus gracillimis unitis interpositis. Pedunculus  $\pm 7\frac{1}{2}$  cm. longus. Spatha coriacea, cylindraceo-navicularis,  $\pm 5\frac{1}{2}$  cm. longa, hians, acuta, caduca. Spadix sessilis, cylindraceus,  $3\frac{1}{4}$ — $3\frac{3}{4}$  cm. longus,  $\frac{3}{4}$  cm. crassus, apice rotundatus; ovaria  $\pm 3$  mm. longa, apice truncata,  $\pm 1$  mm. crassa, ovulis multis, a basi usque ad apicem placentarum dispositis; stylus brevis, graciliter cylindraceus; stigma parvum.

*Borneo* (JAHERI).

**Raphidophora foraminifera**, ENGL., in Pflzrch, XXXVII (IV, 23 B). 45, fig. 19; *Epipremnum foraminiferum*, ENGL., Bot. Jahrb., XXV, 11.

A plant from *Sumatra* (Deli, Sibolangit, J. A. LÖRZING No. 5521), flowering and fruiting February 1918, which is undoubtedly this species,

<sup>1)</sup> See my information under *R. pilosula* v. A. v. R.

has the leaves agreeing exactly with ENGLER's incomplete diagnosis except in some of the dimensions, which may be due to different circumstances. The plant is distinguished as follows: Caudex to 15—20 m. high climbing, with the internodes  $\pm 1$  cm. thick. Leaves with the petiole to 30—40 cm. long, canaliculate and sheathing quite to the knee, dorsally densely but very minutely punctulate, when young perhaps minutely puberulous; sheath membranaceous, soon dilacerated, caducous; knee to  $\pm 2$  cm. long; lamina flaccid-coriaceous, oblong, to  $25-45 \times 12\frac{1}{2}-20$  cm., above dark-green, beneath pale-green, more or less (not very) unequal-sided, the base oblique, rounded or rotundate-cuneate, the apex more or less suddenly and very shortly, acutely acuminate; costa above flat or somewhat depressed, beneath very prominent, densely, minutely, deciduously puberulous (when dry not thinly tomentose among the hairs <sup>1)</sup>, of the adult plant flanked on each side with one to several suborbicular, oblong or deltoid-oblong holes  $\frac{1}{2}-3$  cm. long, placed between the primary veins; primary veins 20—30 on a side, spreading, upcurved towards the apex, prominent beneath, separated by  $\pm 3$  finer secondary veins united by still finer transversal veinlets. Peduncle



Fig. z.

$7\frac{1}{2}-10$  cm. long. Spathe thick, cylindrical, to  $\pm 15$  cm. long,  $1\frac{1}{2}-2$  cm. diam., when young pale-green, afterwards yellowish, acute. Spadix very short-stalked, cylindrical, floriferous  $7\frac{1}{2}-10$  cm. long, pale-yellow, fructiferous to  $12\frac{1}{2}$  cm. long,  $2\frac{1}{2}$  cm. thick, bluntly rounded at the apex; ovaries prismatical, the base laterally compressed, the upper  $\frac{1}{3}$  thickened, semiglobose-pyramidal, 6-angular, the apex rather rounded, attenuated suddenly into a very short, thick style (fig. z); ovules numerous, arranged in 2 rows along 2 opposite parietal placentae; stigma discoid, round, somewhat broader than the style, flat, with a small central depression.

A non-flowering plant, up till now cultivated in the Buitenzorg Gardens under the name of *E. foraminiferum* ENGL., probably determined by ENGLER, has the leaves agreeing exactly with LÖRZING'S Sumatran plant.

**Raphidophora celatocaulis**, v. A. v. R., this Bull., I<sup>5</sup>, 382.

Lamina of the fully developed plant with the segments to 15 or more on a side. Peduncle  $17\frac{1}{2}-20$  cm. long. Spathe thick-fleshy, when young cylindrical, convolute, acuminate, green, of the flowering spadix quite open, very pale and soon becoming greyish on the inner side, bright-yellow on the outer side, soon falling. Spadix  $12\frac{1}{2}-20$  cm. long,  $2-2\frac{1}{2}$  cm. thick, pale- or dirty-grey-yellow, soon becoming green; stigma black or black-brown, longitudinally grooved.

<sup>1)</sup> See my information under *R. pilosula* v. A. v. R.

This completion is taken from the same specimen cultivated in the Buitenzorg Gardens, having flowered afresh December 1919 and January 1920 — *Pothos celatocaulis* N. E. Br. is said to have been discovered in *North Borneo*.

**Schismatoglottis silvestris**, V. A. V. R.

Herba 25—40 cm. alta, caudiculo usque  $\pm$  15 cm. longo,  $\frac{1}{2}$  cm. crasso. Foliorum petiolus 5—15 cm. longus, usque ad medium vel brevius decidue membranaceo-vaginatus, parte superiore antice cristis 2 anguste aliformibus, oppositis munitus, ceterum dense et minutissime glanduloso-puberulus; lamina in sicco tenuiter herbacea, submembranacea, elliptica vel ovata, ad vel infra medium latissima,  $7\frac{1}{2}$  —  $15 \times 4$  — 7 cm., supra obscura, immaculata, subtus pallidior, apice obtusiuscula, basi rotundato-cuneata vel late rotundata; costa venaeque primariae subtus dense et minutissime glanduloso-puberulae; venae primariae  $\pm$  8—10 utrinque, ascendentes vel basilares subhorizontales, sursum curvae, apice vena collectiva submarginali unitae; venae secundariae tertiariaeque indistinctae, graciles. Pedunculus 2—4 cm. longus. Spatha viridis vel pallide viridis; tubus obovoideo-fusififormis,  $3\frac{1}{2}$  cm. longus; lamina convoluta conoideo-cylindracea,  $3\frac{1}{2}$  cm. longa, acuta. Spadix  $4\frac{3}{4}$ —5 cm. longus, albus vel pallide griseus; inflorescentia feminea cylindracea,  $1\frac{1}{2}$  cm. longa,  $\frac{1}{2}$  cm. crassa, basi obliqua, basi et apice staminodiis breviter obconoideis vel clavatis munita; ovaria conoideo-ovoidea; stigma sessile, crasse pulvinatum, rotundum; staminodia inter ovaria non vidi; inflorescentia mascula a feminea interstitio  $1\frac{1}{2}$  cm. longo, organis neutris sparsis, minute capitatis vel applanatis munito separata, cylindracea,  $1\frac{3}{4}$ —2 cm. longa, 3 mm. crassa, parte apicali sterili brevissima, breviter conoidea vel semiglobosa,  $1\frac{1}{2}$ —2 mm. longa; stamina parva; partis apicalis sterilis staminodia breviter obconoideo-clavata, apice rotundato-applanata.

Distinct by the very short sterile apical portion of the masculine inflorescence.

*Sumatra* (Mt. Malintang, in forest, alt. 1200—1300 m., H. A. B. BÜNNEMEIJER Nos. 3813, 3850, 22 July 1918).

**Var. subcordata**: A forma typica differt dimensionibus foliorum aequalibus vel maioribus; petiolus usque  $22\frac{1}{2}$  cm. longus; lamina quam in typica saepe pro ratione latior,  $8\frac{1}{2}$  —  $15 \times 5\frac{1}{2}$  — 9 cm., basi paullo emarginata vel subcordata. Spatha cum spadice brevior, inflorescentiis cum interstitio neutro (apice sterili inflorescentiae masculae excepto) pro ratione abbreviatis.

*Sumatra* (Mt. Talamau, in forest, alt. 500—900 m., H. A. BÜNNEMEIJER Nos. 387, 434, 24 — 25 April 1917).

**Schismatoglottis asperata**, ENGL., in Pflzrech, LV (IV, 23 *Da*), 105.

**Var. albomaculata**, ENGL., l. c. 106; *Sch. crispata*, HK. F., in Bot. Mag., 6578. TEYSMANN's No. 11545 (not 1151), mentioned in ENGLER's diagnosis, has the petiole provided with 2 opposite, undulate, wing-shaped crests, and the very short setae placed in clusters on minute tuberculiform elevations.

**Schismatoglottis puberulipes**, v. A. v. R.

Herba parva, usque  $\pm$  15 cm. alta, caudiculo epigaeo, brevi. Foliolorum petiolus  $2\frac{1}{2}$ –6 cm. longus, viridis, cum vagina (extus) et costa venisque primariis (subtus) dense et breviter glanduloso-puberulus, postremo hic illic glabrescens, dimidia parte basilari vel longius aut brevius vaginata, inter vaginam et laminam teres, antice cristis decoloratis, angustis, aliformibus 2-marginata; vagina pallide viridis, persistens; lamina herbacea, ovalis, 5–10  $\times$  3–6 $\frac{1}{2}$  cm. vel paullo major, medio latissima, viridis, subtus quam supra pallidior, apice rotundata, specie acumine brevissimo, mox decedente munita, basi breviter sed distincte cordata, lobis  $\frac{1}{2}$ –1 cm. longis, rotundatis, hamato-incurvatis et paullo imbricatis; costa subtus prominens; venae primariae 12–18 utrinque, plus minus horizontales, apicem versus sursum curvae, subtus prominentes, hic illic vena secundaria, paullo prominenti, ceterum venis tertiariis quaternariisque copiosis, gracilibus, subparallelis interpositis. Pedunculi breves,  $\frac{3}{4}$  cm. longi, pallide virides. Spatha  $\pm$  3 cm. longa, demum longior, infra medium paullo constricta, viridis, demum pallide viridis, venis paullo obscurioribus, longitudinalibus ornata, tubo obovoideo, primum 1 cm. longo et subaequiamplo, lamina primum acute ovoidea, 2 cm. longa, convoluta, clausa vel vix aperta, demum irregulariter decidua. Spadix sessilis, florifer  $2\frac{1}{2}$  cm. longus; inflorescentia feminea subconoidea, 1 cm. longa, basi subaequicrassa, obliqua, organis neutris 1–2-seriatis, pallide brunneo-flavidis vel albidis, obpyramidato-conoideis, apice applanatis, 4–6-angulosis cincta; ovaria obovoidea, pallide viridia, supra conspecta obtuse 4–6-angulosa; stigma rotundum, discoideum, subsessile, albidum; inflorescentia mascula a feminea interstitio brevi,  $\frac{1}{4}$  cm. longo, organis neutris contiguis, albis, longiusculis, anguste obconoideis, apice applanatis, paullo incrassatis munito separata, ceterum suboblongo-ellipsoidea,  $1\frac{1}{4}$  cm. longa, medio  $\frac{3}{4}$  cm. crassa, dimidia parte inferiore fertilis, alba, dimidia parte superiore sterilis, pallide flava, apice obtuse rotundata; antherae filamenta lata et aequicrassa subaequantes; thecae obtuse subobconoideo-prismaticae, apice applanatae, supra conspectae anguloso-hamato-reniformes, connectivo non superatae; partis apicalis sterilis staminodia anguste obconoideo-pyramidata, obtuse 4–6-angulosa, apice rotundato-truncata.

The description is taken from specimens cultivated in the Buitenzorg Gardens, flowering December 1919, January to September 1920. Other particulars unknown.

*Borneo.*

**Schismatoglottis rotundifolia**, ENGL., in Pflzrch., LV (IV, 23 *Da*) Arac-Philod.-Homal.-Schism., 122.

Plants cultivated in the Buitenzorg Gardens under name of *Sch. rotundifolia* ENGL. are distinguished from ENGLER's description by the following characters: Petiole 5—7 cm. long, sheathing  $\frac{1}{5}$ — $\frac{2}{5}$  its length, when young red, adult viridescent, the ventral side narrowly 2-marginate, for the rest densely and very minutely glandular-puberulous, as are the costa and primary veins beneath; lamina broadly cordate-ovate,  $5\frac{1}{2}$ — $7\frac{1}{2}$   $\times$  4—6 cm., blunt, deciduously apiculate, the basal lobes semiorbicular,  $\frac{3}{4}$ — $1\frac{1}{2}$   $\times$   $1\frac{1}{2}$ — $2\frac{1}{2}$  cm., separated by a very narrow sinus with an acute, shortly linear-subulate corner; upper surface dark-green, opaque-velutinous by crowded, very minute, rounded papillae (as in *Homalomena humilis* HK. F., includ. var. *velutina*) and provided with numerous scattered, white points; under surface pale-green; primary lateral veins less numerous, 5—7 on a side. — Spathe and spadix unknown.

**Schismatoglottis batoensis**, ENGL., in Pflzrch., LV (IV, 23 *Da*), Arac-Philod.-Homal.-Schism., 111.

ENGLER's diagnosis of this species should be completed as follows: Petiole 20—30 cm. long, when young densely, shortly puberulous, at length rather glabrescent; lamina when dry herbaceous, ovate- or occasionally subsagittate-cordate, 16—22  $\times$  9—11 cm. (in the specimens on hand), with the basal lobes semioblong, sometimes obtusely triangular, about  $\frac{1}{7}$ — $\frac{1}{4}$  as long as the antical lobe; costa and the lower part of the primary veins beneath (the costa densely, the veins sparingly) shortly puberulous; primary veins many on a side, upcurved towards the apex, the lower radiating, the lowest much deflexed, the costal ones spreading. Peduncle at length to 15 cm. long. Spadix (young)  $5\frac{1}{2}$  cm. long, with the masculine inflorescence long and slender, subcylindraceo-fusiform, (young) 4 cm long.

**Schismatoglottis grandiflora**, V. A. V. R.

Herba  $\pm$  30 cm. alta, caudiculo  $\pm$  5 cm. longo,  $\frac{1}{2}$  cm. crasso. Foliorum petiolus 10—25 cm. longus, vagina 3—4 cm. longa instructus, ceterum brevissime et decidue glanduloso-puberulus; lamina in sicco tenuiter herbacea, cordato-ovata, usque  $\pm$   $12\frac{1}{2}$ —18  $\times$  5—9 cm., supra obscura, immaculata, subtus pallidior, apice breviter acuminata, lobis posticis subsemiorbicularibus,  $\frac{3}{4}$ — $2\frac{1}{2}$   $\times$   $1\frac{1}{2}$ —4 cm.; costa venaeque primariae subtus brevissime et decidue glanduloso-puberulae; venae primariae 8—12 utrinque, apicem versus sursum curvae, apice vena collectiva crassa, intramarginali unitae, basales radiantes, ceterae ascendentes; venae secundariae, tertiariae et quaternariae sensim graciliores. Pedunculus 2—3 cm. longus. Spatha  $\pm$  12 cm. longa; tubus obconoideo-obovatus, 4 cm. longus, fere  $1\frac{1}{2}$  cm. amplus; lamina explanata oblonga, 8 cm. longa, 3 cm. lata, apice abrupte,

breviter acuminata. Spadix (ex sched.) albus; inflorescentia feminea obconoido-oblonga, 2 cm. longa,  $\frac{3}{4}$  cm. crassa, basi attenuata, fere  $\frac{1}{2}$  partem usque dorso spathae adnata; ovaria oblonga; stigma sessile, crasse pulviniforme, rotundum; staminodia inter ovaria non vidi; inflorescentia mascula a feminea interstitio crasso, subconoideo, 1 cm. longo, organis neutris sparsis, breviter obconoideis, saepe 2—4-nis munito separata, parte basali fertili cylindracea, 2 cm. longa,  $\frac{1}{2}$  cm. crassa, parte apicali sterili conoideo-cylindracea, 5 cm. longa, infra medium  $\frac{3}{4}$  cm. crassa, basi et apicem obtusum versus paullo attenuata; antherae thecis elongato-cupuliformibus, quam filamento paullo longioribus; staminodia partis apicalis sterilis elongato-obpyramidata, subprismatica, apice applanata, relative acute, irregulariter 3—6-angulosa.

Distinguished by the proportionally large inflorescence.

*Sumatra (Mt. Talamau, in forest, alt. 500 m., H. A. B. BÜNNEMEIJER No. 536, 1 May 1917).*

### **Schismatoglottis monticola, v. A. v. R.**

Herba usque  $\pm$  40 cm. alta, caudiculo e basi breviter repente ascendente, usque + 15 cm. alto,  $\frac{3}{4}$  cm. crasso. Foliorum petiolus quam lamina  $\pm$   $1\frac{1}{2}$ —2-plo longior, 15—30 cm. longus, vagina 5—10 cm. longa instructus, juvenilis probabiliter brevissime glanduloso-puberulus, glabrescens; lamina in sicco herbacea, triangulari-vel ovato-cordata,  $\pm$   $11$ — $15 \times 5\frac{1}{2}$ — $7\frac{1}{2}$  cm., supra obscure viridis, immaculata, subtus pallide viridis; lobus anticus linea extrorsum curvata apicem acuminatum versus angustata; lobi postici semiorbiculares vel obtuse triangulares,  $\pm$   $\frac{1}{6}$ — $\frac{1}{5}$  longitudinis lobi antici metientes; costa (cum venis lateralibus primariis) subtus prominens et brevissime glanduloso-puberula, postremo plus minusve glabrescens; venae primariae  $\pm$  10—12 utrinque, apicem versum sursum curvae, vena collectiva crassa, submarginali unitae, basales radiantes, constales sensim ascendentes; venae secundariae tertiariaeque sensim graciliores. Pedunculus gracilis, usque  $7\frac{1}{2}$  cm. longus, postremo longior. Spatha viridis ad rubescens (carnea); tubus  $1\frac{1}{2}$  cm. longus, demum longior, usque  $2\frac{1}{2}$  cm. longus; lamina aperta,  $4\frac{1}{2}$  cm. longa, explanata  $1\frac{1}{2}$  cm. lata, acuminata. Spadix  $4\frac{1}{2}$  cm. longus; inflorescentia feminea florifera oblongo-ellipsoidea,  $\frac{3}{4}$  cm. longa et  $\frac{1}{3}$  cm. crassa, postremo sat ovoideo-conoidea, usque  $\pm$  2-plo maior; ovaria parva, oblonga vel ovoidea; stigma sessile, crasse discoidea, rotundata, pro ratione magna; staminodia inter ovaria non vidi; inflorescentia mascula cylindracea, 3 cm. longa,  $\frac{1}{3}$  cm. crassa, basi apiceque obtusiuscula, a feminea interstitio gracili,  $\pm$   $\frac{1}{2}$  cm. longo, organis neutris minutissimis, capituliformibus sparse munito separata, parte apicali sterili partem fertilem basalem  $\pm$  aequante; stamina minuta; staminodia partis apicalis sterilis apice applanata, in circuitu rotundata vel rotundato-angulosa.

Near Sch. batuensis ENGL.

*Sumatra (Deli, Bandar-baroe, in primeval forest, alt. 1200 m., J. A. LÖRZING No. 4584, 30 December 1916).*



**Schismatoglottis hastifolia**, ENGL., in Pflzrch, LV (IV, 23 *Da*), Arac.-Philod.-Homal.-Schism., 116.

If the specimen up till now cultivated in the Buitenzorg Gardens under the name of *Sch. hastifolia* HALL. F. is the same specimen as that on which ENGLER based his diagnosis, the diagnosis should be modified as follows: Petiole  $12\frac{1}{2}$ —50 cm. long, sheathing about  $\frac{1}{3}$  its length, dark-dirty-red, viridescent towards the apex, the upper part flattened or slightly concave and acutely 2-marginate on the anterior side, for the rest terete and, like the costa and lower part of the primary veins beneath, when young densely but very minutely and rather deciduously papilloso-puberulous; lamina firm-herbaceous, sagittate-triangular-oblong, rarely hastate,  $15-30 \times 6-15$  cm., the upper surface dark green, often becoming paler-green-striated between the veins, especially towards the margin, the under surface pale-green, subglaucous, the apex slightly falcate, acuminate, apiculate, the basal lobes triangular, bluntish, separated by an acute or subrectangular sinus; costa beneath copiously (not densely), very minutely and rather deciduously papilloso-puberulous, the primary veins sparingly so towards the base; primary veins 12—18 on a side, upcurved towards the apex, the lower ones radiating, the lowest deflexed; secondary and tertiary veins finer than the primary ones. Spathe . . . . . Spadix . . . . .

The Buitenzorg Herbarium possesses 2 incomplete, erroneously numbered flowers preserved in alcohol, which are probably proceeding from the same plant. They have the spathe with the tube obconoid-oblong, the lamina wanting. Spadix with the feminine inflorescence cylindraceous, 6—9 mm. long, 5 mm. thick, oblique at the base; ovaries oblong-ovoid; stigma pulvinate, round, sessile; staminodes . . . . ; masculine inflorescence separated from the feminine by a thick interstice about  $\frac{3}{4}$  cm. long, provided with several very minute neuter organs of which the lower are apparently more or less crowded, the others scattered, . . . . .

**Schismatoglottis belophylla**, v. A. v. R.

Herba majuscula, cum foliis 25—50 cm. alta, caudice ascendente, 5—10 cm. alto. Foliorum petiolus 25—40 cm. longus, fere usque ad medium vaginatus, fere usque ad laminam sordide brunneo-purpureus, interdum brunneo-ruber, antice plus minusve canaliculatus, ceterum dense, breviter puberulus, postremo glabrescens; lamina in sicco firmiter herbacea, triangulari-vel oblongo-sagittata, usque  $20-30 \times 7-14$  cm., supra obscure viridis, marginem versus saepe pallidius viridi-maculato-striata, subtus pallide viridis, lobo antico triangulari vel oblongo-triangulari, apice acuto ad longius, acute acuminato, lobis posticis plerumque elongato-triangularibus, quam lobo antico 3-plo brevioribus, obtusis, retrorsis vel subextrorsis, sinu angusto ad late triangulari separatis; costa subtus dense, breviter puberula; venae primariae secundariaeque subtus basin versus plus minusve puberulae; venae primariae 10—12 utrinque, apicem versus sursum curvae, basales

radiantes infimae deflexae, costales plus minusve patentes; venae secundariae plus minusve graciles; venae tertiariae quaternariaeque gracillimae, absconditae. Pedunculus 10—15 cm. longus, carneus ad pallide rubro-brunneus, apicem versus incrassatus et in basin spathae sensim transiens. Spatha 10—11 cm. longa; tubus elongato-urceolatus,  $2\frac{1}{2}$ —3 cm. longus, pallide viridis; lamina conoideo-fusiformis, pallide viridis ad carnea, demum sublactea, acute acuminata. Spadix  $7\frac{1}{2}$ —9 cm. longus; inflorescentia feminea conoideo- vel ellipsoideo-oblonga,  $\pm$  2 cm. longa, in sicco 4—5 mm. crassa, basi obliqua et apice staminodiis breviter stipitatis, capitato-clavatis, inferioribus 1—2-seriatis, superioribus numerosis, plus minusve confertis instructa; ovaria conoideo-oblonga, perpallide viridia; stigma pulvinatum, rotundum, quam apex ovarii latius; inflorescentia mascula e basi subgracili subcylindracea, potius elongato-clavato-fusififormis, 5— $5\frac{1}{2}$  cm. longa, lactea, in sicco  $\pm$  3 mm. crassa, a feminea interstitio 1— $1\frac{1}{4}$  cm. longo, organis neutris sparsis, sessilibus vel breviter stipitatis, tuberculiformibus vel capitatis munito separata; pars basalis fertilis basi plus minusve laxiflora; pars apicalis sterilis partem fertilem  $\pm$  aequans, obtusa; thecae breviter cupuliformes, filamenta  $\pm$  aequantes, apice truncatae, leviter annuliformi-incrassatae; staminodia partis sterilis prismatico-cylindracea, apice truncata.

Probably nearly allied to Sch. batuensis and Sch. hastifolia ENGL.

*Sumatra (Deli, Sibolangit, on dry slopes in primeval forest, alt. 400 m., J. A. LÖRZING No. 5450, 2 December 1917).*

### **Schismatoglottis sagittifolia, v. A. v. R.**

Herba  $\pm$  60—65 cm. alta, caudiculo in specimine brevissimo. Foliorum petiolus 30—35 cm. longus, basi vagina  $\pm$   $7\frac{1}{2}$  cm. longa instructus, ceterum brevissime et plus minusve decidue glanduloso-puberulus; lamina in sicco tenuiter herbacea, submembranacea, elongato-sagittata,  $\pm$   $27\frac{1}{2} \times 6$  cm., supra obscura, immaculata, subtus pallidior, in vivo specie glauca; lobus anticus lineari-oblongus, margine paullo extrorsum curvata, apicem versus sensim subulato-triangulari-acuminatus, breviter apiculatus; lobi postici subelongato-triangulares, retrorsi vel vix extrorsi,  $3-4 \times 1\frac{1}{2}-2\frac{1}{2}$  cm., apice obtuse rotundati; costa venaeque primariae subtus relative dense et minutissime glanduloso-puberuli; venae primariae  $\pm$  15—20 utrinque, apicem versus sursum curvae, apice vena collectiva crassa, intramarginali unitae, venarum basalium infimae retrorsae, ceterae basin versus patentes vel horizontales; venae secundariae, tertiariae quaternariaeque graciles. Pedunculus  $\pm$   $7\frac{1}{2}$  cm. longus, demum longior. Spatha usque  $\pm$  9 cm. longa (vel longior?); tubus obovoideo-obconoideus,  $\pm$   $1\frac{3}{4}$  cm. longus; lamina longe conoideo-fusififormis,  $\pm$   $7\frac{1}{4}$  cm. longa, acuminata. Spadix in specimine incomplete evolutus, (ex sched. albus); inflorescentia feminea oblongo-ellipsoidea,  $\pm$  1 cm. longa, apice staminodiis copiosis, crebris munita; ovaria oblonga; stigma discoideum, rotundum, relative latum; staminodia inter ovaria non vidi; inflorescentia mascula probabiliter longe cylindracea vel

conoideo-cylindracea, a feminea interstitio  $\pm 1/2$  cm. longo, organis neutris perbrevibus, supra applanatis rotundisque munito separata.

Apparently very near Sch. hastifolia ENGL. but the leaves with the lamina proportionally much more elongated,

*Sumatra* (*Ophir District*, near *Taloe*, in forest, alt. 600 m., H. A. B. BÜNNEMEIJER No. 64, 8 April 1917).

**Schismatoglottis rubrocincta**, ENGL., in Pilzrch, LV (IV, 23 *Da*), Arac.-Philod.-Homal.-Schism., 106.

Plants from an unknown habitat and collector, cultivated in the Buitenzorg Gardens, on which ENGLER very probably based this species, are distinguished from ENGLER's diagnosis as follows: Caudex erect, varying from very short to 15 cm. high and 1 cm. thick; petiole green, sheathing to nearly or more than half its length, the anterior side somewhat flattened and narrowly 2-marginate-cristate; sheath pale-green; crests passing into the base of the margin of the lamina (not the lowest primary veins), very pale-green, more or less distinctly and sparingly, minutely red-punctulate; lamina smaller (probably due to the condition in which the plants are placed), much acuminate, bounded by a narrow line consisting of numerous crowded, very minute, red points, for the rest bright-green above, paler beneath with the space between the intramarginal collective vein and the margin provided with scattered, minute, red points; primary veins 4-6 on a side, prominent beneath; secondary veins varying from nearly as stout as the primary ones to nearly as fine as the tertiary ones; collective vein prominent beneath, disappearing towards the base.

**Schismatoglottis diversicolor**, V. A. V. R.

Herba parva, usque  $\pm 15$  cm. alta, caudiculo brevi, maxime  $\pm 3$  cm. longo. Foliorum petiolus 6-15 cm. longus, obscure sordide ruber, subnigro-purpureus, vagina  $1\frac{1}{2}$ -3 cm. longa instructus, ceterum subteres, dense, minutissime papillosus, antice leviter applanatus et cristis angustis, rubris, in venas primarias infimas continuatis 2-marginatus; lamina herbacea, in sicco tenuior, late oblonga, 8-12  $\times$  4-6 cm., supra in vivo obscure viridis, maculis minutissimis, metallico-caerulescentibus vel -viridescentibus praesertim secus costam lucidula, ceterum minutissime albido-puncticulata et foveolata, in sicco opaca, minutissime verruculosa, subtus pallide viridis, apice subabrupte, breviter acuminata, breviter apiculata, basi plus minusve sed non profunde cordato-emarginata; costa subtus basin versus obscure sordide rubra, dense, minutissime papillosa, apicem versus pallide viridis; venae primariae 7-10 utrinque, apicem versus sursum curvae, basi abrupte decurrentes, superiores suberectae, basales  $\pm$  horizontales vel leviter radiantes; venae secundariae tertiariaeque quam primariae graciliores. Pedunculus  $2\frac{1}{2}$ -5 cm. longus, pallide viridis. Spathae tubus obconoideo-obovoideus,  $2\frac{1}{4}$ - $2\frac{1}{2}$  cm. longus,  $\pm 6$  mm. amplus, olivaceus (potius viridis,

rubro-afflatus); lamina conoideo-fusiformis, 4—5 cm. longa,  $\frac{3}{4}$ —1 cm. ampla, hians, pallide viridescens, longitudinaliter olivaceo-venosa, anguste rubro-marginata, levissime ruguloso-verruculosa, acuminata, rubro-apiculata. Spadix 5—6 cm. longus; inflorescentia feminea cylindracea,  $1\frac{1}{2}$ —2 cm. longa, 3 mm. crassa, maxima parte spathae adnata, staminodiis paucis, sparsis, sordide albidis. clavatis vel stipitato-obconoideis, pistilla aequantibus munita; ovaria oblonga, pallide viridia; stigma parvum, sessile, olivaceum; inflorescentia mascula femineae contigua, parte basali fertili cylindracea,  $1\frac{1}{4}$ — $1\frac{3}{4}$  cm. longa, 2 mm. crassa, albida, hic illic roseo-afflata, parte apicali sterili fusiformi-cylindracea,  $\pm$  2 cm. longa, medio 3 mm. crassa, pallide aurantiaca, acuta, denudato-apiculata; antherae thecis breviter cupuliformibus, quam filamento paullo longioribus, apice truncatis; staminodia partis apicalis sterilis brevia, inferiora oblonga, apice rotundata, superiora subprismatica, apice truncata.

A very handsome small species resembling in shape of the leaves and the flower (not the colours) *Sch. trifasciata* ENGL. — The description is taken from living plants cultivated in the Buitenzorg Gardens, flowering July 1920.

*Borneo* (NIEUWENHUIS No. 1078).

***Schismatoglottis lancifolia***, HALL. F. & ENGL., in *Pflzrch*, LV (IV, 23 *Da*), *Arac.-Philod.-Homal.-Schism.*, 88.

If the plant from *Sumatra* (*Deli*, JAHERI), up till now cultivated in the Buitenzorg Gardens under the name of *Sch. lancifolia* HALL. F., is the same as that on which ENGLER based his incomplete description, the diagnosis will be as follows: Relatively large herb, with the caudex short. Leaves with the petiole about as long as the lamina, green, the sheath 2—3 cm. or more long, the anterior side canaliculate and narrowly 2-cristate but more distinctly towards the apex, the upper part copiously but very minutely red-punctulate, as are the crests which are passing into the base of the lamina (not the lowest primary veins); lamina relatively thick-herbaceous, when dry thinner, lanceolate,  $7\frac{1}{2}$ — $15 \times 1\frac{3}{4}$ —4 cm. or larger, slightly unequal-sided, mostly broadest at the middle, the upper part gradually acuminate, often slightly falcate, shortly apiculate, the base cuneate or rotundate-cuneate, the upper surface dark-green, copiously albido-punctulate, the under surface pale-green; costa pale-green on both sides but the under side copiously and minutely red-punctulate; primary veins 4—6 or more on a side, prominent beneath, the highest erect from an arcuate-ascending base, the lowest much ascending, about parallel with the margin, upcurved; secondary, tertiary and quaternary veins growing gradually finer. Peduncle 5—6 cm. or more long. Spathe with the tube ovoid, 2— $2\frac{1}{2}$  cm. long and about 1 cm. diam. or larger; lamina probably elongate-conoid. Spadix short-stalked, the stalk very oblique, connate with the spathe; feminine inflorescence cylindraceo-conoid, about 1 cm. long and  $\frac{1}{4}$  cm. thick or larger, the base

very oblique but not connate with the spathe and like the apex provided with several oblong or subclavate, pale staminodes which are about as high as the pistils; ovaries oblong; stigma thick-pulvinate, proportionally very broad; masculine inflorescence elongate-conoid, 2 cm. or more long, about 3 mm. thick at the base, separated from the feminine inflorescence by an interstice  $\pm \frac{1}{2}$  cm. long and provided with scattered, adpressed, clavate neuter organs; fertile basal portion with a few sterile stamens at the base; sterile apical portion  $\frac{1}{3}$  as long as the fertile portion, acute, nudate-apiculate; thecae shortly cupuliform, about as long as the filaments, truncate at the apex; staminodes of the apical portion shortly prismatical, the apex flat, irregularly flexuose or angulose.

The description of the leaves is taken from the living plant, of the flower from alcohol material, of the dimensions from both; the words „or more” and „or larger” accompanying the mention of the dimensions etc., refer to the dimensions etc. given by ENGLER.

*Sumatra, Borneo* (?).

**Schismatoglottis kurimana**, v. A. v. R.

Herba  $\pm 40 - 50$  cm. alta, caudiculo  $\pm 7\frac{1}{2}$  cm. longo,  $\frac{3}{4}$  cm. crasso. Foliorum petiolus  $12\frac{1}{2} - 15$  cm. longus, usque ad medium vel longius vaginatus; lamina in sicco herbacea, elongato-lanceolata vel -ovato-lanceolata,  $20 - 27\frac{1}{2} \times 3\frac{1}{2} - 5$  cm., immaculata, basi rotundato-cuneata, leviter decurrens, apice sensim relative longe acuminata, breviter tubuloso-apiculata; venae primariae 8 - 10 utrinque, ascendentes, basi decurrentes, apicem versus sursum curvae, apice vena collectiva crassa, intramarginali unitae; venae secundariae tertiariaeque quam primariae graciliores. Pedunculus  $\pm 7\frac{1}{2}$  cm. longus. Spatha viridis; tubus fusiformis vel ovoideo-fusiformis,  $\pm 3$  cm. longus, 6 - 7 mm. amplus; lamina conoideo-fusiformis, 7 cm. longa, 7 - 8 mm. ampla, longe acuminata. Spadix usque 8 cm. longus vel paullo longior; inflorescentia feminea fusiformis vel ovoideo-fusiformis,  $\pm 2$  cm. longa,  $\frac{1}{2}$  cm. crassa, basi ad  $\pm \frac{1}{2}$  partem usque dorso spathae adnata; ovaria lageniformia, ascendentia, hinc inde (basales et apicales plerumque) staminodiis elongato-clavatis vel longe obconoideis intermixta; stigma pulvinatum, rotundum, quam apex styliiformis ovarii latius; inflorescentia mascula a feminea interstitio  $\pm 1$  cm. longo, relative gracili, organis neutris sparsis, solitariis vel 2 - 4-nis, elongato-clavatis vel longe obconoideis munito separata, longe cylindracea vel fusiformi-cylindracea,  $\pm 4\frac{1}{2}$  cm. longa,  $\pm 4$  mm. crassa, basi et apice obtusiuscula, parte apicali sterili quam basali fertili  $\pm 2$ -plo longiore et paullo graciliore; antherae thecis cupuliformibus, filamentum crassum aequantibus, apice truncatis, connectivo crasso separatis; staminodia partis sterilis apicalis brevia, obpyramidata, apice plana, obtuse angulosa.

*Sumatra (Lima Poeloeih Kota, Soengai Kuriman, in forest, alt. 900 m., H. A. B. BÜNNEMEIJER No. 3255, 24 June 1918).*

**Schismatoglottis javanica**, ENGL., in Pflzrch, LV (IV, 23 *Da*). Arac.-Philod.-Homal.-Schism., 108, fig. 67.

Spathe with the tube obliquely elongate-ovoid, green, dark-green-veined, very pale-punctulate between the veins, the lamina not ovoid and abruptly cuspidate but elongate-conoid and gradually attenuated from the very base towards the acute apex, yellowish-green, at length pale-yellow, striated and punctulate like the tube. Spadix with the feminine inflorescence elongate-conoid, the masculine inflorescence not clavate but subcylindrical-conoid, broadest not near the apex but near the base, separated from the feminine by a neuter interstice provided with scattered, very short and proportionally thick, obpyramidal-cuneate, nearly flat, white abortive flowers (fig. 67 *H*); ovaries green; stigma very pale-green, nearly white; staminodes of the feminine inflorescence arranged at the apex and the base, rather copious, capitate, clavate or obconoid, ivory-white, with the apex rounded or rotundate-truncate, on a rather slender, obconoid stalk; fertile portion of the masculine inflorescence pale-ochraceous; sterile portion elongate-conoid, subacute, ivory-white, the staminodes elongate-obpyramidal, subprismatical (fig. 67 *G*), with the apex nearly flat, and, like the apex of the anthers, very finely punctulate-verruculose, glittering when seen under the lens by reflected light.

ENGLER's diagnosis completed and corrected after the original plant, on which is based this species.

**Schismatoglottis tenuifolia**, ENGL., in Pflzrch, LV (IV, 23 *Da*), Arac.-Philod.-Homal.-Schism., 113.

Leaves with the petiole as long as the lamina or shorter,  $12\frac{1}{2}$ — $17\frac{1}{2}$  cm. long, the anterior side canaliculate with the margins provided with a narrowly wing-shaped crest; crests passing into the lowest primary veins; lamina  $18$ — $21 \times 6$ — $7$  cm., the apex rather suddenly acuminate; primary veins upcurved, connected at the apex by a rather stout, submarginal collective vein, the basal ones horizontal, the others spreading; secondary, tertiary and quaternary veins growing gradually finer. Spadix with the feminine inflorescence elongate-conoid,  $1\frac{3}{4}$ — $2$  cm. long, about 4 mm. thick; masculine inflorescence clavate, about  $1\frac{1}{2}$  cm. long,  $\frac{1}{2}$  cm. thick at the middle, both fertile and sterile portions about as long; fertile portion obconoid, sterile bluntly conoid-oblong, the apex rounded; staminodes with the apex flattened, obtusely angular.

ENGLER's diagnosis is corrected and completed here after VON RÖMER's original specimen.

**Schismatoglottis luzonensis**, ENGL., in Pflzrch, LV (IV, 23 *Da*), Arac.-Philod.-Homal.-Schism., 88 (not 121).

ENGLER described under this specific name 2 absolutely different plants on different pages (88 and 121) of the very same monograph. Of course, one of both cannot be maintained under this name and should be renamed.

Since the library of the Buitenzorg Gardens has now several lacks or gaps due to the partial interruption of its regular completion during and after the great war, I failed to find out whether the error mentioned might have been discovered and corrected. If this should not be the case, I propose to maintain the name *Sch. luzonensis* ENGL. for the plant described on page 88 of the monograph quoted above and to call the other:

***Schismatoglottis plurivenia***, V. A. V. R.; *Sch. luzonensis*, ENGL., in Pflzrch, LV (IV, 23 *Da*), Arac.-Philod.-Homal.-Schism., 121 (not 88).

*Luzon.*

***Schismatoglottis canaliculata***, ENGL., in Pflzrch, LV (IV, 23 *Da*), Arac.-Philod.-Homal.-Schism., 112.

If the plant cultivated in the Buitenzorg Gardens, of which the Buitenzorg Herbarium possesses dried leaves and alcohol material of the flower, is the same as that on which ENGLER founded this species, then the diagnosis should be completed as follows: Petiole about as long as the lamina, sheathing  $\frac{1}{4}$ — $\frac{1}{2}$  its length; lamina of the adult plant rather triangular-oblong,  $2$ — $2\frac{1}{2}$   $\times$  as long as broad, the base cordate, shortly and broadly cuneate between the basal lobes, the apex gradually acuminate; basal lobes semioblong or rotundate-triangular. Peduncle  $7\frac{1}{2}$ — $10$  cm. long. Spathe with the tube obconoid-obovate, to 2 cm. long and 1 cm. diam. Spadix about 6 cm. long; feminine inflorescence cylindrical-oblong,  $2\frac{1}{4}$ — $2\frac{1}{2}$  cm. long, the lower half connate with the spathe; ovaries ellipsoidal-oblong, attenuated at the base and the styliiform apex; stigma thick-pulvinate, round, broader than the apex of the ovary; staminodes among the pistils several ( $\pm 25$  in the specimen in hand), about twice as high as the pistils, the apex relatively small, ovate, oblong or obovate, on a long and proportionally thick stalk; masculine inflorescence close to the feminine, subcylindrical,  $3\frac{3}{4}$  cm. long,  $\frac{1}{2}$  cm. thick below the middle, very slightly attenuated at the base and the blunt, rather rounded apex, the sterile apical portion about twice as long as the fertile basal portion; thecae shortly cupiliform, shorter than the filaments, truncate at the apex; staminodes slender-obpyramidal, subprismatical, the apex truncate, irregularly, obtusely angular. — The alcohol material has the stalks of the lower staminodes, the filaments, the apices of the thecae, and the higher staminodes copiously dark-punctulate or shortly, longitudinally dark-striolate.

***Schismatoglottis wahaiana***, V. A. V. R.

Planta parva,  $\pm 15$  cm. alta, caudiculo brevi. Foliorum petiolus  $4\frac{1}{2}$ — $9$  cm. longus, basi  $\frac{1}{4}$ — $\frac{1}{3}$  longitudinalinis vaginatus, ceterum antice applanatus vel leviter canaliculatus, 2-cristatus, sursum viridis, deorsum punctis minutis vel striis longitudinalibus brevissimisque, rubris specie obscure sordide ruber, postremo viridescens; vagina rosea, copiose rubro-puncticulata vel-striolata; cristae anguste aliformes, leviter undulatae, pallide virides, rubro-puncticulatae;

lamina firmiter herbacea, cordato-ovata, 7—12 × 4—7 cm., foliorum majorem saepe inaequilatera, juvenilis robro-cincta, supra obscure viridis, immaculata, subtus pallidior, apice plus minusve acute acuminata, breviter apiculata. basi lobis ± semiorbicularibus, 1—1½ × 1½—3 cm., sinu relative acuto separatis; venae primariae ± 8—11 utrinque, basales radiantes, costales patentes, apicem versus sursum curvae, apice vena intramarginali, relative crassa unitae; venae secundariae, tertiariae quaternariaeque sensim graciliores. Cataphylla rosea, secus costam copiose minuteque coccineo-puncticulata et-striolata. Pedunculus ± 2 cm. longus, leviter, longitudinaliter rugulosus, viridis, deorsum copiose rubro-puncticulatus et-striolatus. Spathae tubus obconoideo-obovoideus, usque ± 1 cm. longus, ½—1 cm. amplus, viridis, rubro-puncticulatus, leviter, longitudinaliter rugulosus; lamina elongato-ovoidea, usque 3½ cm. longa et ¾ cm. ampla, acuta, coccinea vel obscure sordide rubra aut viridis sed punctis minutis, plus minusve copiosis specie rubro-afflata, longitudinaliter viridi-venosa. Spadix elongatus; inflorescentia feminea conoidea vel subcylindracea, + 7 mm. longa, 3 mm. crassa, a basi fere medium usque spathae adnata, praesertim ad basin staminodiis paucis, eburneis vel sordide albis, pistilla non vel paullo superantibus, crasse stipitatis, apice capitatis, semiglobosis vel obconoideis munita; ovaria proportione crassa, breviter oblonga, perpallide flavido-viridia, stigmate sessili, parvo, discoideo, concolore coronata; inflorescentia mascula elongato-ellipsoidea vel subcylindracea, a feminea interstitio 2 mm. longo, organis neutris crebris, 2-seriatis, breviter subprismaticis, apice truncatis et sordide albis vel pallide flavido-brunneis aut-griseis munito separata, 1½—2 cm. longa, 3—4 mm. crassa, parte basali fertili 8—10 mm. longa, pallide brunneo-grisea vel perpallide flavido-brunnea, parte apicali sterili 7—11 mm. longa, pallide flavida, flavido-brunnea vel grisea, apice obtusa vel rotundata; antherae thecis brevissime cupuliformibus, quam filamentum brevioribus, apice truncatis, connectivo non vel paullo superatis; staminodia partis apicalis breviter subprismatica, irregulariter, obtuse angulosa, apice truncata vel rotundato-truncata, non raro lateraliter connata.

The description is taken from living specimens cultivated in the Buitenzorg Gardens, flowering June, September and November 1920.

*Ceram (Wahai, Kali Solo and Kali Koea, L. RUTTEN's Exploration Commission).*

### **Schismatoglottis leptophylla, v. A. v. R.**

Planta usque + 50 cm. alta, caudice usque ± 15 cm. longo. Foliorum petiolus 10—35 cm. longus, sursum antice plus minusve canaliculatus, basi ⅓—½ longitudinis vel longius vaginatus; vagina tenuis, a basi latiuscula sensim angustata; lamina tenuis, in sicco submembranacea, ± 9—20 × 4¼—12 cm., acuminata, in speciminibus minoribus oblonga et basi rotundata, vix emarginata, in speciminibus majoribus ovata et basi cordata, lobis posticis usque 3 cm. longis; venae primariae distinctae,



6–12 utrinque, basales horizontales vel radiantes, apicem versus sursum curvatae, costales sensim valde ascendentes et incurvatae; venae secundariae tertiariaeque graciliores, tertiariae gracillimae. Pedunculus 5–10 cm. longus. Spatha juvenilis 6–8 cm. longa,  $\frac{1}{2}$  cm. ampla, tenuis, pallide viridis ad rosea vel lurido-violacea; tubus obconoideo-obovatus,  $1\frac{1}{2}$ – $2\frac{1}{2}$  cm. longus; lamina conoideo-cylindracea, acuminata. Spadix juvenilis 4– $6\frac{1}{2}$  cm. longus, albus vel pallide viridis; inflorescentia feminea subconoideo-cylindracea,  $1$ – $1\frac{1}{2}$  cm. longa,  $\frac{1}{3}$ – $\frac{1}{2}$  cm. crassa, apice et basi staminodiis obconoideis vel clavatis cincta; inflorescentia mascula a feminea interstitio  $\frac{1}{2}$ –1 cm. longo, subgracili, organis sterilibus parvis, sparsis obsito separata, cylindracea, 3–4 cm. longa, 2–4 mm. crassa, obtusa, parte basali fertili partem apicalem sterilem + aequante; staminodia partis sterilis apice truncata.

The incomplete description of the flower has been taken from young specimens; the fully developed flower has the dimensions perhaps somewhat larger. — Probably near *Sch. mutata* SCORT.

Sumatra (Mt. Koerintji, in forest, alt. 1300–1600 m., H. A. B. BÜNNEMEIJER Nos. 8547, 8731, 8975, 9037, 7–20 March 1920).

### **Schismatoglottis Ruttenii**, v. A. v. R.

Herba majuscula,  $\pm$  50 cm. alta, caudice + 20 cm. longo. Foliorum petiolus 20–30 cm. longus, inferne  $\frac{1}{5}$ – $\frac{1}{3}$  vaginatus, obscure viridis et cum vagina longitudinaliter obscurius striatus, antice apicem versus (usque ad  $7\frac{1}{2}$ –10 cm. infra laminam) subplanus et anguste acuteque marginatus; lamina herbacea, oblongo-sagittata,  $22\frac{1}{2}$ – $30 \times 12\frac{1}{2}$ – $17\frac{1}{2}$  cm., supra obscure viridis, immaculata, lucida, subtus pallide viridis, subglauca; lobus anticus ad vel infra medium latissimus et saepe inaequilaterus, apicem relative longe et anguste sed obtusiuscule falcato-acuminatum, relative longe et graciliter cylindraceo-apiculatum versus linea plus minusve conspicue extrorsum curva angustatus; lobi postici triangulares,  $4$ – $6 \times 5$ – $8$  cm., retrorsi vel subextrorsi, sinu  $\pm$  rectangulari separati, apice obtusi; venae primariae 11–15 utrinque, basales radiantes et apicem versus valde, costales patentes et apicem versus leviter sursum curvae, omnes apice vena collectiva intramarginali, sat gracili unitae. Pedunculus  $\pm$   $7\frac{1}{2}$ –10 cm. longus. Spatha  $\pm$   $7\frac{1}{2}$ –10 cm. longa; tubus breviter conoideo-ovoideus,  $1\frac{3}{4}$ –2 cm. longus et  $\pm$  1 cm. amplus, viridis; lamina conoideo-fusiformis, amplitudine fere eam tubi aequante, pallide flavido-viridis vel demum flava, relative longe acuminata, subcuspidata. Spadix 4–5 cm. longus; inflorescentia feminea conoidea,  $1\frac{1}{2}$ – $2\frac{1}{2}$  cm. longa,  $\frac{1}{2}$  cm. crassa, basi  $\pm$  usque ad medium spathae adnata, apice relative crasso subclaxiflora; pistilla staminodiis paucis, quam pistillis usque ad 2-plo longioribus, albidis, clavatis, longe stipitatis intermixta; ovaria ovoidea, cum stigmate sessili, rotundo-discoideo perpallide viridia; inflorescentia mascula a feminea interstitio subnudo, brevissimo separata, ellipsoideo-clavata,  $2\frac{1}{2}$ –3 cm. longa, medio

$\frac{3}{4}$ —1 cm. crassa, parte basali fertili obconoidea, juvenili sordide albida, partem apicalem sterilem, breviter conoideo-cylindraceam, juvenilem eburneam, apice late rotundatam aequante; staminum thecae breviter oblongae, quam filamentum paullo breviores; stamina inferiora hic illic sterilia; staminodia partis apicalis sterilis elongato-clavata. apice rotundata, lateribus leviter obtuse angulosis.

The description is taken from living specimens cultivated in the Buitenzorg Gardens, flowering June to December 1920.

*Ceram* (Wahai, Kali Solo, L. RUTTEN's Exploration Commission).

**Schismatoglottis calyptrata** (Rxb.), ZOLL. & MOR., Syst. Verz., 83; MIQ., Flor. Ned. Ind., III, 214; ENGL. & KRAUSE, in Pflzrch, LV (IV, 23 Da), Arac.-Philod.-Homal.-Schism., 114; *Sch. longipes*, MIQ., l. c.; SCHOTT, Gen. Aroid., tab. 55; *Calla calyptrata*, RXB., Flor. Ind., III, 514

Judging from the diagnosis given by ENGLER and KRAUSE one should think that this species has the spadix with a dark-coloured masculine inflorescence with black-purple and (or) purple-striped stamens and staminodes. This is really the case in dried specimens and commonly (though not invariably) also in material preserved in alcohol. Although this species seems to be very common in *Malaya* I have up till now not been in the opportunity to examine living specimens but I am inclined to suppose that the spadix has all the portions pale-coloured, since in all the specimens of other species that I have seen in state of nature the inflorescences were pale, the ovaries commonly pale-green, the stigmata dirty-white, and the stamens and staminodes varying between ivory-white and pale-yellow or dirty-white, rarely pale-rosy, -brown or -orange.<sup>1)</sup>—According to SCHOTT's plate of *Sch. longipes* MIQ. quoted above (considered by HOOKER as a distinct species) the feminine inflorescence is provided with few ( $\pm$  3–6) staminodes (not mentioned in ENGLER and KRAUSE's diagnosis) about as high as the pistils, with a clavate-capitate apex nearly as thick as the ovaries and a relatively slender, stipitiform lower partion.

Forma typica. - *Burma across the Malayan Peninsula and Islands to the Philippines and Papua.*

Forma multimargarita: Inflorescentia feminea cum mascula lactea ad pallide flavida; staminodia inter pistilla numerosa (in specimine examinato  $\pm$  100), apice quam ovaria  $\pm$  2-plo crassiore et pistilla superante. — *Sumatra* (*Deli, Sibolangit*, J. A. LÖRZING No. 5441, 26 November 1917).

**Schismatoglottis pseudo-calyptrata**, V. A. V. R.

Herba majuscula, usque  $\pm$  35 cm. alta, caudice brevissimo. Foliorum petiolus 12—18 cm. longus, relative obscure viridis, basi  $\frac{1}{5}$ — $\frac{1}{3}$  longitudinis viridi-vaginatus, antice apicem versus subconcavo-applanatus et

<sup>1)</sup> KOORDERS' No. 23307<sup>b)</sup> from *Java* is provided with a label bearing the words „Flower dirty-white”.

angustissime 2-cristatus, ceterum teres; vagina albido-marginata; cristae in venas primarias infimas transientes; lamina relative crasse herbacea, in sicco tenuior, elongato-sub sagittato-cordata,  $12-23 \times 3\frac{1}{2}-9$  cm., supra obscure viridis, copiose albido-puncticulata, subtus pallide viridis, subglaucua, apice subabrupte et anguste acuminata, leviter falcato-curvata, graciliter apiculata, basi lobis semioblongo-triangularibus,  $\frac{3}{4}-3 \times 1-4$  cm., sinu acuto vel rectangulari separatis, apice obtuse rotundatis; venae iis Sch. calyptratae Z. & M. similes. Pedunculus  $\pm 5$  cm. longus. Spathae tubus obconoideo-ovoideus, 3 cm. longus, 1 cm. amplius; lamina . . . Spadix  $\pm 5$  cm. longus; inflorescentia feminea elongato-conoidea,  $2\frac{1}{2}$  cm. longa, 5 mm. crassa,  $\frac{1}{2}$  parte basali spathae adnata, apice sublaxiflora, ceterum staminodiis pluribus, sparsis, capitato-clavatis, longe stipitatis, quam pistillis non vel vix altioribus munita; ovaria oblonga, apice leviter lageniformi-attenuata; stigma sessile, discoideum, quam apex ovarii haud latius; inflorescentia mascula femineae subcontigua,  $2\frac{1}{2}$  cm. longa, parte basali fertili obconoidea, 16 mm. longa, apice 5 mm. crassa, basi staminodiis pluribus, depresso-prismaticis, subdiscoideis munita, parte apicali sterili semiellipsoidea, 9 mm. longa, basi fere 7 mm. crassa, apice late rotundata; antherae thecis breviter cupuliformibus, quam filamentum paullo brevioribus, extus sulcatis, apice truncatis, vix annuliformi-incrassatis; staminodia partis sterilis subprismatica, apice rotundato-truncata, irregulariter et obtuse angulosa.

The description of the leaves is taken from a living plant cultivated in the Buitenzorg Gardens, of the flower from alcohol material of the same plant.

*Borneo* (NIEUWENHUIS No. 266).

### **Schismatoglottis calyptratoides, v. A. v. R.**

Herba usque  $\pm 30$  cm. alta, caudiculo brevi. Foliorum petiolus  $\pm 10-15$  cm. longus, sursum obscure, deorsum pallidius viridis, a basi ad medium usque vaginatus, ceterum antice plano-concavus et 2-cristatus, inter et extra cristas graciliter, longitudinaliter rugulosus; vagina pallide viridis, contra lucem conspecta obscurius punctata, apice rotundato-acuta; cristae horizontales, anguste aliformes, pallide virides, in venas primarias inferiores laminae transientes; lamina herbacea, elongato-cordata,  $12\frac{1}{2}-17\frac{1}{2} \times 5-8\frac{1}{2}$  cm., supra obscure viridis, copiose albido-puncticulata, subtus glauca, lobo antico apice breviter acuminato, breviter apiculato, lobis posticis semiorbicularibus vel obtuse triangularibus,  $\pm 1-2\frac{1}{2} \times 2-3$  cm., sinu acuto vel rectangulari separatis; venae iis Sch. calyptratae Z. & M. similes. Pedunculus  $\pm 7\frac{1}{2}$  cm. longus, viridis, copiose, graciliter, longitudinaliter rugulosus, rugulis copiose albido-puncticulatis. Spatha  $\pm 9$  cm. longa; tubus oblique elongatus,  $3\frac{3}{4}$  cm. longus, 1 cm. amplius, viridis, longitudinaliter venosus, inter venas copiose, graciliter, longitudinaliter rugulosus, rugulis copiose albido-puncticulatis; lamina conoideo-fusiformis,  $5\frac{1}{4}$  cm. longa, quam tubus paullo amplior, acuminata, pallide viridis, obscurius

longitudinaliter venosa, inter venas copiose, pallidius puncticulata. Spadix  $\pm 6\frac{1}{2}$  cm. longus; inflorescentia feminea conoideo-cylindracea,  $3\frac{1}{4}$  cm. longa,  $7\frac{1}{2}$  mm. crassa, in dorso a basi fere ad medium usque cum spatha connata, apice leviter laxiflora, a basi usque ad apicem staminodiis pluribus ( $\pm 25-35$ ), sparsis munita; ovaria oblonga, pallide viridia, subalba, apice in stylum brevissimum crassumque contracta, stigmatate discoideo, quam stylo paullo crassiore, rotundato, concolore coronata; staminodia quam pistilla paullo longiora, capitata vel clavato-capitata, albida, longe stipitata; inflorescentia mascula femineae contigua et equilonga, 9 mm. crassa, elongato-ellipsoideo-clavata, parte basali fertili obconoidea,  $1\frac{3}{4}$  cm. longa, pallide brunnescenti-flavida, subalba, parte apicali sterili breviter conoideo-cylindracea,  $1\frac{1}{2}$  cm. longa, pallide sulfurea, subalba, apice rotundata; antherae filamenta  $\pm$  aequantes, thecis cupuliformibus, apice truncatis; staminodia cuneato-prismatica, apice subrotundato-truncata, obtuse angulosa.

The description is taken from a living specimen of unknown origin, cultivated in the Buitenzorg Gardens.

**Schismatoglottis Treubii**, ENGL., in Pflzrch, LV (IV, 23 Da), Arac.-Philod.-Homal.-Schism., 119, fig. 73.

A specimen of an unknown habitat, cultivated in the Buitenzorg Gardens, determined by ENGLER, is distinguished from ENGLER's diagnosis by the following characters: Petiole green, sheathing  $1\frac{1}{4}-1\frac{1}{2}$  its length; sheath soon dilacerated; lamina  $30-45 \times 17\frac{1}{2}-25$  cm., above dark-green, beneath pale-green, the postical lobes  $\frac{1}{5}-\frac{1}{4}$  as long as the antical one; primary veins 15-20 on a side; peduncle  $7\frac{1}{2}-10$  cm. long; spathe 15-20 cm. long, the tube ovoid-oblong, 5-6 cm. long, 2-3 cm. diam., pale-green, the lamina subcylindrical when convolute, 10-15 cm. long,  $1\frac{1}{4}$  cm. diam., yellowish, the apex conoid-acute or -acuminate; spadix  $12\frac{1}{2}$  cm. or more long; feminine inflorescence subconoid; ovaries pale-green; stigma discoid, pale-brown-yellow; staminodes elongate-obconoid with a thickened, white or rosy apex; interstice between the feminine and masculine inflorescences  $1\frac{1}{2}-2$  cm. long, pale-green, the base beset with crowded white or rosy staminodes, for the rest with scattered, very small, white neuter organs; masculine inflorescence with the fertile portion cylindraceous,  $3\frac{1}{2}-4$  cm. long, 8 mm. thick, dirty-white, the sterile portion conoid-cylindraceous,  $4\frac{1}{2}-6$  cm. long, 1 cm. thick, ivory-white, the apex bluntish; staminodes of fresh material provided at the apex with glittering, iridescent points, the higher much thicker than the others. (Forma viridipes).

**Schismatoglottis latifolia**, MIQ., Flor. Ned. Ind., III, 214; ENGL. & KRAUSE, in Pflzrch, LV (IV, 23 Da), 117; *Sch. rupestris*, ZOLL. & MORR., Syst. Verz., 77; ENGL., in ENGL. & PRANTL, Nat. Pflzfam., II<sup>3</sup>, fig. 84; *G*; — var. *rubescens*, ENGL., ENGL. & KRAUSE, l. c., fig. 71 (the spadix not quite correct); *Sch. rubescens*, ENGL., MS.

Plants occurring in the Buitenzorg<sup>1</sup> Herbarium or cultivated in the Buitenzorg Gardens are distinguished from ENGLER's diagnosis and figure as follows: Petiole to 25–50 cm. long, green, sheathing  $\frac{1}{4}$ – $\frac{1}{2}$  (commonly  $\frac{1}{3}$ ) its length, for the rest flattish or slightly canaliculate on the anterior side throughout or in the upper part, occasionally narrowly or acutely 2-marginate; sheath scariose, caducous; lamina dark-green above, pale-green beneath, with the basal lobes separated by an obtuse or acute sinus; primary veins less numerous (to 10–15 on a side) in the smaller leaves. Spathe with the tube  $2\frac{1}{2}$ –5 cm. long,  $\frac{3}{4}$ –2 cm. diam., green; lamina conoid-fusiform, 6–12 cm. long, yellowish or yellow-green. Spadix with the feminine inflorescence conoid, the lower  $\frac{1}{3}$ – $\frac{1}{2}$  connate with the spathe, 2–4 cm. long,  $\frac{3}{4}$ –1 cm. thick; ovaries pale-green, ovoid or oblong; stigma discoid, very pale-green; staminodes among the ovaries present, a few ones scattered here and there but several to many others more or less crowded at the base of the feminine inflorescence, about as high as the ovaries, capitate, white, on a long and relatively thick stalk; masculine inflorescence conoid-fusiform, 4–8 cm. long,  $\frac{1}{2}$ –1 cm. thick, separated from the feminine by a conoid interstice  $\frac{3}{4}$ –1 cm. long, provided with scattered, solitary or 2–4-nate obconoid neuter organs which are white at the thickened apex; fertile basal portion pale-yellow-brown or -grey; sterile apical portion about as long as the fertile or shorter or longer, ivory-white to pale-yellow-orange, bluntish; thecae commonly longer than the filaments; staminodes subprismatical, the apex truncate, irregularly 3–6-angular, very slightly depressed in the centre.

**Var. rubescens:** Leaves, especially the petiole, reddish to purple-brown; lamina with the basal lobes somewhat overlapping or separated by an acute sinus.

There are in the Buitenzorg Gardens 2 beds (XI B; X 21, 51) with totally different plants cultivated both under the name of *Sch. Wigmanii* ENGL. — No. 21, from *Borneo* (NIEUWENHUIS No. 1096) does not agree with the diagnosis of that species and is nearly exactly agreeing with the plant described by me as *Sch. Engleriana*. — No. 51, from an unknown locality and collector, of which incomplete material gathered formerly has been used by ENGLER for his incomplete description of *Sch. Wigmanii* and of which complete material has been gathered recently by myself, proves that *Sch. Wigmanii* ENGL. is but a form of *Sch. latifolia* MIQ.; it is distinguished from the variety *rubescens* in having the petiole less distinctly reddish and the basal lobes of the lamina often distinctly though not much overlapping.

**Schismatoglottis Nieuwenhuisii**, ENGL., in *Pflzrch*, LV (IV, 23 *Da*), *Arac.-Philod.-Homal.-Schism.*, 112 p. p., fig. 69.

This specific name includes 4 totally different species of which not a single one agrees exactly with the entire diagnosis and figure given by ENGLER.

Of the plants gathered in *Borneo* by NIEUWENHUIS (No. 1485) and WINKLER (No. 2199, of which the Buitenzorg Herbarium possesses only a duplicate) the former is too young for a thorough examination. Nevertheless it can easily be made out that the said former, on which ENGLER based the specific name, is a . . . . Homalomena, probably of the affinity of *H. sagittifolia* JUNGH. or a form of a it. WINKLER's original No. 2129, occurring in the Berlin Herbarium, is unknown to me, but the Buitenzorg duplicate resembles in my opinion very much a plant cultivated in the Buitenzorg Gardens under the name of *Sch. novo-guineensis* N. E. BR.; it is distinguished by its maculate leaves, whilst in *Sch. Nieuwenhuisii* ENGL. the leaves are immaculate.

There are in the Buitenzorg Gardens 2 beds (XI B; X 111, 160) with absolutely different Bornean plants cultivated both under the name of *Sch. Nieuwenhuissi* ENGL. whilst in another bed (XI B; X 113) is a plant of an unknown locality, cultivated under the name of *Sch. calytrata* Z. & M. var. *concolor* but agreeing exactly with No. 160. Comparing them with ENGLER's diagnosis and figure quoted above, it seems that No. 160, from an unknown collector, has been the plant used by ENGLER for his diagnosis and figure, and No. 111, collected by NIEUWENHUIS, must be renamed and then the new diagnosis of *Sch. Nieuwenhuisii* ENGL. will be:

Small herb, to about 35 cm. high, with a short caudex. Petiole 10—30 cm. long, dark-green, minutely longitudinally pale-punctulate-striate, sheathing about  $\frac{1}{5}$  its length, the upper part flat or somewhat canaliculate on the anterior side; sheath relatively broad, rounded at the short, free apex, dark-punctulate when seen towards the light; lamina herbaceous, subtriangular-oblong-cordate,  $15-25 \times 6-15$  cm., the upper surface dark-green, immaculate, very copiously and minutely albido-punctulate, provided here and there with indistinct pale stripes between the veins when seen towards the light but more distinctly in dried material; antical lobe relatively suddenly acuminate and shortly apiculate; postical lobes subtriangular,  $1\frac{1}{2}-6 \times 2\frac{1}{2}-6$  cm., separated by a subrectangular sinus, the apex blunt or rounded; primary veins about 10—12 on a side, the basal ones radiating, the costal ones ascending, upcurved; secondary and tertiary veins growing gradually finer. Peduncle 5—15 cm. long. Spathe with the tube obconoid-fusiform, 5 cm. long,  $1\frac{1}{4}$  cm. diam.; lamina 7 cm. long, shortly acuminate. Spadix  $\pm 7\frac{1}{2}$  cm. long, feminine inflorescence cylindraco-fusiform,  $\frac{3}{4}$  cm. thick, the lower half dorsally connate with the spathe; ovaries oblong; stigma subsessile, pulvinate, thick, broad; staminodes among the pistils several,  $1\frac{1}{2} \times$  as long as these, thick-obconoid-clavate, long-stalked; masculine inflorescence separated from the feminine by close rows of short-oblong neuter organs; fertile lower portion elongate-obconoid,  $1\frac{3}{4}$  cm. long,  $\frac{3}{4}$  cm. thick at the apex; sterile apical portion conoid-oblong, a little shorter than the fertile portion and at the base a little thicker than it; anthers with the thecae shortly cupuliform, shorter than the filaments, the apex ring-shaped, truncate;

staminodes elongate-oblong, the lower rotundate, the higher rounded at the apex, and all minutely 3—9-pitted at the tip.

The description of the leaves is taken partly from fresh, partly from dried material, of the flower from alcohol material, all from plants cultivated in the Buitenzorg Gardens. — It is to be observed that the alcohol material has the stalks of the lower staminodes, the neuter organs, the filaments, the apices of the anthers and the higher staminodes provided with dark points or shortly longitudinal stripes, as is drawn in ENGLER's figure.

*Borneo.*

### **Schismatoglottis Engleriana, v. A. v. R.**

Herba robusta, usque  $1\frac{1}{2}$  m. alta, caudice erecto, crasso. Foliorum petiolus 30—75 cm. longus, pallide viridis, copiose, longitudinaliter obscurius striatus, basi  $\pm \frac{1}{3}$  vaginatus, parte superiore semiteres, ceterum teres; vagina persistens, apice breviter libero acuta; striae petioli longae, vaginae brevissimae; lamina herbacea, oblongo-vel ovato-cordata, 20—35  $\times$  10—22  $\frac{1}{2}$  cm., supra saturate viridis, immaculata, epuncticulata, subtus pallide viridis; lobus anticus apice abrupte, brevissime acuminatus, relative longe et crasse apiculatus; lobi postici obtuse triangulares vel semiovaeles, 3—10  $\times$  3  $\frac{1}{3}$ —10 cm. sinu angusto vel acutangulari separati, apice obtusi vel rotundati; venae primariae 13—16 utrinque, basales radiantes, costales ascendentes, sursum arcuatae, fere omnes venis secundariis 1—2 utrinque ramosae; venae secundariae, tertiariae quaternariaeque sensim graciliores. Pedunculus 15 cm. vel plus longus, pallide viridis. Spathae tubus conoideo-ovoideus, 6—7  $\frac{1}{2}$  cm. longus,  $1\frac{1}{2}$ —2 cm. amplus, pallide viridis, obscurius longitudinaliter striatus; lamina pallide flavida, longitudinaliter impresso-striata. Spadicis inflorescentia feminea conoidea, 4—6 cm. longa, 1—1  $\frac{1}{2}$  cm. crassa,  $\frac{1}{3}$  parte basali cum spatha connata; ovaria oblonga, pallide viridia, staminodiis 2-plo longioribus, longissime albo-stipitatis, apice obconoideo-clavatis, flavidis copiose intermixta; stigma rotundo-discoideum, sessile, viridescenti-albidum; inflorescentia mascula feminae contigua, flavida; pars basalis fertilis obconoidea, 2—4 cm. longa, apice 1—2  $\frac{1}{2}$  cm. crassa; pars apicalis sterilis breviter oblongo-conoidea,  $1\frac{1}{2}$ —2 cm., longa, basi quam pars fertilis paullo crassior; stamina thecis elongato-cupuliformibus, quam filamentum non vel paullo longioribus, apice plus minusve oblique truncatis; staminodia partis apicalis sterilis obpyramidata, subprismatica, apice truncata, obtuse 3—6-angulosa, concava.

The description is taken from living and dried material besides alcohol material of a specimen cultivated in the Buitenzorg Gardens, flowering June 1920. The alcohol material has the spadix becoming at length equally dark-brown, nearly black, without dark points or stripes on the different organs. — Distinguished by the many very long staminodes of the feminine inflorescence.

*Borneo* (NIEUWENHUIS No. 991).

**Schismatoglottis maculata, v. A. v. R.**

Herba  $\pm$  40—50 cm. alta, caudice in specimine 1 cm. longo,  $\frac{1}{2}$  cm. crasso. Foliorum petiolus 20—27 $\frac{1}{2}$  cm. longus, basi vagina 5—7 $\frac{1}{2}$  cm. longa instructus, antice specie canaliculatus et cristis 2 anguste aliformibus marginatus; lamina in sicco tenuiter herbacea, elongato-cordata,  $\pm$  17 $\frac{1}{2}$   $\times$  7—8 cm., supra obscura, maculis pallidioribus, irregulariter sparsis ornata, subtus pallidior, lobo antico linea paullo extrorsum curvata apicem relative breviter acuminatum et graciliter apiculatum versus sensim angustata, lobis posticis brevibus, subsemiorbicularibus, 1—1 $\frac{1}{2}$   $\times$  2 $\frac{1}{2}$ —3 $\frac{1}{2}$  cm.; venae primariae 12—15 utrinque, apicem versus sursum curvae, apice vena collectiva crassa, intramarginali unitae, basales paullo radiantes, costales basi patentes; venae secundariae tertiariaeque quam primariae sensim graciliores. Pedunculus  $\pm$  5 cm. longus. Spatha  $\pm$  6 cm. longa; tubus ovoideo-fusiformis, 2 cm. longus; lamina conoideo-fusiformis, 4 cm. longa, acuminata. Spadix  $\pm$  4 cm. longus; inflorescentia feminea elongato-fusiformis, 2 cm. longa, 4 mm. crassa, basi obliqua, apice gracilis et laxiflora; ovaria oblonga vel ovata; stigma sessile, crasse pulvinuliforme; staminodia sparsa, pistilla aequantia, graciliter cylindracea, apice paullo globosc-capitato-incrassata; inflorescentia mascula clavata, femineam  $\pm$  aequans, parte basali fertili obconoideo-turbinata, a basi apicem versus linea paullo introrsum curvata sensim in partem apicalem sterilem, aequilongam, ellipsoideam, 5 mm. crassam, basi truncatam, apice rotundatam transiente; staminum antherae filamenta aequantes; thecae apice oblique truncatae, connectivo superatae; partis sterilis superioris staminodia elongato-ellipsoidea, inferiora apice rotundato-truncata, superiora apice obtusiuscula ad acutiuscula.

Plants cultivated in the Buitenzorg Gardens, probably gathered by NIEUWENHUIS (No. 1286), flowering August 1920, agree with this with the following exceptions: Leaves with the petiole shorter than the lamina; lamina smaller, 10—15  $\times$  4—6 cm., with the upper surface relatively dark-green, the spots pale-grey-green, the under surface pale-green; peduncle, spathe and spadix proportionally smaller; spadix 3 cm. long; feminine inflorescence 1 $\frac{1}{2}$  cm. long, pale-green; masculine inflorescence with the fertile basal portion  $\frac{3}{4}$  cm. long, dirty-white (rather pale-brown-yellowish), the sterile apical portion as long, pale-brimstone-coloured, characterized by the subacute highest staminodes.-- The smaller dimensions may be due to the conditions in which the cultivated plants are placed.

Near Sch. neo-guineensis N. E. BR.

Borneo (*Hajoep*, in forest, H. WINKLER No. 2199 p. p.? May 1908; erroneously referred by ENGLER to Sch. Nieuwenhuisii ENGL.).

**Schismatoglottis neo-guineensis** (LIND.), N. E. BR., in Gardn. Chron., 2nd Ser., XXIV, 776; *Sch. novo-guineensis*, N. E. BR., ENGL. & KRAUSE, in Pflzrch, LV (IV, 23 *Da*), Arac.-Philod.-Homal.-Schism., 113; *Colocasia neo-guineensis*, LIND., *Hort.*; LIND., in Ill. hort., XXVII, 68, tab. 380; XXVIII, 60, fig. C.



A specimen occurring in the Buitenzorg Gardens, formerly cultivated under the name of *Sch. calyptrata* Z. & M. var. *maculata forma albido-maculata*, is distinguished from the diagnosis given by ENGLER and KRAUSE in having the leaves with the petiole about as long as the lamina, the lamina  $2-2\frac{1}{2} \times$  as long as broad, with the spots of the upper surface pale-green or pale-yellow-green, with the basal lobes subsemiorbicular or rotundate-triangular, the primary veins 12-15 on a side, the spadix with the feminine inflorescence without or with very few slender staminodes which are about as long as the ovaries and slightly clavately thickened at the apex, the masculine inflorescence with the fertile and sterile portions somewhat longer, the staminodes subprismatical-obpyramidal, with the apex obtusely angular, truncate, more or less distinctly concave at the centre, especially in the higher ones.

**Schismatoglottis acutangula**, ENGL., in *Pflzrech*, LV (IV, 23 *Da*), *Arac.-Philod.-Homal.-Schism.*, 110.

If the plant now cultivated in the Buitenzorg Gardens under this name, flowering May 1920, is the same as that on which ENGLER based this species, the description will be as follows:

Relatively small herb with a very short caudex. Leaves with the petiole shorter than the lamina, 6-10 cm. long, sheathing  $\frac{1}{5}-\frac{1}{3}$  its length, dark-green, the anterior side flattened, rather slightly canaliculate, acutely and narrowly 2-cristate-marginate, the crests passing gradually into the lowest primary veins; lamina firm-herbaceous, thinner when dry, elongate-cordate,  $\pm 10-18 \times 3\frac{1}{2}-6\frac{1}{2}$  cm., the upper surface rather saturate-green, laxly and minutely pale-punctulate, glaucous-grey-green towards the sub-falcate, acuminate, apiculate apex, provided with a pale-grey-green, lacerated stripe on each side of and close to the green costa, the stripes laxly verruculose-punctulate, the under surface pale-green, subglaucous, the base cordate-emarginate, with the lobes semiorbicular or bluntly deltoid,  $\frac{1}{2}-1\frac{1}{2} \times 1\frac{1}{4}-3$  cm., separated by an acute or subrectangular sinus; primary veins 12-14 on a side, prominent beneath, the basal ones horizontal to radiating, strongly upcurved, the costal ones ascending, connected at the apex by an intramarginal, prominent collective vein; secondary and tertiary veins finer. Peduncle  $\pm 4\frac{1}{2}$  cm. long, green. Spathe with the tube obliquely ovate,  $\pm 2$  cm. long, 1 cm. diam., green, slightly longitudinally veined and pale-punctulate, the base very oblique; lamina conoid-ovoid, 4 cm. long,  $1\frac{1}{2}$  cm. diam, yellowish-green, longitudinally veined, the apex gradually acuminate. Spadix  $\pm 3\frac{1}{2}-4$  cm. long; feminine inflorescence conoid,  $\pm 1\frac{1}{2}$  cm. long,  $\frac{1}{2}$  cm. thick, without staminodes, the lower half or nearly the lower half connected with the spathe; ovaries ovoid, oblong or obovoid, often obtusely angular when seen from above, very pale-green (rather greenish-white); stigma sessile, discoid, pale-green or dirty-white; masculine inflorescence clavate, separated from the feminine by a nudate

interstice  $\pm \frac{1}{4}$ — $\frac{1}{2}$  cm. long, the fertile basal portion obconoid,  $\pm 1$  cm. long, 6— $7\frac{1}{2}$  mm. thick at the apex, dirty-white, the lower stamens sometimes sterile, clavate, the sterile apical portion semiellipsoidal,  $\pm 7\frac{1}{2}$  mm. long, 6— $7\frac{1}{2}$  mm. thick at the base, yellow-white to brimstone-coloured, the apex broadly rounded; stamens with the thecae short or more elongated, somewhat shorter to somewhat longer than the filaments, when young oblong, urceolate-attenuate at the truncate apex, when ripe cup-shaped, the outer side rather grooved; lower stamens sometimes sterile, clavate; staminodes of the upper portion elongate-cuneate, subprismatical, the apex rotundate-truncate, obtusely and irregularly 3-6-angular, with a single depression in the centre.

Forma typica. — *New Guinea* (Mt. Alkmaar, DJIBDJA).

Forma staminodiifera: Folia minora; petiolus  $4\frac{1}{2}$ —9 cm. longus,  $\frac{1}{3}$ — $\frac{1}{2}$  longitudinis vaginatus; lamina  $7\frac{1}{2}$ — $12\frac{1}{2}$   $\times$  3—5 cm.; venae primariae pauciores, 8—11 utrinque. Spadicis inflorescentia feminea pistillis inferioribus staminodiis perpaucis, attenuato-capitatis, longe stipitatis, quam pistillis paullo longioribus intermixtis; interstitium organum neutris sparsis, elongato-clavatis vel obconoideis, albidis munitum; parte apicali sterili staminodiis apice minutissime foveolatis. *New Guinea* (Mt. Alkmaar, DJIBDJA; cultivated in the Buitenzorg Gardens, flowering May—June 1920).

### **Schismatoglottis ornata, V. A. V. R.**

Herba foliis nutantibus usque 15—20 cm. alta, caudice perbrevis. Foliorum petiolus  $\pm 6$ —12 cm. longus, opaco-olivaceus, antice apicem versus applanatus vel leviter concavus, anguste 2-marginatus, ceterum teres, basi brevissime vaginatus; lamina in vivo subcoriacea, in sicco tenuis, lanceolata,  $\pm 9$ —15  $\times$  2—4 cm., saepe infra medium latissima, supra obscure viridis, opaco-velutina, copiose, minutissime albido-puncticulata, linea albida (non pellucida) angustissime marginata, secus costam viridem vitta pallide griseo-viridi, erosa ornata, subtus pallide viridis, basi rotundato-cuneata, potius acuta, apice longiuscule et anguste falcato-cuminata, apiculata; venae laterales ascendentes, apicem versus sursum curvatae, primariae  $\pm 6$ —8 utrinque, secundariae, tertiariae quaternariaeque quam primariae sensim graciliores. Pedunculus  $1\frac{1}{2}$ —2 cm. longus, viridis. Spatha  $\pm 3$  cm. longa, viridis, apicem versus pallescens; tubus obovoideo-globosus,  $\pm 1$  cm. longus et 7 mm. amplus; lamina conoidea,  $\pm 2$  cm. longa, a basi 4 mm. ampla apicem acutum versus sensim attenuata, basin versus convoluta, apicem versus leviter hians, marcescens. Spadix sessilis,  $2\frac{3}{4}$  cm. longus; inflorescentia feminea subconoidea, potius subcylindracea,  $\frac{1}{2}$  cm. longa, basi 3 mm. crassa, ad basin obliquam et apicem staminodiis 1-seriatis, brevibus, crassis, obpyramidatis, albidis (perpallide flavidis), apice applanatis, irregulariter angulosis munita; ovaria lageniformi-ovoidea, pallide viridia, in apicem longiusculum, subcylindraceo-conoideum, styliformem attenuata; stigma parvum,

rotundum, albidum; inflorescentia mascula subcylindracea, femineae arcte contigua, parte basali fertili  $\pm$  8 mm. longa,  $2\frac{1}{2}$  mm. crassa, supra medium paullo attenuata, pallide griseo-brunnea, parte apicali sterili  $\pm$  14 mm. longa, a basi 3 mm. crassa apicem obtusiusculum versus attenuata, albida (perpallide flavida); stamina brevia; thecae quam filamenta breviora; staminodia partis sterilis subprismatica, apice applanata, irregulariter angulosa.

The description is taken from a living specimen cultivated in the Buitenzorg Gardens.

*Borneo* (NIEUWENHUIS No. 1395).

### **Schismatoglottis Vanvuureni, V. A. V. R.**

Herba parva, + 25 cm. alta, caudiculo brevi. Foliorum petiolus quam lamina brevior, 8—9 cm. longus, pallide viridis, usque ad medium (nunc paullo brevius, nunc paullo longius) vaginatus, antice apicem versus planus vel subcanaliculatus, anguste cristato-2-marginatus, cristis in venas infimas transientibus; lamina herbacea, elongato-lanceolato-cordata,  $12-14 \times 3-4\frac{1}{2}$  cm., supra saturate viridis, copiose albido-puncticulata, secus costam pallidam vitta pallide griseo-viridi ornata, subtus pallide viridis; apex leviter falcatus, sensim acuminatus, breviter apiculatus; basis late sed non profunde cordata, lobis late triangularibus vel semiorbicularibus,  $\frac{3}{4}-1\frac{1}{2} \times 1\frac{1}{2}-2$  cm., sinu subrectangulari separatis, apice obtusis vel rotundatis; venae primariae 9—11 utrinque, basales radiantes, costales oblique ascendentes, apicem versus sursum curvae, basi decurrentes; venae secundariae tertiariaeque quam primariae graciliores. Pedunculus 7 cm. longus. Spathae tubus oblique obovoideus,  $2\frac{1}{4}$  cm. longus,  $1\frac{1}{2}$  cm. amplus, pallide viridis; lamina aperta, naviculari-ovoidea,  $4\frac{1}{2}$  cm. longa, flavido-albida, breviter et acute acuminata. Spadix  $4\frac{1}{2}$  cm. longus; inflorescentia feminea conoidea, 2 cm. longa,  $+ \frac{1}{2}$  cm. crassa, a basi usque ad medium cum spatha connata, apice sublaxiflora; ovaria oblongo-ovoidea, viridi-albida; stigma sessile, majusculum, discoideum, rotundum, viridi-albidum; staminodia inter ovaria pauca, sparsa, quam ovaria  $1\frac{1}{2}$ -plo longiora, alba, subcapitata, longe stipitata; inflorescentia mascula femineae contigua, clavata, parte basali fertili obconoidea,  $1\frac{1}{2}$  cm. longa,  $\frac{3}{4}$  cm. crassa, pallide brunneo-flavida, subalbida, parte apicali sterili semi-oblonga,  $\frac{3}{4}$  cm. longa, aequicrassa, eburnea, apice rotundata; antherae contiguae; staminum thecae cupuliformes, quam filamenta paullo breviores ad paullo longiores, apice truncatae; stamina inferiora hinc inde sterilia; partis sterilis superioris staminodia inferiora subprismatica, apice rotundato-truncata, obtuse angulosa, staminodia superiora elongato-clavata, apice rotundata, minute foveolata.

Near Sch. emarginata ENGL. - The description is taken from a living specimen cultivated in the Buitenzorg Gardens, flowering June 1920.

*Celebes* (Mt. Taloang, Capt. L. VAN VUUREN's Exploration Expedition).

**Schismatoglottis sublaxiflora**, V.A.V.R.

Sch. Vanvuureni V.A.V.R. affinis. — Foliorum lamina elongato-ovato-cordata, venis primariis 11—13 utrinque. Pedunculus 3—4 cm. longus. Spatha brevior, lamina pallide flavido-viridi. Spadix  $\pm 3\frac{1}{2}$  cm. longus; inflorescentia feminea  $\pm 2$  cm. longa, sursum distincte laxiflora; pistilla superiora pistillodiis concoloribus, obovoideo-obconoideis, rachidi appressis intermixta; ovaria crasse ovoidea vel obovoidea, apice  $\pm$  rotundata et in medio abrupte, brevissime styliformi-attenuata; staminodium ad basin inflorescentiae femineae 1 vidi, quam pistillum  $1\frac{1}{2}$ -plo longius, albidum, graciliter clavatum, basi in stipitem longum sensim transiente; inflorescentia mascula clavata, parte basali fertili elongato-obconoidea, pallide brunneo-flavida, 8 mm. longa, 3 mm. crassa, parte apicali sterili breviter oblongo-ovoidea, 7 mm. longa, supra basin truncatam 5 mm. crassa, pallide sulfurea, apice late rotundata; antherae paullo remotae; thecae breviter cupuliformes, apice truncatae, annuliformi-incrassatae, connectivo paullo superatae. — Ceterum Sch. Vanvuureni similis.

The differences of the dimensions, of course, are practically of secondary importance. — The description is taken from a living plant cultivated in the Buitenzorg Gardens.

*Celebes* (Mt. Siseh, Capt. L. VAN VUUREN'S Exploration Expedition).

**Schismatoglottis emarginata**, ENGL., in Pilzrch, LV (IV, 23 *Da*), Arac.-Philod.-Homal.-Schism., 93 p. p., fig. 59.

This specific name includes at least 3 absolutely different species, of which not a single one agrees with the entire diagnosis and figure given by ENGLER.

The plants gathered in *Borneo* by NIEUWENHUIS (Nos. 393, 420), mentioned by ENGLER, are too incomplete for a positive determination, one of them being sterile and the other bearing only a single fructiferous peduncle; at any rate they do not belong to Sch. emarginata as described and figured by ENGLER, the leaves of both having the lamina not „secus costam vittata” but very distinctly „irregulariter maculata (= irrorata)”; they belong probably either to Sch. pulchra N. E. BR. or to Sch. irrorata ENGL. — The Buitenzorg Herbarium possesses alas no trustworthy material of the said species but I am inclined to refer them to Sch. irrorata ENGL.

There are in the Buitenzorg Gardens 2 beds (XI B; X 15, 155) with totally different plants cultivated both under the name of Sch. emarginata ENGL. — Comparing them with ENGLER'S diagnosis and figure quoted above, it seems that ENGLER used one of them (No. 15, from an unknown habitat) and not the other (No. 155, from *Borneo*, NIEUWENHUIS No. 1302) for his description and drawing, since No. 155 has the leaves entirely equally green without any trace of being „vittata” on the upper side. The spadix of No. 15 has the feminine and masculine inflorescences not contiguous but separated by an interstice provided with more or less scattered neuter organs,

as is drawn in the figure. —No. 155 is still undeterminable because of the absence of complete, floriferous material; the leaves, however, agree exactly with those of No. 116 (*Borneo*, NIEUWENHUIS No. 1748, cultivated erroneously under the name of *Sch. longicuspis* ENGL.), which is a form of *Sch. Nieuwenhuisii* ENGL., differing from the typical form in having the leaves somewhat narrower and the feminine inflorescence provided with less numerous staminodes.

According to the information given above, the description of *Sch. emarginata* ENGL. should be modified as follows:

Caudex very short, copiously rooting. Leaves with the petiole  $7\frac{1}{2}$ –15 cm long or even longer, sheathing half its length or more, green, the upper part canaliculate on the anterior side, narrowly cristate-2-marginate, the crests passing into the lowest veins; lamina herbaceous, elongate-ovate-lanceolate,  $10$ – $15 \times 2\frac{1}{2}$ – $5$  cm., the upper surface dark-green, grey-green at the apex, provided on each side of the green costa with a row of mostly confluent, irregular, pale-grey-green spots which are placed closely to the costa or approaching the same, for the rest copiously pale-punctate; under surface pale-green; apex slightly falcate, acuminate, shortly apiculate; base rounded in the smaller leaves, more or less cordate-emarginate in the larger leaves, the lobes at best  $\frac{1}{2} \times 1\frac{1}{2}$  cm., broadly rounded, separated by a rectangular or very obtuse sinus; primary veins 7–11 on a side, the basal ones subhorizontal or somewhat radiating, the costal ones obliquely ascending, upcurved, decurrent at the base; secondary and tertiary veins finer than the primary ones. Peduncle  $3$ – $3\frac{1}{2}$  cm. long, pale-green. Spathe about  $4$ – $5$  cm. long; tube obconoid-obovate,  $1\frac{1}{2}$ – $2$  cm. long,  $\frac{1}{2}$ – $1$  cm. diam.; lamina closed conoid-fusiform, open ovate,  $2\frac{1}{2}$ – $3 \times 1\frac{1}{2}$  cm., yellowish, acuminate. Spadix  $2\frac{1}{2}$ – $3\frac{1}{2}$  cm. long; feminine inflorescence conoid,  $\pm 1$ – $1\frac{1}{2}$  cm. long,  $3$ – $5$  mm. thick, somewhat less than the lower half connate with the spathe; ovaries conoid-ovate, pale-green, the apex shortly styliform-attenuate; stigma sessile, discoid, round, pale-green; staminodes among the pistils few, mostly shorter or sometimes hardly longer than these, scattered, capitate or shortly clavate, white, relatively long-stalked; masculine inflorescence clavate,  $1\frac{1}{2}$ – $2$  cm. long,  $\frac{1}{2}$ – $\frac{3}{4}$  cm. thick, separated from the feminine by a short interstice provided with several, short-oblong, neuter organs; fertile lower portion obconoid,  $1$ – $1\frac{1}{4}$  cm. long, dirty-white; sterile apical portion semioblong,  $\frac{1}{2}$ – $\frac{3}{4}$  cm. long, not or hardly thicker than the fertile portion, ivory-white, the apex rounded; thecae cupuliform, shorter than the filament, truncate at the apex; staminodes not or hardly longer than the stamens, subprismatical or elongate-clavate, the apex rotundate-truncate or rounded, obtusely angular or roundish, minutely foveolate.

The description is taken partly from living specimens, partly from dried and from alcohol material. The flower, preserved in alcohol, has the stalks of the lower staminodes, the neuter organs and the higher staminodes provided with brownish points or short, longitudinal stripes wanting in the living flower.

*Borneo.*

**Schismatoglottis picta**, SCHOTT, in *Öst. Bot. Ztschr.*, VIII, 317; ENGL., in *Pflzrch*, LV (IV, 23 *Da*), *Arac.-Philod.-Homal.-Schism.*, 114.

Sterile specimens of the typical form, occurring in the Buitenzorg Herbarium, gathered by HALLIER F., mentioned by ENGLER, have the petiole sheathing much less than half its length.

Forma robusta, ENGL., l.c.: Specimens of this form, collected in *Java* and *Borneo*, cultivated in the Buitenzorg Gardens, one of which (Kremboeng) has been determined by ENGLER as *Sch. calyprata* Z. & M., var. *robusta*, have the petiole sheathing hardly more than  $\frac{1}{3}$  its length, the spadix with the feminine inflorescence conspicuously laxiflorous at the apex, and the masculine inflorescence occasionally provided with few neuter organs at the base. (? *Sch. calyprata* Z. & M., var. *ornata*).

**Schismatoglottis bifasciata**, ENGL., in *Pflzrch*, LV (IV, 23 *Da*), *Arac.-Philod.-Homal.-Schism.*, 107, fig. 66.

An undetermined plant from *Borneo* (NIEUWENHUIS No. 1311), cultivated in the Buitenzorg Gardens, which, for several reasons belongs very probably to this species, is distinguished from the diagnosis and figure given by ENGLER as follows: Petiole green, sheathing about  $\frac{1}{3}$  its length, terete, the anterior side narrowly sulcate towards the apex, longitudinally rugulose throughout, the lower side smooth; lamina cordate-triangular, subsagittate; the 2 stripes pale, yellowish- or greyish-green, with the base not reaching the margin of the sinus but reaching, and then suddenly ascending along, the lowest veins; primary veins 8—11 on a side; secondary, tertiary and quaternary veins growing gradually finer but the secondary ones not rarely nearly as thick as the primary ones. Spathe and spadix larger; feminine inflorescence conoid, 3—4 cm. long,  $\pm$  7—8 mm. thick, laxiflorous at the apex, provided with several scattered pale staminodes which are about  $1\frac{1}{2} \times$  as long as the pistils, obconoid, truncate at the apex, long-stalked; stigmata rather large, as broad as the ovaries, laterally contiguous (except in the upper ovaries); masculine inflorescence elongate, subcylindrical-fusiform, 5— $5\frac{1}{2}$  cm. long, 6—8 mm. thick at the middle, about  $\frac{1}{2}$  as thick at the base and the rotundate apex; fertile basal portion  $1\frac{1}{2}$ —2 cm. long, with the lower stamens intermixed with a few short-oblong or truncate, conoid neuter organs; sterile apical portion  $\pm$   $3\frac{1}{2}$  cm. long. — The description of the leaves is taken from the living plant, of the flower from material preserved in alcohol, which has the stalks of the lower staminodes, the higher staminodes, the filaments and the apices of the anthers provided with dark, brown, very short stripes or minute points.

I should be inclined to consider the specimen quoted as a new species were it not that in several cases the plants mentioned by ENGLER in his monograph proved to me to differ much from his diagnoses and drawings.

**Schismatoglottis trifasciata**, ENGL., in Pflzrch, LV (IV, 23 *Da*), Arac.-Philod.-Homal.-Schism., 106, fig. 65.

NIEUWENHUIS' No. 2120 (*Borneo*), cultivated in the Buitenzorg Gardens, formerly determined by ENGLER but not mentioned in his monograph, is distinguished as follows: Leaves with the petiole shorter than the lamina, 3 — 7 $\frac{1}{2}$  cm. long, sheathing half or more than half its length, dirty-red, or green towards the apex, the anterior side flattened and provided with 2 opposite, horizontally spreading, slightly undulated, red (afterwards green), narrowly wing-like crests passing gradually into the lowest primary veins; lamina when fresh firm-herbaceous, when dry thinner, 7 — 14  $\times$  3 $\frac{1}{2}$  — 6 $\frac{1}{2}$  cm., the upper surface when fresh dark-green, copiously but very minutely pale-punctulate and foveolate, pale-green at the often falcate-acuminate apex, provided with 4 longitudinal rows of commonly (though not invariably) confluent, pale-grey-green, irregularly lacerated spots, the 2 inner rows placed closely along the green costa, the 2 outer rows about medial between the costa and the margin, minutely verruculose on the spots; primary veins 6—9 on a side. Spathe with the tube to 3 cm. long, olive-green, somewhat darker-striated, copiously but very minutely pale-punctulate; blade to 6 cm. long, very pale-green, pale-dirty-rosy towards the base, finely, longitudinally striated, red-margined. Spadix 5 $\frac{3}{4}$  — 8 cm. long; feminine inflorescence cylindrical or very slightly conical, to 2 $\frac{1}{2}$  cm. long, to 4 mm. thick, the dorsal side adnate to the spathe except at the oblique apex; ovaries ovate or oblong, pale-green; stigma discoid, very pale-green or dirty-white, slightly 2—3-lobed when young; staminodes clavate or shortly stipitate-obconoid, pale-yellow-brown, partly scattered among the pistils, partly grouped at the apex of the inflorescence, partly arranged in a long row encircling the oblique base of the spadix; masculine inflorescence much elongated; fertile basal portion subcylindrical, to 2 $\frac{1}{4}$  cm. long, to 3 mm. thick at the middle, thickened slightly towards the base and apex and passing gradually into the thicker basal and apical portions of the spadix, pale-rosy (the thecae nearly white, the connective rosy); sterile apical portion elongate-conoid-fusiform, to 5 $\frac{3}{4}$  cm. long, to 4 mm. thick below the middle, narrowed gradually towards the subacute apex, when young rosy-orange, soon pale-orange, finally pale-brown-orange, sometimes nudate at the very apex (destitute of staminodes); staminodes clavate, rounded at the apex, irregularly 4—6-angular when seen from above. — Material of NIEUWENHUIS' No. 1991, occurring in the Buitenzorg Herbarium, has the petiole to 8 cm. long, sheathing  $\frac{1}{3}$  its length, the lamina to 17  $\times$  9 cm.

**Scindapsus roseus**, V. A. V. R.

Caudex scandens, internodiis  $\pm$  4 cm. longis, 2 mm. crassis. Foliorum petiolus 30—40 cm. longus, fere usque ad geniculum  $\pm$  2 cm. longum vel paullo brevius vaginatus; vagina coriacea, a basi apicem versus sensim angustata, decidue scarioso-marginata; lamina in sicco crassiuscula, coriacea,

ovato- vel obovato-oblonga, 20—50  $\times$  15—18 cm., inconspicue inaequilatera, apice abrupte, brevissime aciminata, basi obliqua, inaequilatera, altera leviter cordato-emarginata, altera rotundata vel iate rotundato-cuneata; costa leviter falcato-curvata; venae primariae 15—20 utrinque, basales  $\pm$  horizontales, superiores erecto-patentes, medianae patentissimae, supra impressae, subtus conspicue prominentes, apice graciles, sursum curvae, marginem laminae non attingentes; venae ceterae sensim graciliores, tertiariae quaternariaeque vix prominentes. Pedunculus  $\pm$  6 cm. longus. Spatha elongato-conoideo-ovoidea,  $\pm$  17 cm. longa, in vivo perpallide aurantiaca, apicem versus sensim acutata. Spadix brevissime stipitatus, conoideo-cylindraceutus,  $\pm$  14 cm. longus, 2 cm. crassus, in vivo roseus, apicem subacutum versus sensim attenuatus; ovaria  $\pm$  6 mm. alta, basi compressa, apice  $\pm$  3 mm. crassa, plana,  $\pm$  6-angulosa, in sicco leviter verruculoso-rugulosa; ovaria superiora sterilia, apice irregulariter angulosa; stylus perbrevis, in cavo centrali saepe immersus; stigma relative latum, rotundum vel subrotundum (latissime oblongum), aurantiacum, apice applanatum.

*Sumatra* (Mt. Merapi, in forest, alt. 1200 m., H. A. B. BÜNNEMEIJER No. 5058, 6 October 1918).

**Scindapsus splendidus**, V. A. V. R.

Planta robusta, usque ad  $\pm$  8 m. alte scandens, caudice  $\pm$  8 cm. crasso. Foliorum petiolus usque 90—100 cm. longus, usque ad geniculum 6—8 cm. longum vaginatus; lamina in sicco coriacea, relative crassa, subovato-oblonga, usque 90—100  $\times$  45—50 cm., apice obtusiuscula, vix acuta, basi inaequilatera, altera late subcordato-emarginata, altera late rotundata vel latissime rotundato-cuneata; venae primariae complures, usque 30—40 utrinque, superiores suberectae, basales sensim horizontales, crassae, apice sursum arcuatae, subtus valde prominentes, supra impressae; venae secundariae nunc venis primariis, nunc venis tertiariis subsimiles; venae tertiariae quaternariaeque sensim gracillimae. Pedunculus  $\pm$  12 $\frac{1}{2}$  cm. longus. Spatha elongato-conoideo-ovoidea, 20—25 cm. longa, primum pallide flavido-viridis, postremo . . . , acuta, persistens. Spadix brevissime stipitatus, elongato-conoideo-cylindraceutus, usque 17 $\frac{1}{2}$ —20 cm. longus, floriferus 2—2 $\frac{1}{2}$  cm., fructiferus usque 3 $\frac{1}{2}$  cm. crassus, obtusus; ovaria usque  $\frac{3}{4}$  cm. alta, basi compressa, apice 6-angulosa, pallide caeruleo-vidia; stylus conoideus, fere 2 mm. altus, pallide brunneus; stigma crasse pulvinatum, latitudinem apicis styli aequans, rotundum vel subrotundum; baccae ovariis subsimiles sed paullo majores; semen erectum, elongato-obovatum, funiculo laterali.

*Sumatra* (Deli, Sibolangit, in primeval and secondary forest, alt. 500 m., J. A. LÖRZING No. 5277, 18 September 1917).

**Scindapsus suffruticosus**, V. A. V. R.

Planta suffruticosa, stolones breviter repentes, apice ascendentes, 20 cm. altos, foliis inclusis usque 75 cm. altos emittens. Foliorum pe-



tiolus 15—27½ cm. longus, canaliculatus, usque vel fere usque ad geniculum ± 1 cm. longum vaginatus; vagina scarioso-coriacea, partim decidua, partim persistens; lamina coriacea, oblanceolata, ± 30—36 × 8—12 cm., paullo supra medium latissima, non valde inaequilatera, basi acuta, apice acuminata, breviter canaliculato-apiculata; venae ascendentes, apicem versus sursum curvae, in sicco utrinque prominentes, supra non valde, subtus distincte diversae; venae primariae usque 10—14 utrinque, venis secundariis tertiariisque gracilioribus, plerumque 5—7 interpositis. Pedunculus 12½ cm. longus vel forsitan longior. Spatha primum pallide viridis, demum pallide flava, caduca. Spadix brevissime (vix) stipitatus, cylindraceus, 5—7½ cm.

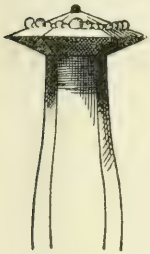


Fig. z a.

longus, apice rotundatus, florifer pallide viridis ad pallide flavidus, 1¼ cm. crassus, fructifer crassior; ovaria basi compressa, sursum prismatica, 4 mm. longa, in sicco apice peltato-incrassata, 6-angulosa, 1½—2 mm. crassa, applanata, acute marginata, inter stylum et marginem verrucis rotundis, hic illic confluentibus munita (fig. z a); ovaria suprema sterilia; stylus parvus, breviter et crasse conoideus; stigma perparvum, oblongum vel hic illic rotundum vel punctiforme; baccae quam

pillula paullo longiores, medio ventricoso-incrassatae; semen oblique obovoideo-oblongum, erectum, leviter curvatum, ad funiculum lateraliter affixum. (Fig. z b).

*Sumatra (Deli, Sibolangit, on dry mountain ridge in open forest, alt. ± 400 m., J. A. LÖRZING No. 5543, 6 March 1918).*

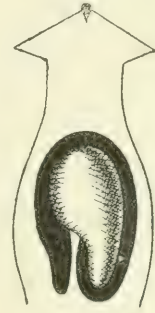


Fig. z b.

**Scindapsus cuscuaria** (AUBL.), PR.; v. A. v. R., this Bull., 1<sup>5</sup>, 1920, 388.

The separation of *Sc. cuscuaria* PR. and *Sc. marantifolius* MIQ. in my previous paper on Malayan Araceae, quoted above, was based on a comparison of the plants of the Buitenzorg Herbarium, determined several years ago by ENGLER as *Sc. cuscuaria*.

Another plant, recently gathered in *Java (Preanger Regencies, R. C. BAKHUIZEN VAN DEN BRINK No. 3067)*, has given me cause to a new comparison and now I am inclined to consider all the Javanese plants determined as *Sc. cuscuaria* as really distinct from our single Amboinese one which may represent the typical form of *Sc. cuscuaria* PR.

The said Amboinese specimen (BOERLAGE No. 514, not 574 as is mentioned in ENGLER's monograph) consists of 1 small and 2 large leaves besides a fructiferous spadix and is distinguished from my previous diagnosis quoted above as follows: Leaves with the petiole to 40 cm. long, the sheath coriaceous, persistent; lamina chartaceous, relatively thin, ovate, about 2 × as long as broad (20—40 × 11—21 cm.), broadest at about 1/3 above the base, the base obliquely, broadly rounded; costa beneath more or less

keeled, of the same colour as the lamina; veins when dry very distinct on both sides, fine but prominent, the primary and secondary ones nearly equal, the former, however, occasionally (few to several on one side or on both sides of the costa) beneath thickened gradually from the apex towards the base. Spadix at length about 15 cm. long by 2 cm. thick, with the highest pistils sterile; style very short; stigma oblong, of the higher fertile pistils rather rounded.

*Amboina.*

**Scindapsus marantifolius**, MIQ.; v. A. v. R., this Bull., 1<sup>5</sup>, 1920, 388.

The Javanese plants referrible to this species are distinguished from the Amboinese plant mentioned above in having the petiole with the margin of the sheath scariosa, dilacerate and deciduous, the lamina coriacea, somewhat thicker, oblong-ovate, about  $2\frac{1}{2} - 3 \times$  as long as broad (to  $30 - 45 \times 10 - 17\frac{1}{2}$  cm.), broadest commonly in the lower half, occasionally at the middle, the base occasionally obliquely and broadly rotundate-cuneate, the costa beneath when dry rather rounded (semiterete), the veins somewhat less distinct and less prominent but the occasionally thickened primary ones much more thickened in the lower half, the spadix at length about 10 cm. long, the styles varying from very short to distinctly conically elongated (see SCHOTT, Gen. Aroid., tab. 80), which may be due to different circumstances independent from the species, the stigma round or occasionally suboblong.

The living plant has the spadix yellow.

*Java.*

**Scindapsus javanicus**, v. A. v. R., this Bull., 1<sup>5</sup>, 1920, 389.

This species, which is surely very neary related to the preceding and may perhaps be considered as a narrow-leaved form of it, is distinguished from it in having the lamina lanceolate, about  $4 \times$  as long as broad ( $25 - 42 \times 6 - 11$  cm.), broadest at or a little below the middle, the base as a rule obliquely rotundate-cuneate, occasionally obliquely rounded; extraordinarily thickened primary veins and elongated styles wanting (in the material in hand).

The living plant has the spathe yellow, soon desiccate and becoming black, caducous, the spadix yellow or pale-orange.

**Scindapsus alpinus**, v. A. v. R.

Scandens. Ramorum internodia  $\pm 1\frac{1}{2}$  cm. longa. Foliorum petiolus  $\pm 35 - 40$  cm. longus, canaliculatus, usque ad geniculum  $\pm 1\frac{1}{2}$  cm. longum vaginatus; vagina margine scariosa, dilacerata caduca; lamina coriacea, crassiuscula, elongato-ovato-lanceolata, plus minusve falcato-curvata,  $\pm 35 - 40 \times 8 - 10$  cm., leviter inaequilatera, infra medium latissima, basi oblique rotundata vel uno latere late rotundato-cuneata, apice acuta; costa in

sicco subtus rotundata (semiteres), quam lamina obscurius colorata; venae patentes; venae primariae 8—10 utrinque, supra leviter impressae, subtus distincte prominentes, venis secundariis tertiariisque pluribus, multo gracilioribus, vix prominentibus interpositis. Pedunculus  $\pm 3\frac{1}{2}$  cm. longus. Spatha cylindracea, 11 — 12 cm. longa, hians, pallide aurantiaca, acuta. Spadix sessilis, cylindraceus,  $\pm 7$  cm. longus et  $1\frac{1}{2}$  cm. crassus, obtusus; ovaria  $\pm 5$  mm. longa, basi compressa, apice applanata, 4 — 6-angulosa, 2 — 3 mm. lata, rosea, ruguloso-verruculosa; stylus brevissimus; stigma relative magnum, planum, late ovale, quam stylus latius, flavidum.

*Sumatra (Mt. Merapi, in forest, alt. 1800 m., H. A. B. BÜNNEMEIJER No. 4998, 30 September 1918).*

PLANTAE NOVAE VEL CRITICAE EX HERBARIO ET  
HORTO BOGORIENSI. II.

Auctore J. J. SMITH.

(Tabula 4—10).

**Gymnosiphon aphyllum** BL. Enum. I (1827), 29; MIQ. Fl. Ind. Bat. III (1855), 615; KDS. Exk. fl. I (1911), 344. (Burmanniaceae). Tab. 4.

Planta florens ad c. 14 cm. alta Rhizoma breve, teres, c. 0.75 cm. longum, squamis erecto-patentibus imbricatis subulatis dense obtectum, radicibus tenuibus ramosis Caulis erectus, tenuis, pauciramosus, plus minusve tortilis, internodiis ad c. 0.6 cm. longis, squamis parvis adpressis ad patentibus triangulis vel late triangulis obtusis vel obtusissimis caulem  $\frac{2}{3}$  amplectentibus concavis. Pedunculus cauli similis, rectus, ad c. 7 cm. longus, squamis laxioribus, cyma bi- interdum unibrachiata cum flore terminali, brachiis monochasium formantibus, laxe ad c. 6 floris, rachide flexuosa, tenui, ad c. 4 cm. longa. Bracteae rachidem  $\frac{2}{3}$  amplectentes, valde cucullato-concavae, suborbiculares, obtusissime apiculatae, ad c. 0.23 cm. longae, superiores decrescentes. Flores patentes, c. 0.46 cm. diam., cum ovario 0.83 cm. longi, pedicello tenui, c. 0.46 cm. longo. Tubus floralis cylindricus, apicem versus attenuatus, c. 0.325 cm. longus, basi c. 0.18 cm., apice 0.125 cm. diam. Sepala 3, divergentia, apice recurvula, suborbicularia, obtusa, c. 0.24 cm. longa, disco ovato convexo, marginibus latis incurvulis valde undulatis. Petala minima, supra antheram inserta, lanceolata, apice vix incurvula, obtusiuscula, convexa, c. 0.08 cm. longa. Antherae 3, petalis oppositae, in c. 0.35 cm. supra tubi basin insertae, sessiles, transversae, c. 0.07 cm. latae, thecis rima transversa in valvas 2 dehiscentibus, connectivo thecis brevior, subovato, obtuso, late subcanaliculato. Ovarium inferum, turbinato-subcylindricum, apice vix constrictum, basi abrupte in pedicellum contractum, c. 0.27 cm. longum, 0.175 cm. diam.; stylus cum stigmatibus c. 0.38 cm. longus, ad stigmata c. 0.075 cm. diam.; stigmata divaricata, lata, marginibus incurvis et postice contiguis oblique infundibuliformia, margine antico crassiora, truncata, papillosa. Fructus turbinatus, hyalinus, c. 0.24—0.3 cm. longus, fere 0.2 cm. diam., tubo oblique curvulo coronatus.

J a v a: Megamendoeng. (BLUME). Buitenzorg, Goenoeng Soenarari, 900—1000 m., in very shady forest. (C. A. BACKER n. 6322, January 1913). Goenoeng Gede near Djasinga, 800—1000 m., on decayed trees and in

leafmould in the forest, abundant in many spots. (C. A. BACKER nrs. 10125, 10256 and 10325, November 1913). Pasir Kempoel, Nirmala, 1100 m in forest, many plants. (C. A. BACKER n. 11018, December 1913). Goenoeng Tjipoetih near Tjiampea, in leafmould in forest, many plants. (R. C. BAKHUIZEN VAN DEN BRINK n. 4240, September 1920, without flowers).

Since BLUME this plant had not been met with again, until Mr. BAKER found it abundantly in the localities cited above. Like most saprophytes, it probably can be seen only for a short period of time.

„Plant violet, segments of flowers white to violet”. (C. A. BACKER).  
Description from plants preserved in alcohol.

TAB. 4.

Fig. 1—2.— *Plantae*  $\frac{1}{1}$ .— Fig. 3. *Basis caulis*  $\frac{4}{1}$ .— Fig. 4. *Flos*  $\frac{4}{1}$ .— Fig. 5. *Petalum*  $\frac{21}{1}$ .— Fig. 6. *Anthera*  $\frac{24}{1}$ .— Fig. 7. *Apex styli*  $\frac{33}{1}$ .— Fig. 8. *Fructus*  $\frac{4}{1}$ .

***Rinorea gaultheriiflora*** J. J. S. n. sp. (Violaceae). Tab. 5.

Frutex multiflorus. Folia elliptico-oblonga ad lanceolata, longe acuminata, minute mucronulato-serrulata, subtus in nervis tantum parce pilosa. Inflorescentiae axillares, laterales et terminales, paniculiformes, puberulae. Flores nutantes. Corolla suburceolata, petalis ellipticis obtusis. Discus breviter 5lobus. Anthera basi utrinque penicillata, appendice apicali ovato-rhombea, appendice thecarum minuta triangula. Ovarium pubescens.

Frutex, ramulis patentibus, sicco fulve pubescentibus deinde glabrescentibus et lenticellis conspicuis verruciformibus donatis. Folia alterna, brevissime petiolata, elliptico-oblonga ad lanceolata, longe acuminata, plerumque acuta, basi saepissime angustata saepe paulo obliqua obtusa raro subrotundata in foliis minoribus acuta, minute adpresse mucronulato-serrulata, supra glabra basi in costa media tantum tomentella, subtus in nervis praesertim in costa media parce adpresse pilosa et in axillis nervorum perforata barbataque, in utraque parte costae mediae nervis lateralibus c. 9—12 patentibus incurvis intra marginem anastomosantibus, infimis brevissimis approximatisque, omnibus in foliis adultis supra et praesertim subtus prominentibus, dense reticulato-venosa, venis in foliis adultis utrinque prominulis, c. 4.5—16 cm. longa, 1.5—5 cm. lata; petiolus puberulus vel pubescens, c. 0.15—0.375 cm. longus. Stipulae 2, caducae, amplectentes, subulatae ad lineares, concavae, plus minusve ciliatae, interdum dorso ad basin puberulae, c. 0.6—0.9 cm. longae, cicatricem annularem relinquentes. Inflorescentiae numerosae, axillares, laterales et terminales, saepe in ramulis brevibus, foliis novellis synanthae, petiolum multo superantes, pedunculatae, laxe vel plus minusve conferte paniculiformes, secundae, e cymis pluribus brevibus patentibus pedunculatis ad c. 7floris compositae, pedunculo tereti, puberulo, c. 0.3—1.3 cm. longo, rachide subtereti, puberula, c. 2—6.5 cm. longa, pedunculis secundariis ad c. 0.6 cm. longis. Bractae primariae ad vel saepe supra basin ramulorum, laxe adpressae, ovato-triangulae, acu-

tae, concovae, ciliolatae et dorso saepe plus minusve puberulae, ad c. 0.47 cm. longae, superiores et secundariae minores. Flores nutantes, breviter pedicellati, pedicello cum rachide articulado, tereti, apice vix incrassato, minute patentissime hirtello-puberulo, c. 0.175 cm. longo. Sepala 5, paulo inaequalia, erecta, corolla laxe adpressa, exteriora ovata, interiora subovalia, obtusa, praesertim exteriora minute apiculata, concava, dorso inferne parce patentissime hirtello-puberula, superne glabra, intus glabra, basi excepta minute ciliolata, basi 3nervia, nervis exterioribus supra basin furcatis, c. 0.37—0.47 cm. longa, 0.23—0.28 cm. lata. Corolla suburceolata, c. 0.375 cm. alta, 0.4 cm. diam.; petala 5, sinistrorsum imbricata, erecta, concava, apice recurva, elliptica, obtusa, glabra, 1nervia, c. 0.45 cm. longa, 0.3 cm. lata. Discus cupuliformis, apice dilatatus, breviter et late 5lobus, lobis crenulato-lobulatis extus convexis intus concavis, extus longitudinaliter 5-sulcatus, carnosulus, glaber, c. 0.225 cm. diam., 0.07 cm. altus. Stamina 5, diosi faciei interiori inserta, erecta, fere 0.3 cm. longa; filamenta brevina, crasse subulata sed apice connectivo dorso adnata, apicem thecarum fere attingentia, paulum a dorso compressa, glabra, parte libera c. 0.1 cm. longa; antherae erectae, dorsifixae, introrsae, appendice connectivi obtusangule incurva imbricatae, ambitu plus minusve ovato-rhombeae, c. 0.2 cm. longae, fere 0.1 cm. latae, thecis parallelis, subremotis, apicem versus ampliatis, obliquis, obtusis, basi rotundatis et pilis paucis patentissimis penicillatis, rima longitudinali (in praefloratione) dehiscentibus, parte antica quam posticam manifeste longioribus et apice appendice humili triangula instructis, fere 0.1 cm. longis, connectivi appendice terminali, erecta, obtusangule incurva, leviter recurvula, ovato-triangula, plus minusve quinquangulari, anguste obtusa vel subacuta, late angulato-canaliculata, lateribus intus plus minusve convexa, membranacea. Ovarium ovoideo-globosum, obtusissimum, patentissime pubescens, c. 0.17 cm. altum, 0.15 cm. diam., abrupte in stylum anguste lageniformem basi contractum glabrum apice truncatum c. 0.2 cm. longum contractum. Capsula immatura lateraliter compressa, oblique orbiculari-ovata, puberula, c. 0.8 cm. longa, 0.65 cm. lata, sepalis petalis et disco suffulta, stylo coronata.

Java: Priangan, between Bodjong Lopang and Lengkong, 600 m. in the bush, 1 plant. (C. A. BACKER n. 17003, November 1914). Between Lengkong and Tjitjoeroeg, 600 m., on the edge of a secondary forest, 2 plants. (C. A. BACKER n. 17174, November 1914).

This is the prettiest of the Javanese species and with the largest flowers, which are produced in profusion.

It seems to be very rare as till now only three plants have been met with.

Description from herbarium and materials preserved in alcohol.

"Shrub, 1.5—2 m. high. Calyx white or somewhat greenish, petals pure white, disc greenish yellow, filament white, appendix white with a brownish yellow base, ovary green." (C. A. BACKER).

## TAB. 5.

Fig. 1. Ramulus florens  $\frac{1}{1}$ .— Fig. 2. Pars folii  $\frac{4}{1}$ .— Fig. 3. Inflorescentia  $\frac{2}{1}$ .— Fig. 4. Flos  $\frac{6}{1}$ .— Fig. 5—9. Sepala  $\frac{7}{1}$ .— Fig. 10. Petalum  $\frac{9}{1}$ .— Fig. 11. Stamen immaturum  $\frac{17}{1}$ .— Fig. 12. Stamen adultum  $\frac{12}{1}$ .— Fig. 13. Pistillum cum disco  $\frac{17}{1}$ .

**Gymnartocarpus triandra** J. J. S. n. sp. (Moraceae). Tab. 6—8.

Folia cuneato-obovata, saepe brevissime obtuse acuminata, glabra, coriacea, 4.5—9 cm. longa. Stipulae parvae, in unam triangulam connatae. Stamina 3, filamenta crassiuscula. Inflorescentiae ♀ et syncarpia acute conico-echinata.

Arbor ramulis crassiusculis, minute puberulis. Folia alterna, petiolata, obovata, apice rotundata truncato-rotundata vel obtusa, saepe brevissime obtuse acuminata, basi sensim cuneata late cuneata vel obtusa, integerrima, glabra, in utraque parte costae mediae supra leviter canaliculatae subtus obtuse prominentis nervis lateribus c. 6—7 satis patentissimis rectis inter marginem arcuato-anastomosantibus sicco subtus prominentibus, irregulariter reticulato-venosa, firmiter coriacea, c. 4.5—9 cm. longa, 2.8—5 cm. lata, sicco supra nitidula subtus opaca; petiolus longiusculus, teres, apice supra sulcatus, glaber, nitidulus, c. 2—3.2 cm. longus. Stipulae 2, parvae, in unam intrapetioliarem triangulam concavam dorso bicarinatam puberulam deciduam c. 0.2—0.23 cm. longam omnino connatae. Inflorescentiae axillares, pedunculatae, densissimae. Inflorescentiae ♂ globosae, perianthii segmentorum 2—3 apicibus liberis incrassatis induratis depresso conicis angulatis acutiusculis acutisve initio tuberculatae, c. 3.2—4.2 cm. diam., involucri adpresso in lobos 3—4 late triangulos plus minusve apiculatos concavos parce puberulos crassos partito c. 1.2—1.3 cm. diam. suffultae, pedunculo crassiusculo, tereti, basi apiceque incrassato, minute puberulo, c. 0.7—5.5 cm. longo. Perianthium ♂ intus dense adpresso longe sericeum, stamina arcte includens. Stamina 3, tota c. 0.7 cm. longa; filamenta inclusa, basi vel ultra medium connata, ceterum contigua, glabra, crassa, carnosula, c. 0.45—0.46 cm. longa; antherae exsertae, divergentes, basifixae, extrorsae, ovatae ad ovato-oblongae, obtusae, basi cordulatae, c. 0.24—0.25 cm. longae, connectivo facie interiore convexo-incrassato, thecis rima longitudinali dehiscentibus. Inflorescentiae ♀ subglobosae, perianthii segmentorum 2—3 apicibus basi excepta liberis conspicuis erectis induratis conicis angulatis acutis glabris echinatae, involucri adpresso in lobos c. 3 triangulos ad late ovatos obtusos interdum plus minusve apiculatos concavos minute puberulos crassiusculos partito suffultae, intus perianthiis inferne tenuibus superne incrassatis faviformes, sicco c. 3.5 cm. altae, pedunculo valido, tereti, apice incrassato, parce et minute puberulo, nitido, c. 3—4.2 cm. longo. Perianthia ♀ inferne ovarium laxè includentia, superne incrassata et styli partem superiorem arcte adpressa, intus glabra, saepe plurima apice conico non aperto pistillum imperfectum omnino includente sterilia. Ovarium

oblique ovale ad oblique globosum, c. 0.125 cm. longum; stylus inclusus, elongatus, filiformis, cum stigmatе conspicuo exserto segmenta perianthii aequante compresso oblique cuneato-flabellato apice irregulariter denticulato c. 0.6 cm. longus. Syncarpium magnum, irregulariter depresso globosum, plus minusve irregulariter lobatum, dense echinatum, echinis (perianthii apicibus) inaequalibus conicis angulatis acutis c. 0.8 cm. longis, c. 13—15.5 cm. diam., 12 cm. altum. Achenia oblique ovoideo-ovalia, c. 2.9 cm. longa, 1.9 cm. diam., pericarpio molliter coriaceo marmorato, endocarpio osseo. Semen oblique ovoideum, c. 1.9 cm. longum, testa membranacea; cotyledones crasse carnosae, inaequales, supra basin arcte applicato-incurvae, subovales, apice abrupte contractae, obtusae, basi angustatae, radícula compressa, lineari, c. 0.6 cm. longa.

Sumatra: Palembang, Banjoeasin, 20 m., on swampy land. (W. GRASHOFF n. 798, November 1915, ♂ buds only; native name *Koeloes*).

Sumatra's Oostkust: Poeloe Bengkalis, Tamansari, 5 m., in swampy forest. (V. M. A. BEGUIN n. 316, September 1919, male flowers; native name *Tengajoen*). Soengei Missigit, 6 m., in swampy forest. (V. M. A. BEGUIN n. 583, June 1920, male flowers and ripe fruits, native name *Tengajoen*), Sengoro, 4 m., in forest; a few trees. (V. M. A. BEGUIN n. 536, December 1919, very young buds).

Till now only two species of *Gymnartocarpus* have been described, viz. *G. venenosa* (ZOLL). BOERL. from Java and Sumatra, and *G. Woodii* MERR. from the Philippine Islands. The latter, however, seems to be only imperfectly known and the almost sterile specimens in the Buitenzorg Herbarium closely resemble *G. venenosa*.

The new species found by Messrs. GRASHOFF and BEGUIN, collectors of the Museum for Economic Botany in Buitenzorg, is well characterized by its much smaller obovate leathery leaves, three stamens with thickish filaments connate below, longer ♀ inflorescences, with the anthocarps much longer and thornlike.

It appears from the notes of the collectors that *Gymnartocarpus triandra* is a large tree, with the trunk 13—20 m. high and 1.6—2.2 m. in circumference and buttresses 0.5—1.4 m. high. Bast 1—2.2 cm. thick, outside brownish yellow, inside yellowish white, with white latex, which in the open soon coagulates and turns light yellow. Crown dense, 15—10 m. high, branches slanting. Male flowers scenting strongly of bran.

The fruits are said to be edible.

Description from herbarium and material preserved in alcohol and formaline.

TAB. 6.

Fig. 1. Ramulus florens  $\frac{1}{1}$ . — Fig. 2. Inflorescentia ♀  $\frac{1}{1}$ .



## TAB. 7.

Fig. 1. Inflorescentiae ♂  $\frac{1}{1}$ .— Fig. 2. Sectio floris ♂  $\frac{4}{1}$ .— Fig. 3. Perianthium ♂ intus visum  $\frac{4}{1}$ .— Fig. 4—5. Stamina  $\frac{4}{1}$ .

## TAB. 8.

Fig. 1—3. Flores ♀  $\frac{6}{1}$ .— Fig. 4. Flos ♀ sterilis  $\frac{6}{1}$ .— Fig. 5. Pistillum  $\frac{7}{1}$ .— Fig. 6. Syncarpium sectio  $\frac{1}{1}$ .— Fig. 7. Achenium  $\frac{1}{1}$ .— Fig. 8—9. Semen  $\frac{1}{1}$ . Fig. 10—11. Embryo  $\frac{1}{1}$ .

**Phyllanthus acutissimus** MIQ. Fl. Ind. Bat. I, 2 (1859), 369; MUELL. ARG. in DC. Prodr. XV, 2 (1866), 419; J. J. S. in KDS. et VAL. Bydr. 12 Booms. Java (Meded. Dep. Landb. no. 10) (1910), 88. — *Scepasma longifolium* HASSK. Cat. Hort. Bog. alt. (1844), 242; in Tijdschr. Nat. Gesch. en Phys. X (1843), 143. — *Diasperus acutissimus* O. K. Rev. gen. pl. II (1891), 598. (Euphorbiaceae).

Frutex vel fruticulus, caule primario folia rudimentaria alterna gerente, ramulis patentibus, teretibus, basi valde incrassatis, parte inferiore rectis et folia rudimentaria gerentibus, superne flexuosis, tenuibus, verruculoso-papillosis, foliatis. Folia alternatim bifaria, brevissime petiolata, oblique ovata vel oblongo-ovata, longe acuminata, acuta, basi late oblique obtusa, plerumque plus minusve late cuneata, integerrima, in utraque parte costae mediae supra subtusque prominentis nervis lateralibus c. 5—6 patentibus curvatis adscendentibus intra marginem anastomosantibus tenuibus supra plerumque impressis subtus prominentibus, reticulato-venosa, membranacea, nitide atroviridia, subtus paulo dilutiora, ad c. 10 cm. longa, 3.8—4.1 cm. lata, infima et summa plerumque minora, novella rubescentia et in costa media subtus praesertim basin versus minute verruculosa; petiolus teres, dense minute verruculosus, fuscescens, c. 0.2—0.25 cm. longus. Stipulae e basi late triangula subulato-acuminatae, c. 0.2—0.23 cm. longae. Inflorescentiae axillares et in ramulorum parte inferiore, fasciculares. Flores c. 0.4 cm. lati, pedicellati, pedicello apice in torum obconicum incrassato dilute viridi, c. 0.24 cm. longo. Sepala 4, basi erecta et marginibus tegentia, medio fere rectangule recurva, ovata, obtusa, intus valde carinata, carinis apicem versus evanescentibus, carina sepalorum exteriorum inter antherae thecas, carina sepalorum interiorum inter antheras quadrante, dilute flava, margine albida, c. 0.225 cm. longa, fere 0.2 cm. lata, interiora paulo angustiora. Disci glandulae 4, cum sepalis alternantes, minusculae, cordatae, subreniformes, pallide viridi-flavae. Stamina 2, c. 0.18 cm. longa; filamenta in columnam humilem crassam subconicam valde longitudinaliter 4costatam pallidam connata; antherae magnam partem liberae, erectae, parallelae, a dorso compressae, ovato-cordatae, apice obtusae, c. 0.14 cm. longae, connectivo pallide flavescenti, thecis albidis, rima longitudinali laterali dehiscentibus. Flores ♀ bene expansi, c. 0.4 cm. diam., pedicello tenui, tereti, apice in torum obconicum incrassato, minute verruculoso, dilute viridi, basi purpureo-tincto, c. 0.43 cm. longo. Calyx alte 6partitus, biserialis, glaber, pallide

flavus; sepala exteriora late elliptico-orbicularia, obtusa, intus inferne costa longitudinali quam in floribus ♂ minus conspicua instructa, carnosula, tenuiter albido-marginata, c. 0.2 cm. longa, 0.17—0.175 cm. lata; sepala interiora e basi brevissime contracta cuneata, sexangulata, plus minusve acuminata, obtusa vel subacuta, margine excepto carnosula, c. 0.24—0.27 cm. longa, 0.175 cm. lata. Discus cupuliformis, ovario arcte adpressus et multo brevior, globatus, glaber, carnosulus, pallide viridis. Ovarium depresso globosum, conspicue longitudinaliter 6sulcatum, dense verruculoso-papillosum, dilute viride, c. 0.07 cm. longum, 0.12 cm. diam.; styli 3, erecti, paulum divergentes, cuneato-oblongi, apice lato breviter obtuse trilobuli, leviter concavi, dorso convexi, glabri, carnosuli, nitidi, c. 0.075 cm. longi. Capsula calyce viridi suffulta, stylis coronata, depresso globosa, 3loba, coccis sulco longitudinali verisimiliter deinde evanescente instructa, sparse minute verruculosa, viridis, c. 0.375—0.425 cm. alta, 0.55—0.6 cm. diam. pedicello 0.5—0.65 cm. longo.

J a v a: Batavia, Goenoeng Tjipoetih near Tjiampea, 650 m., in forest, several plants. (R. C. BAKHUIZEN VAN DEN BRINK, n. 4204, fl. and fr. September 1920).

Priangan, Soekaboemi, Bodjonglopang, 600 m., secondary forest, many plants. (C. A. BACKER n. 16937, November 1914). Pasawahan, 525 m., secondary forest, several plants. (R. C. BAKHUIZEN VAN DEN BRINK n. 1702, August 1918). Tjianten, many plants. (R. C. BAKHUIZEN VAN DEN BRINK n. 1655, January 1917). Tjiandjoer, Gekbrong, Goenoeng Kentjana, 1200 m., forest, several plants). C. A. BACKER n. 23238 bis, February 1918). Tjibeber, Tjisokan near Tjidadap, 750 m., forest, not rare. (R. C. BAKHUIZEN VAN DEN BRINK n. 256, August 1916; n. 415, August 1917).

Good specimens enable me to give a new description of this Javanese species.

**Breynia Heyneana** J. J. S. n. sp. (Euphorbiaceae) Tab. 9.

Frutex glaber. Folia ovata, anguste obtusa, basi rotundata vel obtusa, 2.5—4.75 cm. longa. Flores ♀ breviter pedicellati. Calyx majusculus, ambitu angulato-orbicularis, globatus, convexus, carnosulus, c. 0.5 cm. diam., laciniis brevibus latissimis brevissime acuminatis. Pistillum dolioliforme, stigmatis brevibus, obtusis. Fructus calyce valde convexo suffultus, depresso globosus.

Frutex glaber, ramulis teretibus, sicco minutissime pallide puncticulatis. Folia in ramis primariis rudimentaria, subulata ad triangula, acuta, c. 0.2—0.23 cm. longa, stipulis 2 similibus sed paulo brevioribus latioribusque, oblique

triangulis. Folia in ramulis alternatim bifaria, breviter petiolata, ovata, apicem versus sensim angustata vel leviter acuminata, anguste obtusa, interdum brevissime mucronulata, basi rotundata vel obtusa, integerrima, glabra, nervis lateralibus tenuibus patentibus vel subpatentissimis valde incurvis adscendentibus longe intra marginem anastomosantibus in sicco subtus prominulis paucis venis transversis conjunctis c. 4—6 in utraque costae mediae parte, sicco crasse papyracea, supra opaca nigrescentia, subtus valde opaca glaucescentia, c. 2.5—4.75 cm. longa, 1.45—3.85 cm. lata; petiolus tenuis, supra sulcatus, c. 0.4 cm. longus. Stipulae diu persistentes, recurvulae, obliquae, e basi dilatata triangulae ad subulatae, c. 0.15 cm. longae. Monochasia ♂ in ramulorum ultimorum axillis infimis, brevissima, flores c. 6 et plures gignentia, rachide c. 0.2 cm. longa. Flores ♂ longe pedicellati, macerati c. 0.2 cm. longi et diam., pedicello tenui, c. 0.33 cm. longo. Torus late turbinatus, urceolatus, apice abrupte contractus, breviter obtuse globulatus, carnosus. Sepala 6, ad faucem tori erecta, biserialia, brevia, subsemiorbicularia, brevissime acuminata. Stamina 3, in columnam subsessilem oblongo-cylindricam apice obtusam c. 0.15 cm. longam connata; antherae adnatae, apicem columnae non plane attingentes, oblongae, thecis linearibus. Flores ♀ in axillis ramulorum infimis exceptis solitarii, breviter pedicellati, pedicello c. 0.2—0.25 cm. longo, toro lato. Calyx majusculus, globatus, ambitu angulato-orbicularis, patentissimus, convexus, carnosulus, c. 0.45—0.5 cm. diam., laciniis convexo-recurvis, transversis, brevibus, latissimis, subrotundatis, brevissime acuminatis, tenuius marginatis, c. 0.2—0.24 cm. latis. Pistillum dolioliforme, obtusum, stigmatis 3 brevibus obtusis, c. 0.2 cm. altum, 0.14—0.15 cm. diam. Fructus calyce valde revurvo convexo inexplantato c. 0.55 cm. diam. suffultus, valde depresso globosus, medio trigono-apiculatus et stigmatis 3 brevissimis obtusis coronatus, maceratus totus c. 0.55 cm., absque apiculo 0.48 cm. altus, 0.575 cm. diam., pedicello c. 0.35 cm. longo.

Simaloer. (Native collector ACHMAD n. 315, fl. and fr. March 1918).

Differing from *B. cernua* MUELL. ARG. in the large rather thick convex female calyx and probably also in the form of the fruit.

“Climbing shrub, 6 m. high. Fruit red. Native Name *Tenop-tenop majal*”. (ACHMAD).

Named after Mr. K. HEYNE, chief of the Museum for Economic Botany at Buitenzorg.

Description from herbarium material only.

TAB. 9.

Fig. 1. Ramulus florens  $\frac{1}{1}$ .— Fig. 2. Flos ♂  $\frac{10}{1}$ .— Fig. 3. Stamina  $\frac{14}{1}$ .— Fig. 4. Flos ♀  $\frac{6}{1}$ .— Fig. 5. Calyx ♀ dorso visus  $\frac{6}{1}$ .— Fig. 6. Fructus  $\frac{3}{1}$ .

***Styrax sumatranus*** J. J. S. in *Tectona* X (1917), 204. (Styracaceae).  
Tab. 10.

Folia ovata, acuminata, subtus incana, omnino lepidibus stellatis minutis adpressis inspersa, nervis lateralibus 6—8 utrinque sicco cinnamomeis, 6—16 cm. longa. Inflorescentiae axillares et terminales, parce paniculatae, paucipluriflorae, tomentosae. Calyx altius cupuliformis, minute 5dentatus. Petala in tubo 0.45—0.5 cm. longum connata, valvata, lineari-lanceolata, parte libera 1.1—1.3 cm. longa. Stamina 1.225—1.375 cm. longa; antherae 0.4—0.5 cm. longae, sparse stellato-lepidotae. Ovarium  $\infty$ ovulatum. Fructus globosus, calyce cupuliformi adpresso suffultus, 2.7—3.25 cm. diam.

Arbor parva, ramulis teretibus, fulve stellato-tomentosis, indumento diu persistente. Folia alterna, petiolata, ovata ad oblongo-ovata, sensim vel satis sensim longe vel longiuscule et anguste acuminata, anguste obtusa, saepe brevissime et obtuse callosio-apiculata, basi rotundata vel obtusa, interdum brevissime in petiolum contracta, integerrima, adulta supra glabra, subtus nervis et venis majoribus exceptis incana, omnino lepidibus numerosis alte stellatis minutis adpressis fulvis adspersa, in utraque parte costae mediae nervis lateralibus c. 6—8 patentibus curvatis intra marginem anastomosantibus venis transversis numerosis conjunctis utrinque, nervis et venis majoribus subtus prominulis sicco cinnamomeis, supra dense reticulato-venosa, c. 6—16 cm. longa, 2.7—6.4 cm. lata; petiolus subteres, supra canaliculatus, sicco ferrugineo-tomentosus, c. 0.7—1.5 cm. longus. Inflorescentiae axillares et terminales, plerumque parce paniculatae, minores simplices, pauci- ad satis multiflorae, breviter pedunculatae, incano-tomentosae, c. 2—11 cm. longae, ramulis patentibus, usque ad c. 3.5 cm. longis. Bractae lanceolatae ad subulatae, concavae, costa media dorso prominente, tomentosae, c. 0.3—0.7 cm. longae. Flores nutantes, pedicellati, pedicello curvato, tereti, cano-stellato-tomentoso, lepidibus fulvis intermixtis, c. 0.4—0.6 cm. longo, bracteolis subulatis, concavis, tomentosis, c. 0.14—0.3 cm. longis. Calyx corollae adpressus, altius cupuliformis, brevissime obtuse 5dentatus, tomentosus, c. 0.425—0.48 cm. diam., 0.3—0.45 cm. altus. Corolla c. 0.65—0.8 cm. alta, 1.3—1.5 cm. alta, 5partita, carnosa, utrinque sicco albido-stellato-tomentosa, tubo c. 0.45—0.5 cm. longo, laciniis in alabastro oblongo obtuse 5angulato valvatis, deinde revolutis, lineari-lanceolatis, apicem versus angustatis, acutis vel subacutis, intus leviter et late canaliculatis, c. 1.1—1.3 cm. longis, 0.3—0.35 cm. latis. Stamina 10, basi tubo corollae adnata, erecta, contigua, columnam conicam inter filamenta et antheras inconspicue constrictam formantia, alternatim paulo inaequilonga, tota c. 1.225—1.25 ad 1.3—1.375 cm. longa; filamenta linearia, dimidio inferiore corollae adnata, sulcis separata et glabra, parte libera crasse linearia et stellato-tomentosa, tota c. 0.9—1 cm. longa; antherae erectae, filamentum continuae, contiguae, basifixae, introrsae, lineares, apice angustatae, dorso convexae et basin versus tomentosae, c. 0.4—0.5 cm. longae, ihects

parallelis, anguste linearibus, margine sparse stellato-lepidotis, rima longitudinali dehiscentibus. Ovarium superum, liberum, abbreviato-ovoideum, subangulatum, tomentosum, 0.15—0.2 cm. altum, 0.2 cm. diam., triloculare, loculis pluriovulatis; stylus vix exsertus, filiformis, basi subconica tomentosa excepta glaber, c. 1.43 cm. longus, stigmatibus truncato. Fructus calyce aucto adpresso cupuliformi subtus valde convexo plerumque leviter rumpente tomentoso carnosus c. 1.2 cm. diam. suffultus, semimaturus ovoideo-ellipsoideus, vix apiculatus, maturus plus minusve irregulariter globosus, tomentosus, c. 2.6—2.9 cm. altus, 2.7—3.25 cm. diam., uniloculare, monospermum, pariete crasse et firmiter carnosus, c. 0.55—0.9 cm. diam., intus nitido. Semen erectum, subobovoideo-globosum, basi latum, c. 1.6 cm. altum, 1.5 cm. diam., testa crassa, ossea, albumine copioso, carnosus, embryo recto, cotyledonibus ovali-orbicularibus, tenuibus, radícula cylindrica, truncata.

Sumatra: West coast, Dolok Oetoes, Kampong Sitapongan (Hoeloe Djoeloe), rarely growing wild, often cultivated by the natives; on brownish yellow sticky loam. (A. V. THEUNISSEN, fl. and fr. May 1915; *Kemajan poetih*, mal., *Haminjan nabattar*, bat.). South-west slope of the Dolok Martimbang, Banoe Hadji. (W. VERSLUIJS, July 1916; *Kemajan toba* or *K. poetih*, mal.). Upper Baros, Dolok Goenoeng near Palilitan. (W. VERSLUIJS, fr. September 1916; *Kemajan*, mal.). Mountains between the districts Toba and Habinsaran, Pagar Batoe. (Controller of Toba, fl. and fr. June 1915; *Hamindjan doerame*, bat.). Batang Baros. (J. E. TEYSMANN n. 966 Herb. Bog.; *Kajoe kemajan*, mal.).

This species differs from *S. Benzoin* DRYAND, which is very common in these regions, chiefly in the following details. The indumentum of the lower surface of the leaves is extremely short and appressed; very small scales are to be found on the veins only, whereas in *S. Benzoin* the nerves are more or less pubescent. The anthers are proportionately shorter with small scales scattered along the borders of the cells. The fruits are very characteristic for the species; they are globular with a very thick pericarp and measure 2.7—3.25 cm. in diameter (the smallest fruits were perhaps not wholly developed). The fruiting calyx is more or less cupshaped even when dry, whereas in *S. Benzoin* it is flat or convex in a dry state.

The galls of this species are very curious; Dr. W. M. DOCTERS VAN LEEUWEN will describe them later.

Mr. A. V. THEUNISSEN notes that this plant resembles a nutmeg tree in its habitus.

One tree measured 11.8 m. with a trunk of 25.5 cm. in diameter breast high. The flowers are white with yellow stamens, the fruit gray.

The tree produces, like *S. Benzoin* DRYAND, a kind of benzoin, known as white benzoin. As soon as the production of the resin comes to an end the tree is felled and used for fire-wood.

TAB. 10.

Fig. 1. Ramulus florens  $\frac{3}{4}$ .— Fig. 2. Pilus stellatus  $\times$ .— Fig. 3. Flos  $\frac{2}{1}$ .— Fig. 4. Floris sectio  $\frac{3}{1}$ .— Fig. 5—6 Calyces  $\frac{4}{1}$ .— Fig. 7. Stamina  $\frac{11}{1}$ .— Fig. 8. Anthera  $\frac{8}{1}$ .— Fig. 9. Pistillum  $\frac{5}{1}$ .— Fig. 10. Ovarii sectio transversalis  $\frac{6}{1}$ .— Fig. 11. Fructus juvenilis  $\frac{1}{1}$ .— Fig. 12. Fructus maturus  $\frac{1}{1}$ .— Fig. 13. Idem sectus  $\frac{1}{1}$ .— Fig. 14. Embryo  $\frac{4}{1}$ .

**Clethra longispicata** J. J. S. nom. nov. — *C. elongata* J. J. S. (non RUSBY) in Bull. Jard. Bot. Buit. 3e sér. I (1920), 398.

**Rhododendron Zollingeri** J. J. S. in Ic. bog. IV (1910), 73, t. CCCXXII; in Meded. Dep. Landb. n. 18 (1914), 108; KDS. Exkursionsfl. III, 6.— *Rh. tubiflorum* ZOLL. (non DC.) in MOR. Syst. Verz. ZOLL. 42.

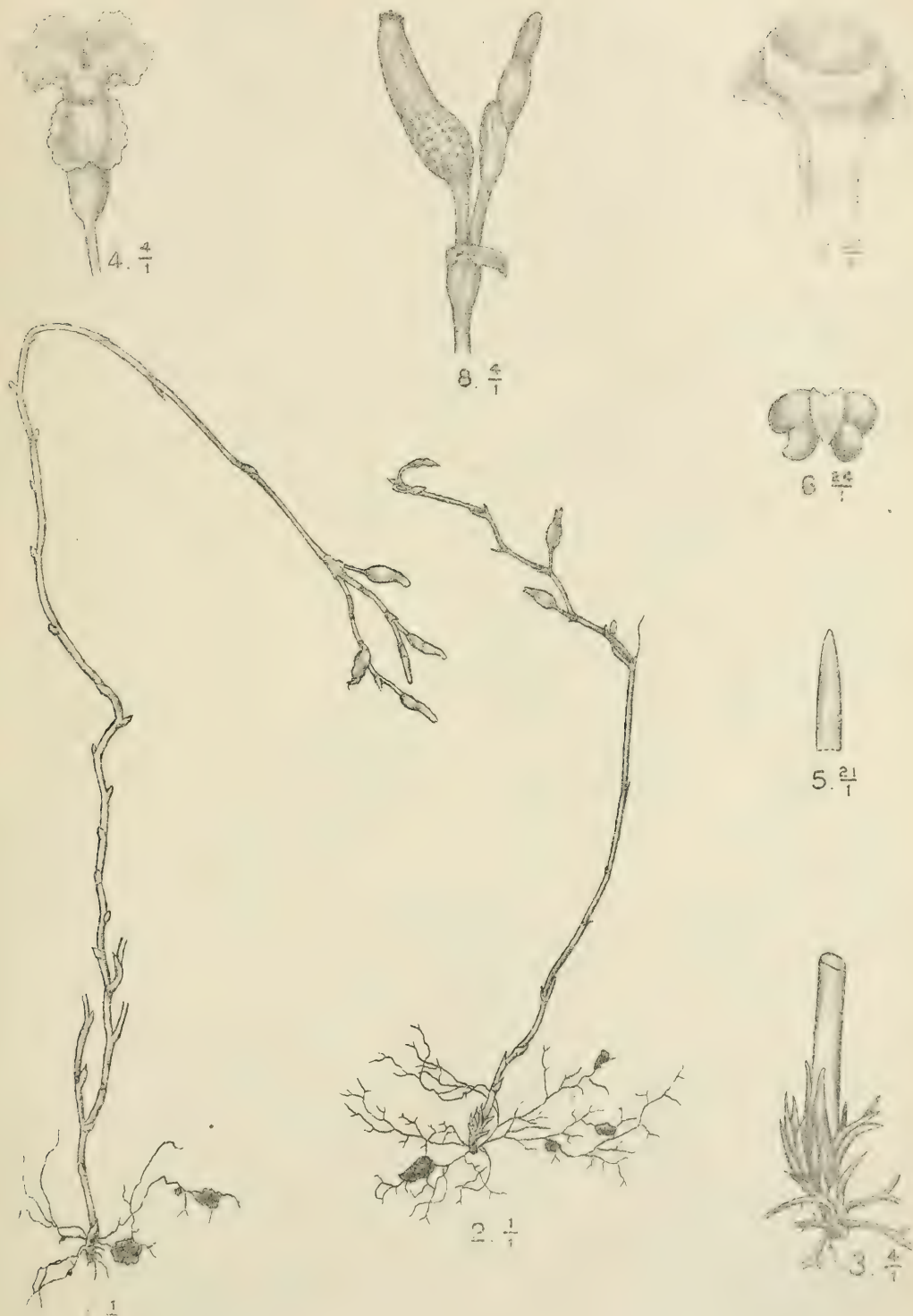
var. **latifolium** J. J. S. n. var.

Frutex, innovationibus c. 2.3—10 cm. longis, inferne cicatricibus 1 vel paucis foliorum rudimentarium notatis, ramulis teretibus, everrucosis, dense lepidotis, glabrescentibus. Folia c. 4—5 spurie verticillata, breviter petiolata, elliptica, apice angustata, obtusa vel subacuta, saepe glanduloso-apiculata, basi acuta vel obtusa, minute crenulata, supra dense subtus densissime impressae lepidota, plus minusve glabrescentia et impressae punctata, in utraque parte costae mediae supra sulcatae subtus apice excepto obtuse prominentis nervis lateralibus c. 6—7 irregularibus patentibus intra marginem anastomosantibus supra insculptis subtus obsolete, coriacea, sicco supra obscure cinerea, subtus ferruginea, c. 2.4—4.75 cm. longa, 1—2 cm. lata; petiolus latus, creberrime lepidotus, c. 0.2—0.4 cm. longus. Inflorescentiae terminales, c. 5—6 florum, ramentis inferioribus semiorbicularibus ad triangulis, concavis, dentatis vel crenatis, dorso lepidotis. Flores parvi, pedicello dense grossius lepidoto, c. 0.9—1.6 cm. longo. Calyx oblique discoideus, suborbicularis, subdentatus, interdum lacinia 1 triangula, dorso lepidotus, c. 0.35 cm. diam. Corolla tubuloso-campanulata, 5loba, extus margine loborum excepto dense lepidota, intus glabra, tubo cylindrico, explanata quadrangula, c. 1.5 cm. longa, 1.2 cm. lata, lobis suborbicularibus, c. 0.37 cm. longis, 0.325—0.35 cm. latis. Stamina 10, c. 0.93—1.1 cm. longa; filamentum lineare, apicem versus paulo angustatum, glabrum; anthera dorsifixa, brevis, curva, obcordata, basi brevi-acuta, c. 0.1 cm. longa, thecis antice sulco separatis, poro magno oblique introrso hiantibus. Ovarium breve, crasse cylindricum, quinqueangulare, abrupte obtusum, creberrime adpresse lepidotum, c. 0.4 cm. longum, 0.27 cm. diam.; stylus impositus, brevis, teres, glaber, cum stigmate capitato 5lobo denticulato-manicato c. 0.4 cm. longus. Discus conspicuus, annularis, 10lobus, glaber, c. 0.34 cm. diam.

Celebes: Goenoeng Sinadji. (Expedition L. VAN VUUREN, RACHMAT no. 883, November 1913).

Differs only in the form of the leaves.

Description from herbarium material.



*R. Natadipoera del.*

*Gymnosiphon aphyllum Bl.*



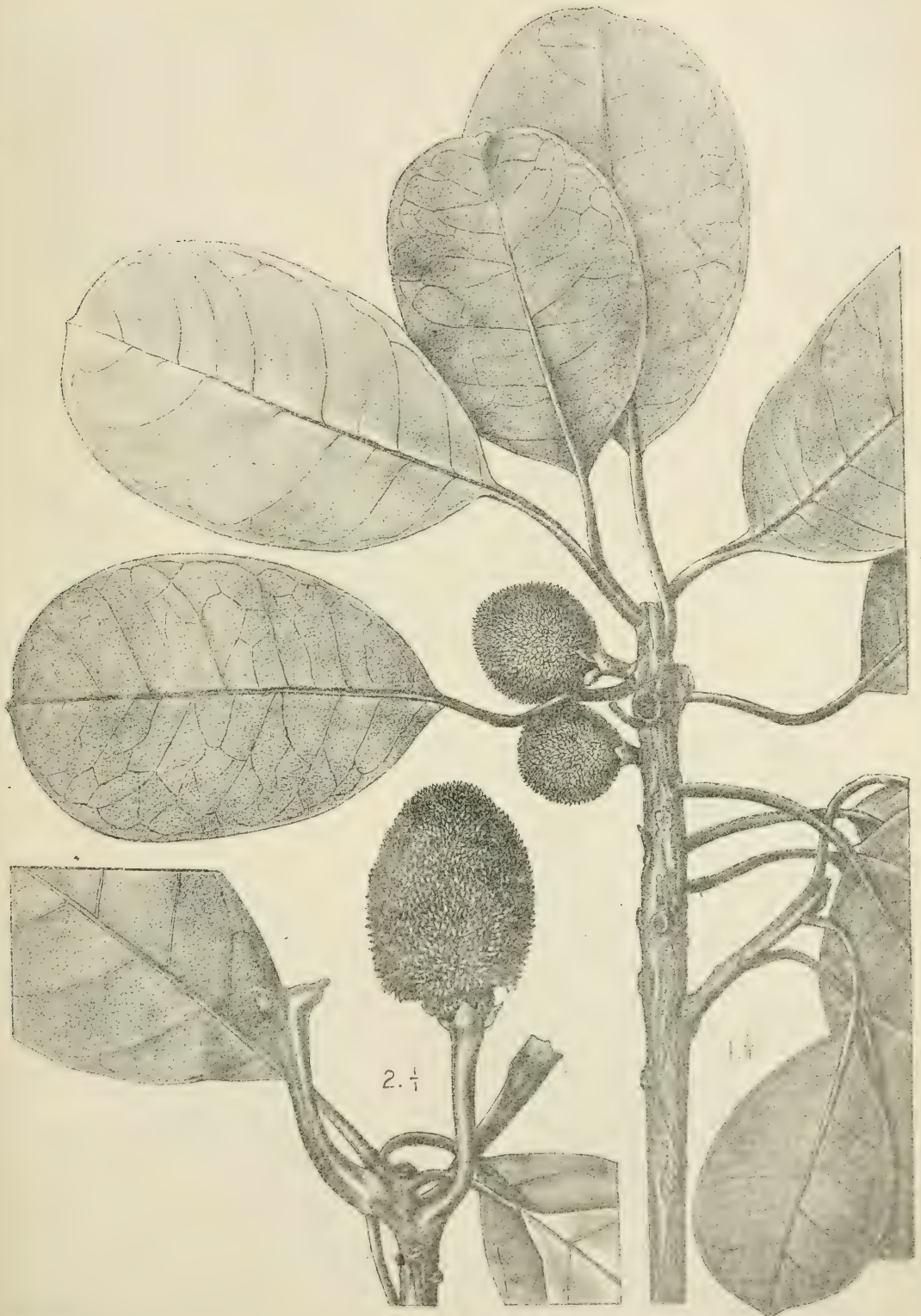




J. J. Smith et Darmosoediro del.

*Rinorea gaultheriiflora* J. J. S.

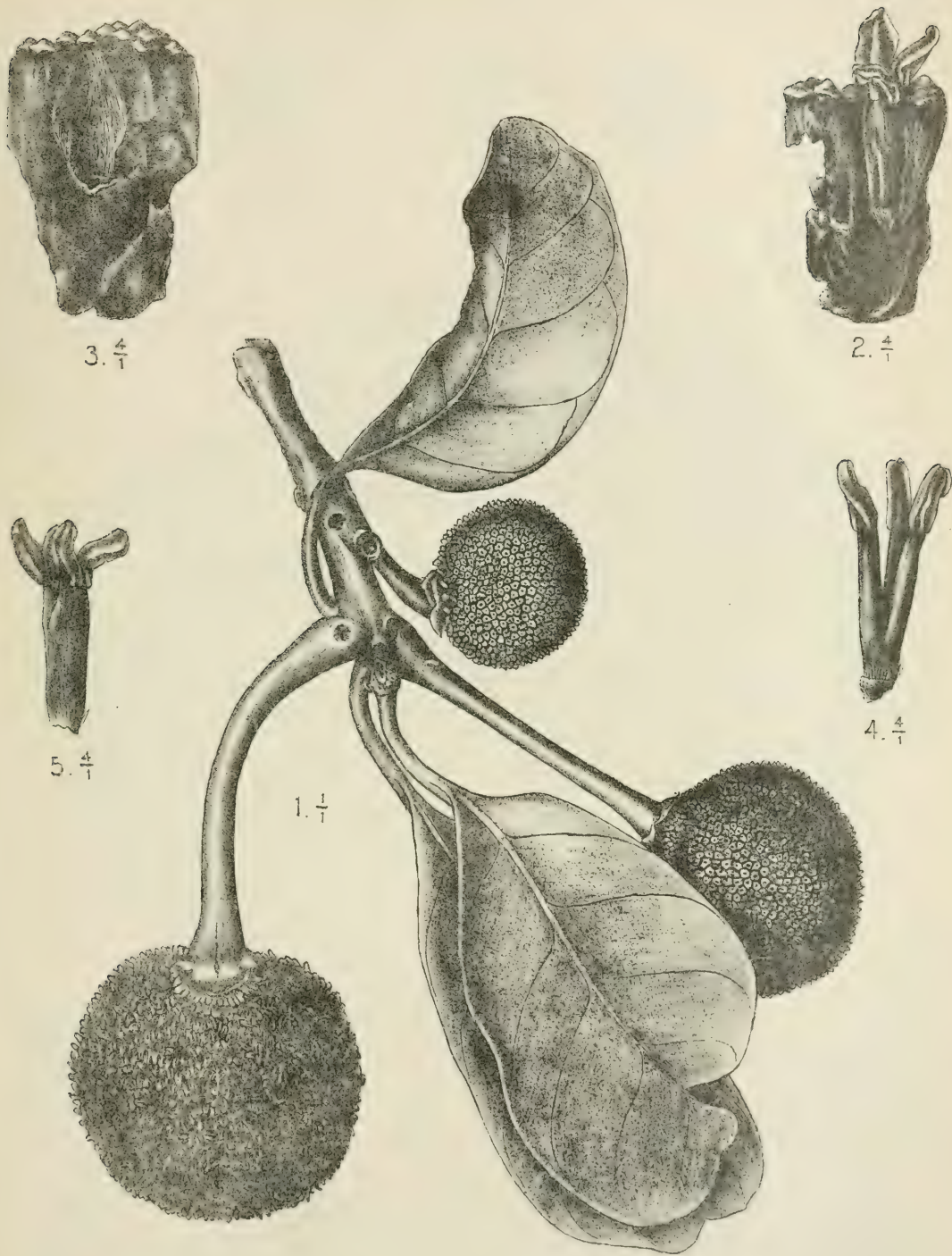




Sandiwirio del.

*Gymnartocarpus triandra* J. J. S.

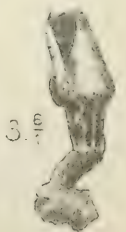
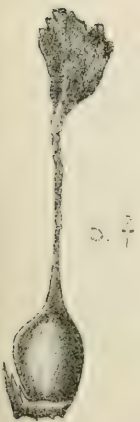
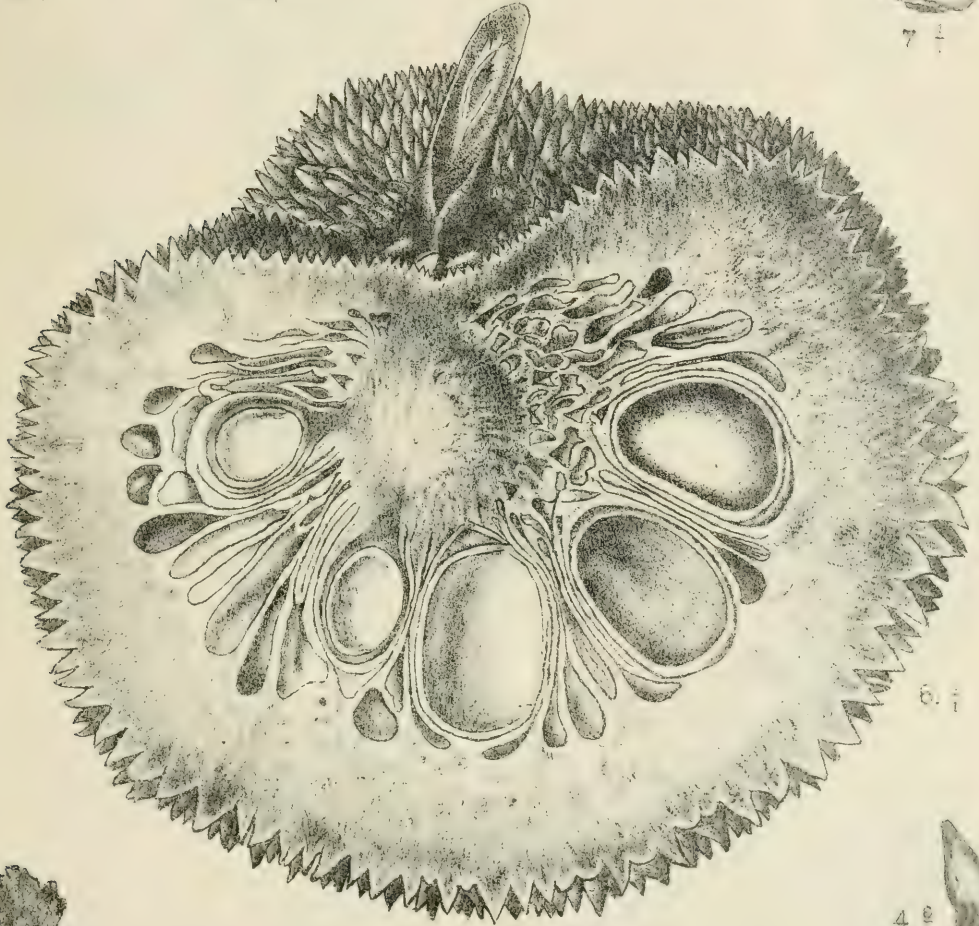
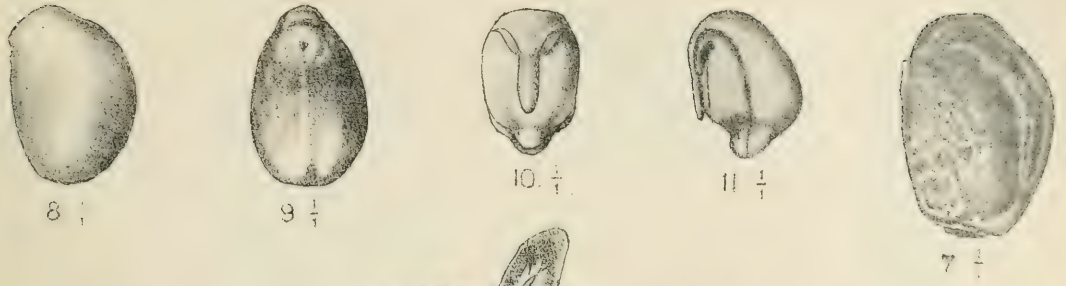




Sandiwirio del.

*Gymnartocarpus triandra* J. J. S.



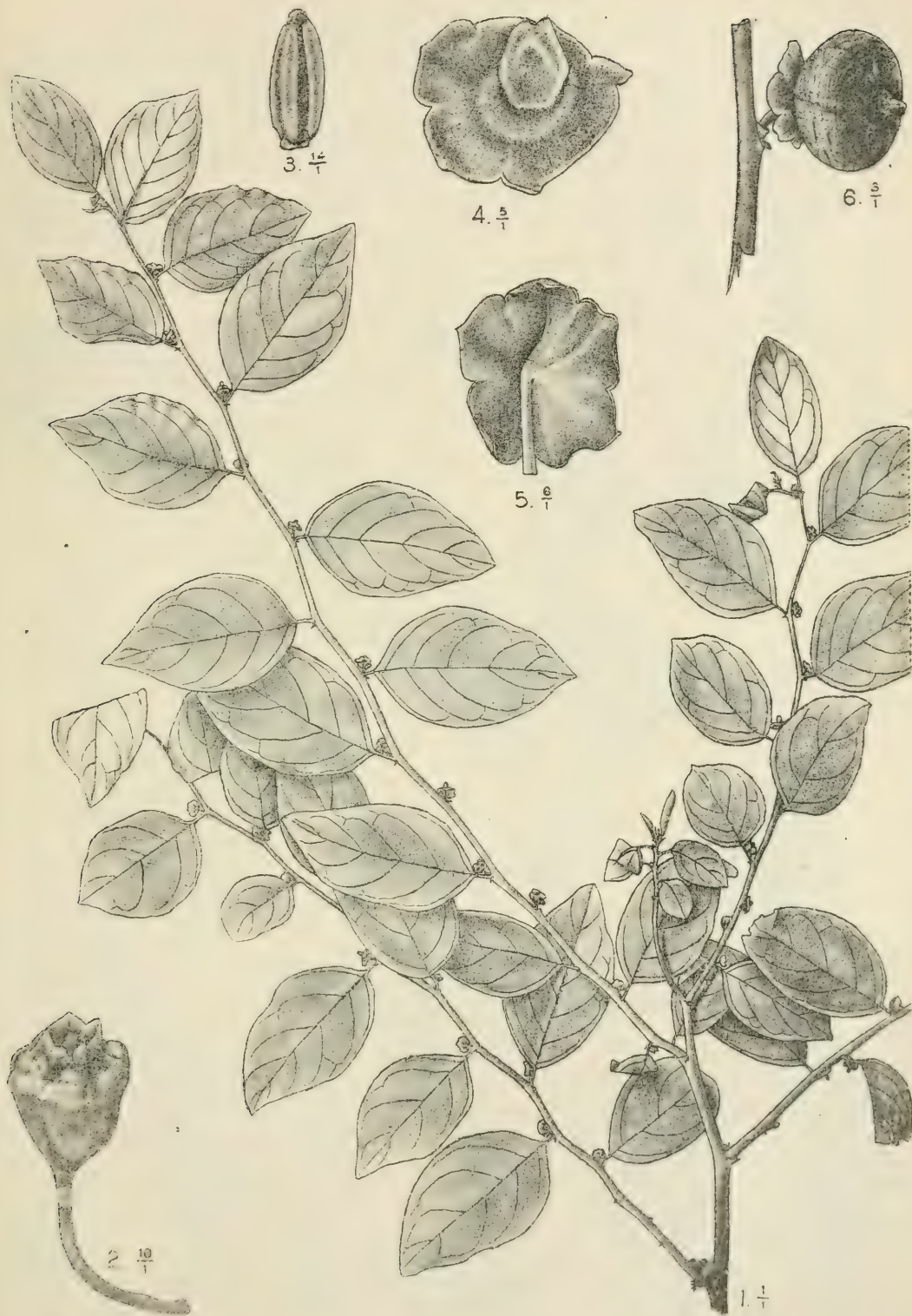


Sandiwirio del.

*Gymnartocarpus triandra* J. J. S.







Darmosoediro del.

*Breynia Heyneana* J. J. S.





Darmosoediro del.

*Styrax sumatranus* J. J. S.



# EINIGE BEOBACHTUNGEN BEI CLITORIA TERNATEA L.

von

Dr. A. RANT.

Mit Tafel 11 und 12.

---

Eine der häufigsten Schlingpflanzen, aus der Familie der Papilionaceen, die man in Niederländisch-Indien im Garten und im Freien antrifft, ist *Clitoria ternatea* L., auf Java bei den Eingebornen allgemein als „kembang telang“ oder „teleng“ bekannt. Am meisten findet sich die blaue Varietät und zwar eine dunklere und eine hellere Form. (Fig. 1.). Ferner gibt es eine weisse Varietät und zwar eine rein weisse, homozygotische und eine schwach bläulich weisse, vielleicht heterozygotische Form. Am seltensten ist die violette Varietät.

Ausser den normalen, zygomorphen Formen mit echten Papilionaceenblüten gibt es eine pelorische Form. Bei der normalen Blüte sind die 10 Staubblätter diadelphisch, bei der pelorischen dagegen nicht mit einander verwachsen; ausserdem sind alle Kronblätter ungefähr gleich gross (Fig. 2, 3.).

Daneben gibt es Übergänge zwischen der normalen, zygomorphen und der pelorischen Form, wo die Staubblätter alle frei sind, während jedoch die Kronblätter ungleich gross sind; die Fahne ist wie bei der zygomorphen Form das grösste Kronblatt. (Fig. 4.). Diese Form bezeichne ich als „hemipelorisch“; sie kann homo- oder heterozygotisch sein. So fand ich eine homozygotische hemipelorische blaue und weisse Form, deren Abkömmlinge immer konstant waren.

Zum Beurteilen einer *Clitoria*-Pflanze ist nicht nur die Kenntnis einer einzelnen Blüte, sondern einer grössern Anzahl solcher erforderlich. An schwächeren Zweigen von rein pelorischen, in Töpfen gezüchteten Pflanzen finden sich hemipelorische Blüten; an schwächeren Zweigen von hemipelorischen Pflanzen gibt es oft zygomorphe Blüten mit diadelphischen Staubblättern. Bei allen diesen Blütenformen ist die Frucht eine Hülse.

Bis jetzt gelang es mir, Pflanzen mit blauen und weissen pelorischen und hemipelorischen Blüten in der Natur zu beobachten, während die violette pelorische oder hemipelorische Form, so weit mir bekannt, nicht im Freien vorkommt. Weiter sei als Resultat von Versuchen erwähnt, dass Pflanzen mit zygomorphen Blüten mehr Früchte bilden als solche mit pelorischen oder hemipelorischen, da bei diesen viele Blüten ohne Fruchtbildung vertrocknen.

Bei *Clitoria ternatea* machte ich einige Beobachtungen und Versuche zum Nachweis des Zusammenhangs der drei Farben, welche Versuche jedoch noch nicht abgeschlossen sind; hier sollen daher nur einige vorläufige Resultate mitgeteilt werden.

#### A. Der Einfluss der Meereshöhe.

*Clitoria ternatea* findet sich nach BACKER <sup>1)</sup> und KOORDERS <sup>2)</sup> von 0 bis 150 M. über dem Meere und wird in grösserer Höhe als Zierpflanze gezüchtet. <sup>3)</sup> Bei meinen Versuchen mit Leguminosen im Gebirge <sup>4)</sup> säte ich in etwa 1600 Höhe zahlreiche Samen der zygomorphen blauen und weissen Form aus. Die Keimung war schlecht, die aufgekommenen Pflanzen blieben schwach und starben meistens vor der Blütenbildung ab. Nur einzelne Pflanzen der blauen Rasse blieben am Leben und blühten, ohne Früchte zu bilden. Sie wurden nur 2 dM. hoch — in der Ebene sind sie oft 3 M. lang — und bildeten sich nicht wie im Tieflande zu Schlingpflanzen aus, sondern blieben strauchförmig, wobei nur die Enden der Zweige ein wenig rankten, wie dies normalerweise z. B. bei *Phaseolus semi-erectus* L. der Fall ist. Bei *Clitoria* war also der Einfluss der Meereshöhe sehr deutlich und in ähnlicher Weise wie in analogen durch GASTON BONNIER <sup>5)</sup> u. A. ausgeführten Versuchen wahrnehmbar.

#### B. Bastardierungsversuche.

Im Freien finden sich sehr selten Hybride zwischen den Varietäten von *Clitoria ternatea*. Die Blüten werden in West-Java, so weit mir bekannt, hauptsächlich durch Holzbiene (Xylocopa) besucht, welche zum Rauben des Nectars unten an der Blüte einbrechen und sie nicht bestäuben; nur wenige andere Insekten, welche sie jedoch selten besuchen, kriechen so in die Blüten hinein, dass Kreuzbestäubung möglich ist. Wenn man die verschiedenen Varietäten der *Clitoria* in demselben Garten aussät, bekommt man fast nie spontane Bastarde; bei der blauen und der weissen Form der zygomorphen und der pelorischen Rasse, bekam ich auf dieser Weise niemals Bastarde.

Nur aus Samen einer Pflanze mit bläulich weissen Blüten, welche ich von einem Bekannten erhielt, kamen Pflanzen hervor, welche blaue oder weisse oder bläulich weisse Blüten hatten; die Mutterpflanze war also heterozygotisch. Bei einem anderen Versuch fand ich, dass aus Samen einer zygomorphen violetten Varietät, welche ich von 2 verschiedenen Standorten bekam, auch Pflanzen mit weissen Blüten hervorgingen. Ob alle Pflanzen mit violetten Blüten heterozygotischer Natur sind, kann natürlich nur durch eine ausgedehnte Untersuchung festgestellt werden.

<sup>1)</sup> C. A. BACKER. Schoolflora voor Java. Deel I, 1911. S. 356.

<sup>2)</sup> S. H. KOORDERS. Exkursionsflora von Java. Zweiter Band, 1912. S. 397.

<sup>3)</sup> Im Buitenzorger Herbarium findet sich jetzt Material aus 700 M. Meereshöhe.

<sup>4)</sup> A. RANT. Mededeelingen van het Kina Proefstation No. III. Korte aantekeningen over Leguminosen in het Gebergte aangeplant 1916. S. 9.

<sup>5)</sup> GASTON BONNIER. Recherches expérimentales sur l'adaptation des plantes au climat alpin. Ann. d. scienc. nat. Botanique. Série 7. T. 20. 1895.

Bei meinen noch nicht abgeschlossenen Versuchen, wobei es sich bald zeigte, dass zur Beurteilung der Mendelschen Bastardspaltungen zu wenig Pflanzen verwendet worden waren, wurde zuerst die Frage gestellt, welche Farbe und welche Form dominant oder rezessiv sei. Nebenbei sei erwähnt, dass die später untersuchten Pflanzen vorher während mindestens 2 Generationen beobachtet wurden zur Beurteilung der Frage, ob sie homo- oder heterozygotisch waren, wobei die Pflanzen sich selbst überlassen wurden sodass Selbstbestäubung stattfand. Die blaue und die weisse Varietät — sowohl die zygomorphe als die pelorische Form — erwiesen sich als homozygotisch. Oben wurde schon gesagt, dass dies nicht der Fall war bei den Nachkommen von 2 verschiedenen Pflanzen mit violetten zygomorphen Blüten.

### Versuch I.

Weiss zygomorph ♀ × dunkelblau zygomorph ♂.

Ausgesät wurden 409 Samen, aus welchen 368 Pflanzen F<sub>1</sub> hervorgingen. Die Blüten aller dieser Pflanzen waren blau und zygomorph, also ist blau dominant, weiss rezessiv.

Leider konnte die F<sub>2</sub>-Generation in Ermangelung eines Versuchsfeldes nicht untersucht werden. Dieser erster Versuch sollte als Vergleich dienen mit früher von mir bei einer andern Pflanze aus der Familie der Convolvulaceen, *Quamoclit pinnata* Boj. erhaltenen Resultaten. Bei *Quamoclit* ist die Blüte der F<sub>1</sub>-Generation, entstanden aus rot ♀ × weiss ♂ oder reziprok, oft etwas grösser als die der Eltern und rosa, also intermediär. Die F<sub>2</sub>-Generation spaltet normalerweise auf im Verhältnis 1 : 2 : 1; bei der F<sub>3</sub>- und F<sub>4</sub>-Generation blieben die roten und weissen Pflanzen konstant, während die rosa Pflanzen sich weiter aufspalteten im Verhältnis 1 : 2 : 1.

### Versuch II.

Dunkelblau zygomorph ♀ × dunkelblau pelorisch ♂.

Die Blüten aller Pflanzen der F<sub>1</sub>-Generation waren blau pelorisch. Von der F<sub>2</sub>-Generation wurden ausgesät 245 Samen, woraus 199 Pflanzen hervorgingen, welche alle blaue Blüten hatten und zwar:

zygomorphe . . . . .	64
hemipelorische und pelorische . . . . .	135 Pflanzen.

Aus diesem Versuche geht hervor, dass bei *Clitoria ternatea* pelorisch fast völlig dominant, zygomorph rezessiv ist. Wir finden hier also gerade das entgegengesetzte Verhalten wie bei *Antirrhinum majus* L., wo BAUR<sup>1)</sup> fast völlige Dominanz der zygomorphen Form über die pelorische festgestellt hat.

### Versuch III.

Weiss zygomorph ♀ × dunkelblau pelorisch ♂.

Die Blüten aller Pflanzen der F<sub>1</sub>-Generation waren blau pelorisch.

<sup>1)</sup> ERWIN BAUR, Einführung in die experimentelle Vererbungslehre 1914. S. 79.

Von der  $F_2$ -Generation wurden 373 Samen ausgesät, woraus 339 Pflanzen hervorgingen, welche sehr verschiedenartig waren; die Zahl der Versuchspflanzen war leider für eine genaue Analyse zu gering. Unter dieser  $F_2$ -Generation traten Pflanzen mit zygomorphen, mit pelorischen und mit hemipelorischen Blüten auf. Da es, wie vorher gesagt, oft schwierig zu bestimmen ist, ob eine Pflanze pelorisch- oder hemipelorisch ist, seien hier beide Formen als „pelorische“ zusammengefasst. Bei diesen „pelorischen“ und den zygomorphen Blütenformen zeigten sich verschiedene Farben: dunkelblau, hellblau, rein weiss, bläulich weiss, rein violett und violett mit hellgerändeter Fahne. Selbstverständlich wurde darauf Bedacht genommen, dass in der Nähe des Versuchsfeldes keine violette *Clitoria* vorhanden waren, sodass eine Bastardierung (Vizinismus) <sup>1)</sup> ausgeschlossen ist.

Wir erhielten folgende Zahlen:

#### a. Zygomorphe Blüten.

Hellblau . . . . .	23
Dunkelblau . . . . .	18
Rein weiss . . . . .	23
Bläulich weiss . . . . .	8
Violett . . . . .	8
Violett mit hellem Saum . . . . .	13
Total . . . . .	93 Pflanzen.

#### b. Pelorische Blüten.

Hellblau . . . . .	59
Dunkelblau . . . . .	73
Rein weiss . . . . .	37
Bläulich weiss . . . . .	25
Violett . . . . .	25
Violett mit hellem Saum . . . . .	27
Total . . . . .	246 Pflanzen.

Es wäre interessant zu untersuchen, welche van diesen Formen homo- oder heterozygotisch sind oder sein können; leider fehlte mir hierzu Zeit und Platz.

Deshalb wollte ich nur die neu entstandenen violetten Formen, speziell die pelorischen und hemipelorischen, Tafel 12, B. und C., welche ich bis jetzt noch nicht in der Natur angetroffen hatte, weiter untersuchen. Bei der  $F_3$ -Generation, abstammend von diesen Pflanzen mit violetten Blüten, hatte bis jetzt keine einzige blaue Blüten; dagegen gab es neben der Mehrzahl der Pflanzen mit violetten einige mit weissen Blüten. Was die Form anbetrifft, traten bis jetzt unter den Nachkommen der hemipelorischen Pflanzen einige Individuen mit

<sup>1)</sup> cf. HUGO DE VRIES. Species and Varieties, their Origin by Mutation 1905.



zygomorphen oder mit hemipelorischen oder mit echten pelorischen Blüten auf; die Mutterpflanzen waren also heterozygotisch. Bei den Nachkommen der pelorischen Pflanzen gab es Individuen mit hemipelorischen und solche mit pelorischen Blüten; auch deren Mutterpflanzen waren also heterozygotisch. Leider blühten beim Abschliessen dieser Untersuchung noch nicht alle Pflanzen und konnten daher noch nicht berücksichtigt werden. Bis jetzt gab es nur drei violette pelorische Pflanzen, deren  $F_3$ -Generation nur aus Pflanzen mit pelorischen Blüten bestand; die meisten hatten violette Blüten, nur einige weisse. Was die Form anbetrifft, war die Mutterpflanze vielleicht homozygotisch, in Bezug auf die Farbe heterozygotisch.

Schon oben wurde erwähnt, dass 2 Sendungen von Samen von Pflanzen mit zygomorphen violetten Blüten sich in Bezug auf die Farbe heterozygotisch zeigten.

Leider konnte ich durch meine Abreise aus Buitenzorg die  $F_4$ - und  $F_5$ -Generation dieser letzten Pflanze nicht untersuchen und eine konstante violette pelorische Rasse züchten. Dieses gelang mir später.

Aus diesen wenigen Versuchen, welche in zu geringer Zahl gemacht wurden, um zur genauen Prüfung der Mendelschen Bastardspaltungen zu führen, sind doch einige Folgerungen zu machen:

1. die blaue Farbe ist dominierend, die weisse rezessiv.
2. die pelorische Form ist fast völlig dominierend, die zygomorphe rezessiv.
3. in der  $F_2$ -Generation der Hybriden zwischen homozygotischen dunkelblauen und weissen Pflanzen (Versuch III) können Pflanzen mit violetten Blüten entstehen. Ob die violette Varietät der Farbe nach homozygotisch ist und ob sie in einer anderen Weise entstehen kann, soll durch weitere Versuche geprüft werden.

Aus den wenigen gemachten Versuchen ist es vorderhand nicht möglich, genauere Folgerungen zu ziehen. In jedem Falle entstand bei der dritten Versuchsreihe die violette pelorische und hemipelorische Form, welche, soweit mir bekannt, noch nicht in der Natur anwesend waren (Tafel 12, B. und C.).

### C. Eine Knospenvariation.

Bei einem anderen Versuche über den Einfluss einiger chemischen Stoffe auf die Keimung von Samen, erhielt ich in meinem Garten eine sehr eigentümliche Pflanze von *Clitoria ternatea*.

Die Pflanze bildete anfangs nur gewöhnliche blaue Blüten und nachher hie und da Zweige, an welchen Blüten entstanden, die kleiner und viel heller blau waren als die am Hauptstamme. Deren blaue Farbe war anders und heller als die bei den Bastardierungsversuchen und in der Natur beobachtete und erinnerte an die blaue Farbe der Blüten von *Clitoria heterophylla* Lam., die Blüte war etwas kleiner als gewöhnlich. Dann und wann entstanden an einem Zweige mit heller blauen Blüten andere Blüten mit beiden Nuancen von blau neben einander. Hie und da war der grössere

Teil der Blüte dunkelblau, dann wieder hellblau gefärbt; am ausgeprägtesten zeigte sich dies an der Fahne. (Fig 5.). Deren dunkelblauer Teil war kräftiger im Wachstum als der hellblaue, sodass er oft am Rande hervorragte. Im Allgemeinen entstanden die hellblauen und die gemischtfarbigen Blüten ziemlich selten an dieser Pflanze und bildeten noch seltener reifen Samen. Bei nur einer Pflanze, hervorgegangen aus dem Samen einer gemischtfarbigen Blüte, entstanden bis jetzt einzelne Zweige mit heller blauen Blüten, während gemischtfarbige sich noch nicht zeigten. Leider gelang es mir bis jetzt nicht, aus den Samen die hellblaue Varietät rein herauszuzüchten.

Zum Schlusse spreche ich allen, die mir bei meiner Arbeit behilflich waren, meinen verbindlichsten Dank aus.

### Figurenerklärung.

#### Tafel 11.

- Fig. 1. Normale, zygomorphe Blüte,
- Fig. 2. und 3. Pelorische Blüte,
- Fig. 4. Hemipelorische Blüte,
- Fig. 5. Fahne einer zweifarbigen Blüte,

#### Tafel 12.

- A. Zygomorphe Blüte,
  - B. Hemipelorische Blüte,
  - C. Pelorische Blüte,
- der entstandenen violetten Formen.  
Durch Herrn C. VAN ZIJP, damals in Buitenzorg, photographiert.



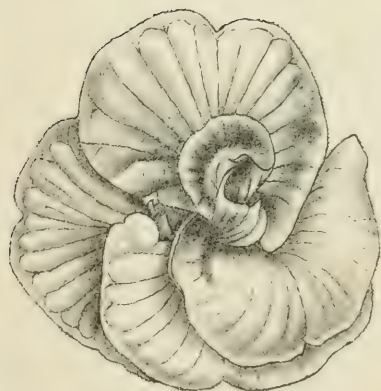
1.



2.



5.



3.



4.





*Clitoria ternatea* L.



„'S LANDS PLANTENTUIN”  
(„JARDIN BOTANIQUE DE BUITENZORG”)

# Bulletin du Jardin Botanique

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Dr. K. GORTER. †



## IN MEMORIAM

Dr. K. GORTER †

par

A. J. ULTEÉ.

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A notre grand regret nous n'avons que très superficiellement connu notre prédécesseur et c'est pourquoi cette biographie est presque exclusivement basée sur l'étude de ses travaux scientifiques.

GORTER étudia la pharmacie à l'université de Groningue où sous la direction du professeur PLUGGE mort en 1897 à Buitenzorg où il séjournait pour le „Buitenzorgfonds” était publiée une importante série de publications pharmacologiques. GORTER n'eut pas seulement le privilège d'être un disciple de ce savant mais il put aussi collaborer avec lui comme préparateur. Le sujet de sa thèse: „Ueber die Bestandteile der Wurzel von *Baptisia tinctoria* R. Br” (2, 3, 4,)<sup>1)</sup> lui fut suggéré par PLUGGE.

A cette époque l'instruction classique était nécessaire pour l'obtention du doctorat dans les universités néerlandaises; pour GORTER, ancien élève de l'école réale supérieure, cette possibilité n'existait donc pas et c'est pourquoi il fut contraint à terminer ses études à l'étranger. Ses recherches, commencées à Groningue, furent achevées à l'institut chimico-pharmaceutique de Marburg, sous la direction du Professeur Dr. SCHMIDT; en 1897 il y conquist le grade de docteur.

De la racine de *Baptisia tinctoria* (famille des Papilionacées) plante connue en Amérique pour ses propriétés thérapeutiques GORTER a isolé trois corps chimiques à savoir un glucoside, la baptisine, partie essentielle, qui s'y trouve en proportion de 6 0/0, un autre glucoside, la baptine, qui ne fut examiné plus en détail et enfin un alcaloïde, la baptitoxine.

GORTER détermina la composition chimique de la baptisine et examina sa décomposition par des acides dilués. Il réussit à démontrer la présence du rhamnose (isodulcite) et arriva à isoler à l'état pur le second constituant de ce corps qu'il nomma la baptigénine. Il chercha à déterminer la structure de ce produit de décomposition; pour cela il en prépare les composés acétylés et benzoylés et c'est ainsi qu'il constata la présence de trois groupes hydroxyle. Pour savoir si le corps appartenait à la série aromatique ou grasse l'auteur fit la réaction à l'acide nitrique et le résultat fut un corps nitrique bien caractérisé, qu'il identifia à l'acide styphnique (acide oxypicri-

<sup>1)</sup> Les chiffres correspondent à l'index bibliographique qui se trouve à la fin de cette biographie.

que). Il démontra ainsi qu'il y avait dans la baptigénine un noyau aromatique et plus précisément un noyau résorcinique qui fut confirmé par la fusion avec la potasse.

Des essais d'oxydation n'eurent pas le succès attendu; par contre la décomposition à l'aide de soude caustique à 5<sup>0</sup>/<sub>0</sub> réussit de façon satisfaisant et le résultat fut le dégagement d'acide formique et la formation d'un corps nouveau, nommé la baptigénitine.

Dans sa thèse GORTER démontra encore l'identité de la baptitoxine avec la cytisine, alcaloïde qui se trouve dans plusieurs sémences de Légumineuses. Il a utilisé dans ce but la réaction, dite de VAN DER MOERS. Dans son premier travail (1) GORTER avait déjà mentionné les conditions sous lesquelles la réaction donne les meilleurs résultats et il réussit à mettre en évidence des quantités très faibles de cytisine (jusqu'à  $\frac{1}{20}$  m. gr.).

Dans la dernière phrase de sa thèse il se réservait de reprendre ses recherches des substances constituants de la racine de Baptisia; il ne payait pas des mots car la même année déjà parut une brève note sur un nouveau corps chimique extrait de cette racine, la pseudobaptisine (5) sujet sur lequel il publia pendant son séjour à Buitenzorg deux autres travaux. Nous y reviendrons plus loin.

GORTER s'établit d'abord comme pharmacien à Bréda; dans cette situation il ne pouvait naturellement pas consacrer beaucoup de temps à la phytochimie et il ne publia qu'un petit travail sur la réaction amphotère du lait et de l'urine (6).

En 1904 GORTER fut nommé chimiste à la station expérimentale pour le café, rattachée comme Division temporaire au Département de l'Agriculture. En 1906 il fut promu chef de cette division, fonction qu'il remplit jusqu'à la liquidation de la dite station en 1910. Pendant ces 6 années GORTER s'était occupé surtout de recherches de laboratoire; il semble que le côté pratique de la culture du café l'ait moins intéressé.

Pendant cette période GORTER n'a pas seulement fait d'importantes recherches sur les substances rencontrés dans la baie de café, mais il trouva encore l'occasion de se remettre à l'étude des sujets qu'il avait traités dans sa thèse.

La pseudobaptisine fut étudiée de plus près (7, 8); ce glucoside ne se distingue de la baptisine que par un seul groupe CH<sub>2</sub> mais il a une structure différente à certains égards. Par l'hydrolyse outre le rhamnose on obtient du glucose: le troisième produit de décomposition (pseudobaptogénine) n'a qu'un seul groupe hydroxyle. Mais la grande ressemblance entre la baptigénine et la pseudobaptigénine fut mise en évidence par la décomposition à l'aide d'alcalis parceque à partir de ces deux corps il y a formation de baptigénitine.

Nous devons maintenant mentionner les résultats des études de GORTER relatives à la culture du café; ce sont les beaux travaux sur l'acide

chlorogénique qu'il faut mettre en première ligne (9, 10, 11, 18, 19, 20, 21). Depuis longtemps déjà la semence du café a attiré l'attention des chimistes; il y a 70 ans PAYEN <sup>1)</sup> y constatait la présence d'un sel bien cristallisable de potasse et de caféine. L'acide de ce sel ayant en solution ammoniacale la faculté de devenir vert, Payen lui donna le nom d'acide chlorogénique. Mais cet auteur de même que ceux qui plus tard l'ont étudié n'a pas connu l'acide chlorogénique à l'état pur et lorsque GORTER commença ses recherches fondamentales la structure de ce corps était encore complètement inconnue. La décomposition par des alcalis, faite par GORTER, facilita beaucoup la solution de ce problème; c'est par ce moyen-là qu'il put démontrer la formation de quantités équimoléculaires d'acides caféique et quinique. Il est regrettable que la présence de  $\frac{1}{2}$  mol. d'eau de cristallisation dans l'acide chlorogénique (qui semble être fortement liée) comme FREUDENBERG <sup>2)</sup> l'a démontré ait échappé à GORTER. GORTER arriva en effet à la formule  $C_{32} H_{38} O_{19}$  tandis que FREUDENBERG prouvait l'exactitude de la formule  $C_{16} H_{18} O_9$ .

Les nombreuses analyses faites par GORTER de l'acide chlorogénique et de beaucoup de ses dérivés concordent avec cette formule.

L'acide chlorogénique est donc un éther anhydre des acides caféique et quinique et a la formule:



C'est donc un représentant de la classe des depsides d'EMIL FISCHER (qu'on trouve à l'état libre dans des lichens et à l'état combiné dans des tannins de Chine). FISCHER avait prévu que les substances de ce groupe seraient assez répandues. Jusqu'à présent on n'avait trouvé que des acides phenolcarboniques comme corps primaires de ces depsides, le fait que l'acide quinique peut s'y trouver comme tel constitue une découverte importante.

Que GORTER n'ait pas élucidé complètement la structure de cette substance cela ne diminue naturellement en rien le mérite de ses recherches et c'est d'ailleurs avec l'expression d'une grande estime que FREUDENBERG parle du profit qu'il a retiré du „sorgfältig durchgearbeitetem Versuchsmaterial.“

C'est GORTER aussi qui démontre que l'acide café-tannique des anciens auteurs n'était pas un corps pur mais un mélange contenant une importante quantité d'acide chlorogénique. L'acide café-tannique ayant signalé dans plusieurs plantes il était donc naturel d'y supposer l'existence de l'acide chlorogénique. Gorter appliqua à un grand nombre de plantes une réaction colorante qui selon lui est caractéristique de l'acide chlorogénique et dans de nombreux cas il obtint en effet des résultats positifs (13, 14, 29).

<sup>1)</sup> A. ch. (3) 26, 108 (1849).

<sup>2)</sup> Ber. D. Ch. Ges. 53, 232 (1920).

De plusieurs plantes (semences de *Kopsia flavida*, *Helianthus annuus*, *Strychnos nux vomica*, latex de *Castilloa élastica*) où par cette réaction colorante la présence de l'acide chlorogénique avait été démontrée, GORTER réussit à isoler ce corps à l'état pur.

Mais GORTER attachait trop d'importance à cette réaction car CHARAUX <sup>1)</sup> montra que l'acide caféique donnait précisément le même résultat et la possibilité n'est pas exclue que d'autres corps de nature analogue puissent se comporter de la même façon.

Ces recherches mirent aussi en lumière que l'acide igasurique des semences de *Strychnos nux vomica* et l'acide hélianthique des semences de *Helianthus annuus* étaient identiques avec l'acide chlorogénique. (15, 16).

GORTER a isolé encore des semences de café toute une série d'autres corps et il les a étudiés plus ou moins en détail; ainsi une matière pectique (9) qui donne par oxydation nitrique de l'acide mucique et par hydrolyse du galactose et un pentose; puis il isola une oxydase (9) qui avec le chlorogénate de potasse et de caféine donne une coloration; l'acide coffalique (9) l'acide citrique (18) et (des semences de *Coffea libéria*) l'alkaloïde trigonelline (18) déjà trouvé par POLSTORFF <sup>2)</sup> chez *Coffea arabica*.

Il est intéressant de mentionner que l'acide isovalérianique se rencontre parmi les produits de décomposition de l'acide coffalique ( $C_{34}H_{54}O_{15}$ ) par des alcalis.

Enfin on ne doit pas manquer de fixer l'attention sur d'importantes contributions apportées par GORTER au problème de la fermentation du café. Il a démontré que cette fermentation, qui a pour effet de débarrasser les grains du mucilage que les entoure, est surtout une fermentation lactique. Il put isoler l'acide lactique inactif; en outre il trouva qu'en l'agitant avec une solution de 0.5 % de cet acide, le musilage gonflait fortement et pouvait être enlevé facilement par simple lavage.

Après la liquidation de la station expérimentale, en 1910, GORTER fut nommé chef du laboratoire de microbiologie du Département de l'Agriculture. Dans cette situation il porta son attention avant tout sur des questions intéressant le caoutchouc; néanmoins il trouva l'occasion de terminer ses études sur l'alkaloïde dioscorine (20, 22) sujet sur lequel il avait déjà en 1909 publié une note préliminaire (17), il entama en outre l'examen du principe amer d'*Andrographis paniculata* Nees (20, 23, 31). Pendant son séjour en Hollande (1914) il en continua ses recherches au laboratoire de chimie organique de Delft.

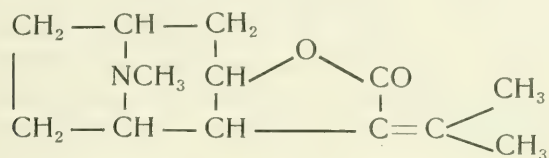
A l'époque où Gorter était préparateur du Prof. PLUGGE la dioscorine (alkaloïde des tubercules du *Dioscorea hirsuta* Bl, connus à Java sous le nom de „Gadoeng” et employés assez fréquemment par les indigènes comme substance alimentaire) fut choisie comme sujet de thèse par SCHUTTE; il isola la dioscorine et plusieurs de ses sels à l'état pur et par analyse élémentaire en établit la formule:  $C_{13}H_{19}NO_2$ .

<sup>1)</sup> Journ. Pharm. Chim. (7) 2, 292 (1910).

<sup>2)</sup> Chem. Centralbl, 1909, Band. 2, pag. 2015.

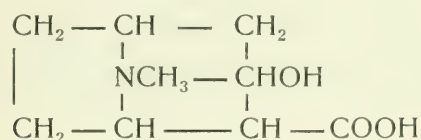
Lorsque GORTER commença ses recherches la formule de structure de cette substance était cependant inconnue et c'est par une étude systématique qu'il réussit à élucider cette question.

La formula proposée par GORTER:



contient le noyau lactique, constaté par lui, elle explique la perte de méthylamine sous l'action d'une lessive de potasse caustique, puis la transformation du méthylate d'iode par l'oxyde d'argent en une substance fortement alcaline, qui se décompose avec perte d'acide carbonique et d'eau en une nouvelle base tertiaire et enfin elle explique la possibilité de réduire la dioscorine..

Si l'on compare la formule proposée pour la dioscorine avec celle de l'ecgonine, provenant du doublement de la cocaine:



on constate que la parenté de ces deux alcaloïdes est évidente. Il apparaît même selon GORTER probable que la dioscorine doit pouvoir être transformée par oxydation en ecgonine.

GORTER établit que l'andrographolide, le corps amer d'*Andrographis paniculata* N., dont la formule selon l'auteur est  $\text{C}_{20}\text{H}_{30}\text{O}_5$ , semblait être une lactone. Il démontra encore que l'andrographolide contient 3 groupes hydroxyle et deux double liaisons, dont l'une seulement entre en réaction avec la brome. GORTER avait l'intention d'étudier plus en détail ce corps intéressant mais la mort hélas a interrompu prématurément ses recherches.

Nous avons encore à passer en revue les travaux scientifiques de GORTER sur le caoutchouc, recherches aussi sérieuses que celles qu'il avait consacrées au café.

En 1912 parut une communication sur le glucoside des graines d'*Hévéa brasiliensis* Muell. Arg. (27) et une autre sur les acides chlorogéniques et saccharique rencontrés dans le latex (29). Dans la première il démontre l'identité du glucoside des graines d'*Hévéa* avec la phaséolunatine, dans la seconde il établit la présence de l'acide chlorogénique dans le latex de *Castilloa elastica* et l'existence, sous forme de sel de magnésium, de l'acide d-saccharique dans le latex de *Ficus elastica*. Ce dernier résultat est fort intéressant parceque cet acide n'avait pas jusqu'alors été rencontré dans la nature.

Quant aux recherches intéressant plus spécialement les besoins de la pratique, on doit citer, celles sur la propriété de caoutchouc de devenir poisseux et celles sur la viscosité des solutions de caoutchouc. Dans le premier de ces travaux GORTER (26) établit une théorie d'après laquelle le caoutchouc élastique ordinaire serait à l'état métastable et qu'il tournerait, lentement il est vrai, en la forme stable et poisseuse, mais d'autres auteurs ayant démontré que l'oxygène joue un rôle pour provoquer l'état poisseuse de caoutchouc et que dans un gaz indifférent cela ne se produit jamais, GORTER dans ses publications ultérieures (28,30) ne put plus soutenir sa théorie.

Cela n'empêche pas qu'il a surtout dans sa seconde publication (28) des observations fort intéressantes sur le caoutchouc poisseux.

GORTER a surestimé la valeur de la viscosité (32, 33) comme élément d'estimation du caoutchouc et l'index de viscosité proposé par lui pour remplacer le nombre de viscosité ne présentait pas d'avantage.

En 1915 la station expérimentale pour le caoutchouc en Java occidental fut fondée, GORTER revenant d'Europe après son congé, fut chargé par le Directeur d'Agriculture d'en prendre la direction tout en restant chef du laboratoire de microbiologie. Pendant deux années GORTER remplit cette fonction spéciale; mais ce qu'il a fait pendant cette période échappe à mon jugement, il faudrait l'avoir suivi de plus près pour apprécier son activité.

Des publications parues à cette époque il faut mentionner les expériences avec SWART sur certains procédés de coagulation n'utilisant pas l'acide acétique et tout spécialement sur le procédé dit du sucre. (34).

EATON, spécialiste des questions de chimie du caoutchouc, avait trouvé que la coagulation spontanée est visiblement accélérée si au latex on ajoute divers sucres; GORTER et SWART démontrèrent que ce phénomène est dû à la formation d'acide lactique.

La dernière communication de GORTER dans le domaine du caoutchouc parut en 1917 et traite de la composition chimique du latex d'Hévéa (35).

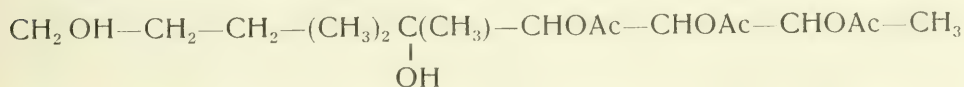
Pour être complet on doit mentionner une petite note parue à cette époque sur l'huile des sémences de *Xanthophyllum lanceatum* J.J.S. (24, 25).

Ce fut certainement une grande satisfaction pour GORTER d'être nommé au mois de Septembre 1917 chef du laboratoire de pharmacologie du Département d'Agriculture car il pouvait ainsi se dévouer complètement aux études phytochimiques pour lesquelles il avait toujours eu de la prédilection. C'est avec un grand entrain qu'il occupe sa nouvelle fonction et en quelques années une série d'importantes publications fixèrent les résultats de ses études. Les matières végétales suivantes furent examinées par Gorter d'une manière approfondie: l'hyptolide (36), la lycorine (37, 38, 40), l'hiptogine (39) et la laurotétanine (41).



L'hyptilode est une substance de saveur amère que BOORSMA, le prédécesseur de GORTER, avait isolée des feuilles d'*Hyptis pectinata* Toit, plante de la famille des Labiées. GORTER s'est occupé des propriétés de cette substance et a démontré qu'elle répond à la formule  $C_{18}H_{26}O_8$ , qu'elle est une lactone et un triacétate. L'oxydation par l'oxyde d'argent en milieu alcalin fournit un nouvel équivalent d'acide acétique, résultat qui plaide pour la présence d'un groupe terminal de méthyle.

Par réduction catalytique une molécule de l'hyptolide absorbe trois molécules d'hydrogène; l'oxydation de cette hyptolide hexahydrogénée par le permanganate a permis d'élucider la constitution de cette substance comme suit:

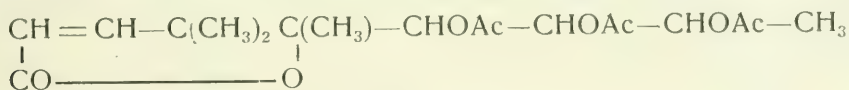


où Ac désigne acétyle ( $COCH_3$ ).

L'oxydation manganique concorde avec cette formule; elle provoque la formation de deux acides dont l'un est identique avec l'acide  $\alpha\alpha$  diméthylglutarique; pour l'autre on a des raisons d'admettre qu'elle soit l'acide  $\alpha\beta\beta$  triméthyladipique qui n'avait pas encore été isolé à l'état pur.

La formule proposée fut confirmée par la formation d'acide succinique en oxydant avec l'acide nitrique.

Après avoir démontré la structure de l'hyptolide hexahydrogénée on put déduire avec grande probabilité la formule pour l'hyptolide comme suit:



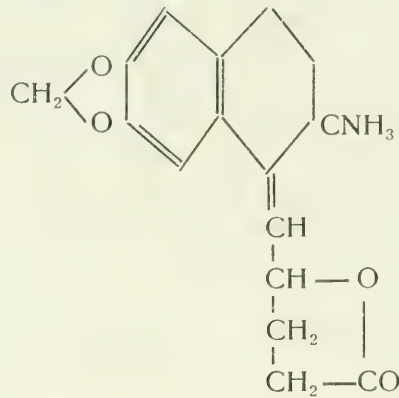
Les recherches de plusieurs savants ont révélé chez diverses plantes de la famille des Amarillidacées la présence d'un alcaloïde identique à celui de *Lycoris radiata* Herb: la lycorine. GORTER a examiné plusieurs plantes tropicales de cette famille et a démontré chez elles la présence de cette alcaloïde (39, 40).

En partant des bulbes frais de *Crinum giganteum* GORTER a fabriqué en grand la lycorine et a repris l'étude de cette substance (38) dont aucune hypothèse concernant la structure n'avait été émise jusqu'alors.

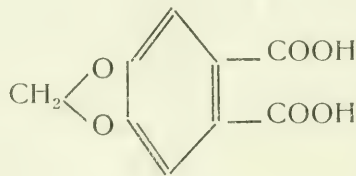
GORTER affirma que la lycorine est une base tertiaire possédant le groupement dioxyméthylénique signalé déjà par plusieurs auteurs antérieurs. L'alcaloïde hydrastine, dont la structure est connue, possède les mêmes groupements et des propriétés concordantes. Cette analogie se confirma aussi à la réduction catalytique: la lycorine fixa elle aussi deux atomes d'hydrogène en se transformant en une nouvelle base la dihydrolycorine.

En présence de ce résultat il est donc fort probable que la lycorine possède une constitution analogue à celle de l'hydrastine.

GORTER propose la formule suivante :



Cette formule a été vérifiée par oxydation manganique; l'acide provenant de cette oxydation était identique à l'acide hydrastique :



Comme il se forma en outre par oxydation de l'acide oxalique et pas du tout de l'acide succinique, la formule proposée pour la lycorine concordait avec toutes ses propriétés.

Un glucoside bien curieux est l'hiptagine, retiré de l'*Hiptago madeblota* Gaertn; arbrisseau grimpant de la famille des Malphighiacées. La propriété la plus caractéristique de cette substance est la manière dont elle se comporte vis-à-vis des alcalis qui, par ébullition, la décomposent avec dégagement d'ammoniaque et après acidulation immédiate, d'acide cyanhydrique.

L'hiptagine répond selon les analyses de GORTER (36) à la formule  $C_{10}H_{14}O_9 \cdot \frac{1}{2}H_2O$ ; chauffée avec l'acide sulfurique dilué elle se dédouble en d-glucose et en une substance très instable qui n'a pu être isolée, mais dont la formule  $C_4H_4N_2O_4$  a été déduite en étudiant les produits de réaction des acides et des alcalis sur l'hiptagine elle-même.

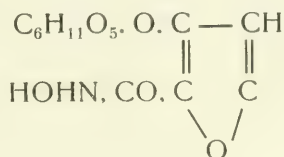
L'acide sulfurique à 5% donne naissance à du d-glucose et de l'acide tartrique. En faisant agir l'acide chlorhydrique en solution acétonique sur l'hiptagine, une nouvelle substance de nature acide, que GORTER a appelée acide hiptagénique, prend naissance. Cet acide est monobasique et répond à la composition  $C_3H_5NO_4$ .

Quant à sa configuration, GORTER propose la formule :



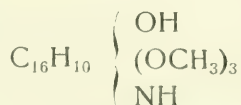
qui concorde avec les résultats obtenus par l'action de l'acide chlorhydrique concentré sur cet acide hiptagénique. Sous cette influence l'acide se dédouble en acides diglycolique et formique et en hydroxylamine.

Cela nous entrainerait trop loin de décrire toutes les réactions nombreuses dont cet intéressant acide est capable. Avec d'autres observations elles ont conduit GORTER à accepter pour l'hiptagine la constitution suivante :

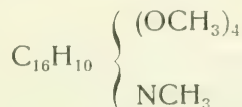


Ce glucoside est donc un dérivé de l'isoxazol dont on n'a pas trouvé jusqu'à présent de représentants dans la nature. Au point de vue physiologique l'hiptagine semble, selon GORTER, avoir quelque intérêt : on pourrait être tenté d'admettre que la plante réduirait l'azotate assimilé en hydroxylamine mettant celle-ci, dès sa naissance, en réaction avec les produits aldéhydiques et cétoniques, provenant de l'assimilation du carbone.

Les dernières recherches de Gorter traitent sur la laurotétanine (41) l'alcaloïde tétanisant de diverses Lauracées, découvert par M. GRESHOFF et plus tard étudié par M. FILIPPO. GORTER affirma la formule  $\text{C}_{19}\text{H}_{21}\text{NO}_4$ . FILIPPO par la méthode de Zeisel, avait déjà établi la présence dans la molécule de trois groupements méthoxyle et d'un groupement oxydriole. La laurotétanine étant une base secondaire la formule fut décomposée en

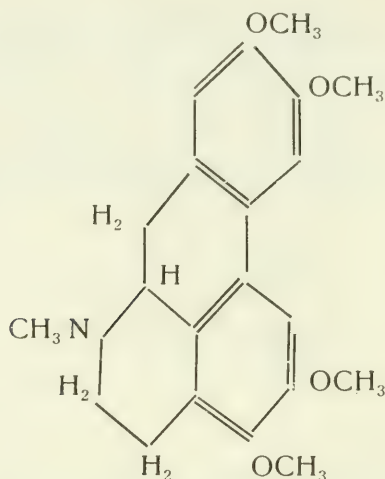


Par méthylation à l'aide de diazométhane on obtient :

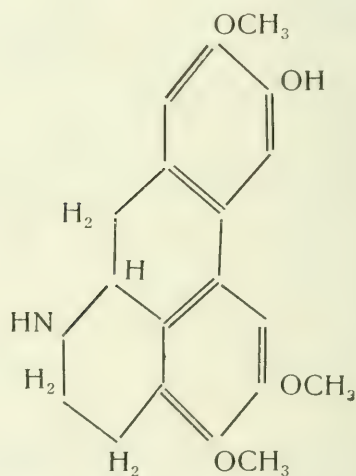
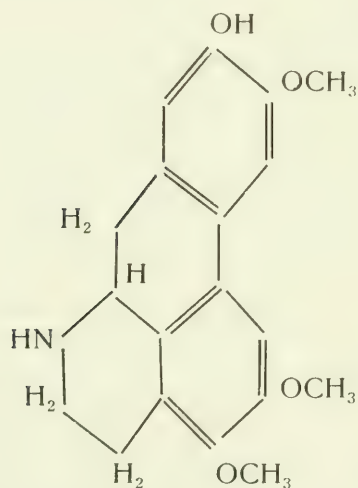


isomère à la formule de l'alcaloïde glaucine, et nommé par GORTER isoglaucine. En effet il semble exister des relations étroites entre la laurotétanine et la glaucine, également dans leur action pharmacologique.

L'oxydation manganique de la laurotétanine a donné de l'acide 1. 2 diméthoxybenzène 3. 4. 5. tricarbonique. La constitution de la glaucine, étant connue, la formule pour l'isoglaucine était :



Pour la laurotétanine nous avons donc encore le choix entre les formules suivantes :



Parmi les papiers, laissés par le regretté GORTER, nous avons trouvé encore un manuscrit, qui nous a semblé prêt pour l'impression, sur la mangiférine, substance mère du jaune indien et que nous avons pensé pouvoir publier tel quel in extenso à la suite de cette biographie; nous n'avons donc pas besoin de nous y arrêter longuement ici; nous devons seulement relever le fait que l'auteur y confirma la formule déjà établi pour ce corps  $C_{19}H_{18}O_{11}$ , et qu'il y démontre la présence de deux oxyhydriles phénoliques et de sept groupes hydroxyle. En se basant sur ces observations et sur des expériences ultérieures GORTER pense pouvoir établir la formule de structure de la mangiférine.

En dehors de quelques publications populaires et des conférences indiqués dans l'index bibliographique, nous avons terminé ici la discussion des travaux de GORTER. Nous espérons que notre exposé a montré clairement les qualités spéciales que GORTER possédait comme expérimentateur. Une description superficielle des matières végétales isolées par lui ne lui suffisait jamais et il n'abandonna jamais leur étude avant d'avoir complètement élucidé leur constitution. Si GORTER avait pu réaliser ses projets, il aurait publié encore de nombreux et excellents travaux; sa mort prématurée est une perte non seulement pour le Jardin botanique de Buitenzorg mais pour la science tout entière.

Buitenzorg Jan. 1922.

## LISTE CHRONOLOGIQUE DES PUBLICATIONS FAITES

par

M. GORTER.

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2. 1897. Ueber die Bestandteile der Wurzel von *Baptisia tinctoria* R. Br. . . . . Inaug. Diss. Marburg.
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4. idem . . . . . Ned. T. Ph. 1897.
5. Ueber das Pseudobaptisin . . . . . Arch. Ph. 235. 494.  
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6. 1902. De amphotere reactie van melk en urine. Ph. Weekbl. 1902. 300.
7. 1906. Die Baptisiagluside. Pseudobaptisin. . Arch. Ph. 244. 401.
8. 1907. Ueber Pseudobaptisin. 4-te Mitt. . . . Arch. Ph. 245. 561.
9. Beiträge zur Kenntniss des Kaffees. . . . Bull. Dép. Agr. XIV.
10. 1908. Idem. . . . . Ann. Ch. 358. 387.
11. Idem. . . . . — 359. 217.
12. Over het coffeine gehalte van eenige op Java gekweekte koffiesoorten . . . . Teysm. 1908. 774.
13. 1909. Sur la distribution de l'acide chlorogénique dans la nature. . . . . Ann. Jard. bot. Bz.  
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14. Ueber die Verbreitung der Chlorogensäure . . . . . Arch. Ph. 247. 184.
15. Ueber die Igasursäure . . . . . Arch. Ph. 247. 197.

16. Zur Identität der Helianthsäure mit der Chlorogensäure . . . . . Arch. Ph. 247. 436.
17. Sur la dioscorine. . . . . Ann. Jard. bot. Bz. 2e Serie Suppl. III. 385.
18. 1910. Beiträge zur Kenntnis des Kaffees. . . Bull. Dep. Agr. XXXIII
19. Idem. . . . . Ann. Ch. 372. 237.
20. 1911. Phytochimie . . . . . Bull. Dep. Agr. 44.
21. Beiträge zur Kenntnis des Kaffees. . . Ann. Ch. 379. 110.
22. Sur la constitution de la dioscorine. . Rec. P. B. 1911. 161.
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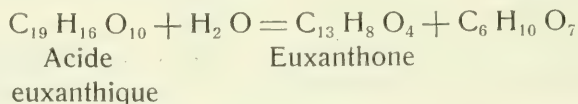
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## SUR LA SUBSTANCE MÈRE DU JAUNE INDIEN

par

Dr. K. GORTER. †

On sait, par les recherches de GRAEBE <sup>1)</sup>, que le jaune indien, qui constitue le dépôt de l'urine des vaches auxquelles on a fait manger des feuilles de manguiier, est constitué pour la majeure partie d'euxanthate de magnésie et de chaux, et mélangé parfois d'une quantité variable d'euxanthonne. L'acide euxanthique, séparé de cette matière colorante au moyen d'acide chlorhydrique, a été étudié déjà en 1844 par ERDMANN <sup>2)</sup> qui le décomposa, à l'aide d'acide sulfurique concentré, en euxanthonne et une substance sirupeuse qu'il nomma acide homathionique; puis, v. BAYER <sup>3)</sup>, en 1870, assigna la formule  $C_{19} H_{16} O_{10}$  à l'acide anhydre et représenta l'hydrolyse, sous l'influence d'acides, par l'équation suivante:



La nature de la substance  $C_6 H_{10} O_7$  a été dévoilée ensuite par les recherches de SPIEGEL <sup>4)</sup> qui la trouva identique à l'acide glycuronique de SCHMIEDEBERG et MEYER <sup>5)</sup>.

Or, on connaissait déjà à cette époque toute une série de substances dérivées de l'acide glycuronique qui apparaissent dans l'urine de l'homme et du chien à la suite de l'ingestion de nombreux composés organiques. Il semblait donc naturel de supposer que l'acide euxanthique prit naissance, de la même manière, à partir d'une substance proche parente de l'euxanthonne, d'autant plus que KOSTANECKI <sup>6)</sup> démontra que l'euxanthonne elle-même, ingérée par des lapins, s'élimina par l'urine sous forme d'acide euxanthique.

Remarquons, pour ce qui concerne la substance mère du jaune indien, que EYKMAN <sup>7)</sup>, lors de sa visite au Jardin botanique de Buitenzorg en

1) Ann. Chem. 254, 267.

2) J. prakt. Chem. 33, 90; 37, 385.

3) Ann. Chem. 155, 257.

4) D. chem. G. 15, 1964.

5) Z. physiol. Chem. III, 422.

6) D. Chem. G. 19, 2918.

7) Bezoek aan 's Lands Plantentuin. N. Tijdschr. Pharm. 1887, 23.



1887, avait déjà isolé, de l'écorce du manguier, une substance insipide, presque blanche qui se dépose par évaporation de l'extrait alcoolique, donne avec de l'ammoniaque une solution jaune, d'une fluorescence verdâtre et se transforme, par évaporation, en masse gélatineuse.

Plus tard, BOORSMA <sup>1)</sup> obtint cette substance des feuilles ainsi que de l'écorce du manguier, sous forme d'une poudre légèrement jaunâtre qui constitue, au microscope, des cristaux prismatiques et anhydres, très peu solubles dans divers dissolvants; le meilleur dissolvant est l'alcool à 60 % qui en dissout, à chaud, 1,34 gr. pour 100 cc. La cristallisation dans l'eau chaude fournit un hydrate d'un jaune plus foncé perdant, dans l'étuve à 125°, 7,5 % de son poids. Les alcalis donnent avec ce produit des solutions jaunes, d'une fluorescence verte, qui réduisent, déjà à froid, l'azotate d'argent ammoniacal; par contre, la liqueur de FEHLING n'est pas réduite, d'après BOORSMA. Cet auteur considère la substance, isolée par lui, comme un acide bibasique, sans apporter à l'appui de cette opinion de preuves valables; du reste, il se borne à constater que cette substance est certainement différente de l'euxanthone.

Presque en même temps, WIECHOWSKI <sup>2)</sup> isola, à partir des feuilles, la même substance, fusible à 273—280°, dont il a montré qu'elle apparaît dans l'urine sous la forme d'acide euxanthique, quand on l'administre à des lapins au moyen d'une sonde. Il résulte de cette constatation que ce produit constitue bien la substance mère du jaune indien. WIECHOWSKI l'a nommé euxanthogène; je préfère le désigner sous le nom de „mangiférine” indiquant ainsi son origine végétale.

L'analyse de la mangiférine a donné à WIECHOWSKI des chiffres répondant à  $C_{19}H_{18}O_{11}$ , formule brute de l'acide euxanthique lui-même. Cette dernière formule a été vérifiée, il y a quelques années, par VAN SCHERPENBERG <sup>3)</sup>, qui en a pris le poids moléculaire par ébullioscopie. Ces essais, qui ont donné des nombres se rapprochant de 422, qu'exige la formule  $C_{19}H_{18}O_{11}$ , ne sont cependant pas concluants, à cause des corrections que l'auteur a cru pouvoir admettre.

Tel était l'état de la question, quand j'ai repris l'étude de la mangiférine; les résultats de mes recherches se résument comme suit.

Au point de vue chimique, la mangiférine se distingue nettement de l'acide euxanthique par la manière dont elle se comporte vis-à-vis du bicarbonate de soude, avec lequel elle ne donne pas immédiatement un dégagement d'acide carbonique. Nous en concluons que la mangiférine ne contient pas de groupe carboxyle libre.

Elle m'a donné, à l'analyse, des chiffres concordant aussi bien avec la formule  $C_{14}H_{14}O_8$  qu'avec  $C_{19}H_{18}O_{11}$ ; du reste, l'étude de l'éther

<sup>1)</sup> Bull. Dép. Agricult. Indes néerl. No. XVI, 18 (1890).

<sup>2)</sup> Jahresb. Pharm. 1908, 20.

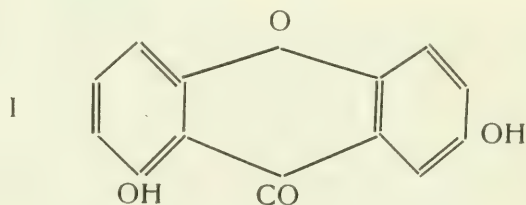
<sup>3)</sup> Rec. P. B. 35 (1915). 357.

méthylque, préparé à l'aide de diazométhane, a décidé en faveur de la dernière formule. La mangiférine est donc un isomère de l'acide euxanthique; on pouvait, dès lors, s'attendre à ce que cette substance qui se convertit, par l'entremise de l'organisme animal, en acide euxanthique, puisse donner, dans des conditions appropriées, les mêmes produits de dédoublement que celui-ci.

Or, l'observation de BOORSMA, que la mangiférine ne réduit pas la liqueur de FEHLING semble mal s'accorder avec ma thèse; nous avons, cependant, levé cette difficulté en constatant que, en chauffant pendant assez longtemps la substance avec ce réactif, il se produit bien un dépôt d'oxyde cuivreux. En outre, la mangiférine fournit avec le réactif de BIAL une coloration verte, de même que d'autres substances dérivées de l'acide glycuronique.

J'ai pu, du reste, mettre en évidence la présence d'euxanthone parmi les produits de dédoublement en procédant comme suit: J'ai chauffé la mangiférine pendant plusieurs heures au bain-marie avec de l'acide chlorhydrique; puis, j'ai évaporé à sec et distillé le résidu dans le vide. En opérant ainsi, j'ai obtenu un sublimé qui, soumis à des sublimations répétées, s'est transformé en prismes jaunes d'euxanthone.

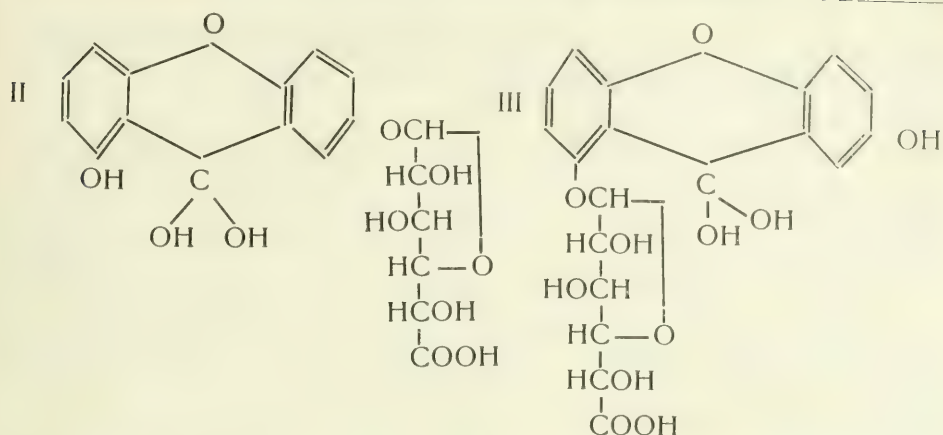
Si l'on rapproche les observations précédentes du fait que la mangiférine se convertit, dans l'organisme animal, en acide euxanthique, on peut en déduire la constitution de cette substance. Rappelons pour cela que la constitution de l'acide euxanthique a été élucidée, dans ces derniers temps, par les travaux de NEUBERG et NEIMANN <sup>1)</sup>, qui ont réussi à en faire la synthèse en faisant réagir l'acétobromoglycurone, en présence de méthylate de potassium, avec l'euxanthone, dont les recherches de ULLMANN et PANCHAUD <sup>2)</sup> ont établi avec certitude la formule suivante:



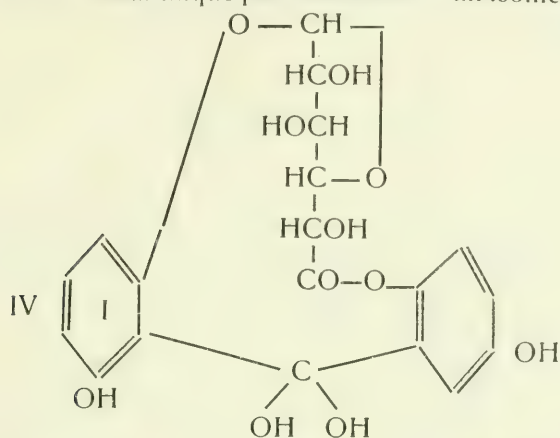
Or, cette méthode est parfaitement analogue à celle employée par E. FISCHER pour la synthèse des glucosides; cela nous permet de penser, comme NEUBERG et NEIMANN l'ont fait, que les substances conjuguées de l'acide glycuronique ont une constitution analogue à celle des glucosides. L'acide euxanthique peut, dès lors, être représenté par une des formules suivantes.

<sup>1)</sup> Z. physiol. Ch. 44, 114

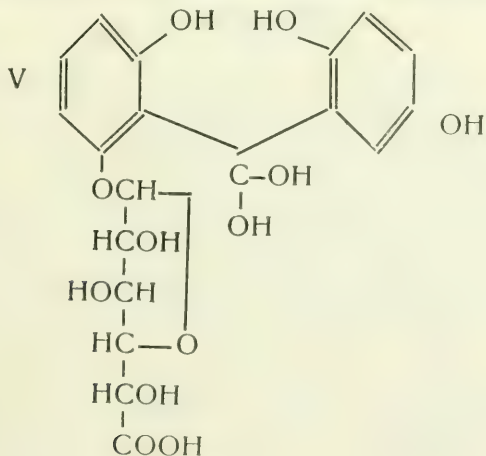
<sup>2)</sup> Ann. Chem. 350, 108,



Constatons, en outre, que seule la dernière de ces formules fait prévoir la formation de l'acide euxanthique par conversion d'un isomère qui serait alors :



En effet, si l'on attribue cette dernière formule à la mangiférine, on conçoit facilement que celle-ci peut se transformer en acide euxanthique par simple addition et perte d'eau, le noyau I se déplaçant pendant ce temps de 180°, de sorte que :



serait le produit intermédiaire de la réaction. La formule proposée rend bien compte de toutes les propriétés de la mangiférine; elle repose sur les observations suivantes:

1°. La mangiférine ne renferme pas de carboxyle libre; conformément à cette constatation la copule glycuronique s'est éthérifiée, dans la formule proposée avec un oxhydrile phénolique, de l'autre noyau benzénique, constituant ainsi une chaîne fermée contenant des carbones asymétriques.

2°. Or, la transformation d'une chaîne ouverte, contenant un carbone asymétrique, en une chaîne fermée, élève généralement le pouvoir rotatoire <sup>1)</sup>. On pouvait donc s'attendre à ce que la mangiférine possédât un pouvoir rotatoire plus élevé que l'acide euxanthique. C'est, en effet, ce qui a été constaté; tandis que l'acide euxanthique est lévogyre,  $[\alpha]_D = -100^\circ$ , d'après GRAEBE <sup>2)</sup> ou  $-108^\circ$ , d'après NEUBERG et NEIMANN <sup>3)</sup>, la mangiférine, par contre, est dextrogyre. J'ai trouvé  $[\alpha]_D = +32,8^\circ$ .

3°. La mangiférine contient deux oxhydriles phénoliques.

5°. Elle donne un hepta-acétate.

### Partie Expérimentale.

Pour préparer la mangiférine, le mieux est de partir de l'écorce du manguiier, préalablement épuisée par la benzine. On extrait celle-ci, à chaud et à plusieurs reprises, avec de l'alcool à 60 % et on évapore la solution alcoolique au bain-marie; la mangiférine se dépose alors sous forme de petites aiguilles jaunes avec un rendement de 2,5 %.

Quand on part des feuilles comme matière première, on procède d'une façon analogue, avec cette différence seulement qu'on étend avec de l'eau la solution alcoolique concentrée au bain-marie. Au bout de deux jours, le liquide est décanté du dépôt qu'on lave par décantations répétées, d'abord avec de l'eau, puis avec de l'alcool à 60 %. Le rendement a été de 1,7 %.

### Mangiférine.

Recristallisée dans l'alcool, la mangiférine s'obtient en aiguilles minces et anhydres d'un jaune très pâle, fusibles à  $264^\circ$ , si l'on élève la température de  $1^\circ$  toutes les 5 secondes; le point de fusion corrigé, déterminé à l'aide d'un thermomètre d'ANSCHÜTZ, a été trouvé à  $271^\circ$ .

La mangiférine est peu soluble dans la plupart des dissolvants usuels, le mieux dans l'alcool à 60 %, d'où elle se dépose en petites aiguilles hydratées d'un jaune plus foncé. Lorsqu'on la met en contact, sous une lame de verre, avec une solution de bicarbonate de soude, on constate qu'il ne

<sup>1)</sup> Wurtz. Dict. de Chimie IIe Supp. T VII, p. 53.

<sup>2)</sup> Ann. Chem. 318. 350.

<sup>3)</sup> Z. physiol. Ch. 44. 119.

se dégage pas immédiatement de l'acide carbonique, comme c'est le cas avec l'acide euxanthique; seulement, peu à peu, quelques bulles de gaz se manifestent. Nous en avons conclu que la mangiférine ne contient pas de carboxyle libre.

La mangiférine a le caractère d'un phénol; elle donne avec le perchlorure de fer, en solution alcoolique, une coloration verte. En outre, elle se dissout dans la potasse avec une fluorescence verdâtre; saturée ensuite par l'acide carbonique, la solution se prend en gelée.

La mangiférine dévie à droite le plan de polarisation. Nous avons trouvé  $\alpha = +0,38^\circ$  pour  $c = 0,58$  dans de l'alcool à 70 % et  $l = 2$  dM; donc  $[\alpha]_D^{27} = +32,8^\circ$ .

Elle réduit la liqueur cupro-potassique de FEHLING, quand on la chauffe suffisamment longtemps au bain-marie. Chauffée avec le réactif de BIAL, — une solution d'orcine dans de l'acide chlorhydrique concentré, additionnée d'un peu de chlorure ferrique, — elle donne une coloration verte.

La solution alcoolique se précipite par addition d'acétate de plomb; elle donne un précipité jaune avec la baryte et un précipité d'un jaune orangé avec le réactif de MILLON. Par contre, l'acétate de magnésie ne fournit pas de précipité.

L'analyse de la mangiférine anhydre, qui ne perd rien de son poids à  $110^\circ$  dans le vide sur l'anhydride phosphorique, a donné des chiffres qui répondent à  $C_{14}H_{14}O_8$  aussi bien qu'à  $C_{19}H_{18}O_{11}$ .

I. 0,1746 gr. ont donné 0,3455 gr.  $CO_2$  et 0,0695 gr.  $H_2O$ .

II. 0,1495 „ „ „ 0,2943 „ „ „ 0,0620 „ „

$C_{14}H_{14}O_8$ . Calculé: C 54,2 ; H 4,5

$C_{19}H_{18}O_{11}$ . „ : „ 54,0 ; „ 4,3

Trouvé: „ 54,0; 53,7; „ 4,4; 4,6

Pour décider entre ces deux formules, nous avons préparé l'éther méthylique. Pour cela, nous avons suspendu 1 gr. de mangiférine pure dans 50 cc. d'alcool méthylique, puis nous avons ajouté 40 cc. d'une solution étherée de diazométhane obtenue à partir de 5 cc. de nitrosométhyluréthane. Bien vite un dégagement énergique d'azote s'est manifesté; au bout de 12 heures, le produit de réaction a été recueilli sur un filtre puis lavé avec de l'éther absolu. Le rendement a été de 0,8 gr. d'une poudre légèrement jaunâtre qui ramollit à  $267^\circ$ , puis fond à  $276^\circ$ .

La substance méthylée est peu soluble dans l'alcool, l'éther, le chloroforme, l'acétone et le benzène. Dissoute dans l'alcool, elle ne se colore pas immédiatement avec le chlorure ferrique; seulement, bien vite, elle prend une coloration d'un rouge brun. Nous n'avons pas pu en élever le point de fusion en précipitant la solution dans l'acide acétique par de l'alcool; aussi l'analyse du produit brut (I) a donné les mêmes nombres que celle de la substance purifiée presque blanche (II).

I.	0.1380 gr.	ont donné	0.2815 gr.	CO <sub>2</sub>	et	0.0650 gr.	H <sub>2</sub> O	
II.	0.1143	„ „ „	0.2335	„ „ „		0.0535	„ „	
III.	0.2340	„ „ „	0.2370	„ AgJ	(méthode de ZEISEL)			
	C <sub>14</sub> H <sub>13</sub> O <sub>7</sub>	(OCH <sub>3</sub> ).	Calculé :	C 55.6	;	H 4.9	;	OCH <sub>3</sub> : 9.6
	C <sub>19</sub> H <sub>16</sub> O <sub>9</sub>	(OCH <sub>3</sub> ) <sub>2</sub>	„ :	„ 56.0	;	„ 4.9	;	2 „ : 13.8
			Trouvé :	„ 55.6 ; 55.7	;	„ 5.2 ; 5.2	;	„ ; 13.4

La détermination du méthoxyle par la méthode de ZEISEL a donc décidé en faveur de la formule C<sub>19</sub>H<sub>16</sub>O<sub>9</sub> (OCH<sub>3</sub>)<sub>2</sub>; la mangiférine elle-même doit être représentée, dès lors, par la formule C<sub>19</sub>H<sub>18</sub>O<sub>11</sub>.

Recristallisée dans de l'alcool étendu, la mangiférine se dépose, comme nous l'avons vu tout à l'heure, en petites aiguilles jaunes d'un hydrate, qui s'effleurissent à l'air avec perte d'une molécule d'eau.

0.2000 gr. desséchés à l'air et traités immédiatement à 110° dans le vide sur l'anhydride phosphorique, ont perdu 0.0223 gr.

C<sub>19</sub>H<sub>18</sub>O<sub>11</sub> + 3H<sub>2</sub>O. Calculé : 3 H<sub>2</sub>O 11.3  
Trouvé : „ „ 11.2

0.2020 gr. d'un échantillon conservé à l'air pendant quelques jours, c'est à dire desséché jusqu'à poids constant, puis traité, de la même manière ont perdu 0.0160 gr.

C<sub>19</sub>H<sub>18</sub>O<sub>11</sub> + 2 H<sub>2</sub>O. Calculé : 2 H<sub>2</sub>O 7.9  
Trouvé : „ „ 7.9

L'anhydride acétique convertit la mangiférine en hepta-acétate. Pour cela, nous avons dissous, peu à peu, 0,5 gr. de cette substance dans un mélange de 3 cc d'anhydride acétique et de deux gouttes d'acide sulfurique concentré, en prenant soin que le mélange ne s'échauffe pas au-dessus de 40°. Au bout d'une heure, on précipite par de l'eau le produit de réaction qu'on purifie par dissolution dans de l'alcool et addition d'une solution de chlorure de sodium. On obtient alors une substance amorphe, d'une saveur légèrement amère, soluble dans l'alcool, l'acétone, l'éther acétique, le benzène et le chloroforme; insoluble dans l'éther et la ligroïne. Elle ramollit, quand on la chauffe, à 135° et fond dans les environs de 150°.

0.1530 gr. desséchés à 110°, ont donné 0.3105 gr. CO<sub>2</sub> et 0.0650 gr. H<sub>2</sub>O  
0.1784 gr. saponifiés par l'alcali, puis acidulés avec de l'acide phosphorique ont donné un distillat qui satura 17.5 cc d'alcali n/10.

C<sub>19</sub>H<sub>11</sub>O<sub>11</sub> (C<sub>2</sub>H<sub>3</sub>O)<sub>7</sub>. Calculé : C 55.3 ; H 4.5 ; 7 acétyle 17.4  
Trouvé : „ 55.3 ; „ 4.7 ; „ 17.5

Il est curieux de constater que l'acide euxanthique, contenant 6 oxydryles (voir form. III) ne donne, par la même méthode, qu'un dérivé tétra-acétylé. Recristallisé dans l'alcool à 80<sup>o</sup>/<sub>10</sub>, celui-ci se présente en prismes incolores et très amers, fusibles à 176°. Il est de réaction acide et fournit avec le bicarbonate de sodium, sous une lame de verre, un dégagement abondant d'acide carbonique. Desséché dans le vide sulfurique, cet acétate perd à 80° dans le vide sur l'anhydride phosphorique, une molécule d'eau provenant, évidemment, du groupe : C  $\begin{matrix} \text{OH} \\ | \\ \text{C} \\ | \\ \text{OH} \end{matrix}$  resté non acétylé.

- I. 0.2620 gr. ont perdu 0.0065 gr. d'eau.
- II. 0.2425 " " " 0.0070 " "
- III. 0.1970 saponifiés par l'alcali, puis acidulés par l'acide phosphorique,  
ont donné un distillat, qui satura 13.6 cc d'alcali n/10  
 $C_{19}H_{14}O_{11} (C_2H_3O)_4$ . Calculé; H<sub>2</sub>O 3.0 4 acét. 13.4  
 Trouvé: " 3.2; 2.9; " 13.6
- I. 0.1955 gr. (anh.) ont donné 0.4020 gr. CO<sub>2</sub> et 0.0825 gr. H<sub>2</sub>O
- II. 0.2355 " " " " 0.4845 " " " 0.0960 " "  
 $C_{19}H_{12}O_{10} (C_2H_3O)_4$ . Calculé: C 56.7 ; H 4.2  
 Trouvé: " 56.1; 56.2; " 4.7; 4.5
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## SOME GALLS FROM HONGKONG.

by

W. DOCTERS VAN LEEUWEN.

Buitenzorg — Java.

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On my way to Japan I had an opportunity to visit Hongkong for a few days and I filled in my time by making a few trips in the vicinity of the capital and in the New-Territory on the mainland of China. On these excursions I was able to look for galls, which up to present as far as I know, have not yet been described from this region. It is possible that in the article of V. FRAUENFELD „Notizen über die Fauna Hongkongs (Sitz. B. d. K. Ak. d. Wissensch. Wien. Bd. XXXV, 1859, p. 241) notes on galls may be found, but our library does not contain the above mentioned publication. Therefore a short description of the galls collected by me will perhaps be of interest to the students in this field of natural history. I am quite sure that further research will add many new forms, but the vegetation of this region which is not very rich in forms, may also account for the gallflora which is not as rich as in other hot countries. I am much indebted to the kindness of Mr. GREEN, Director of the Botanic Garden of Hongkong, who gave me the opportunity of studying the plants in the herbarium of the Garden and who provided me with an excellent Chinese guide on my trip to the New-Territory. I have not seen real virgin forests, but there were several spots in shady places along small rivulets which offered an excellent hunting ground for galls. In all I have collected 34 galls distributed as follows:

15	were	caused	by	gallmites,
6	„	„	„	gallmidges,
4	„	„	„	thrips,
4	„	„	„	psyllidae,
4	„	„	„	moths,
1	was	„	„	an aphid.

The thrips were studied by Dr. KARNY who will publish his results later. I was unable to determine the name of one plant. Most of the gall-forms occur also on Java, Sumatra and Malakka. For the determination of the infected plants I have employed the flora of Kwantung and Hongkong by Dunn and Tutcher (Kew Bulletin N. X, 1912) and the collection of specimens in the Hongkong herbarium.



## Literature cited:

- D. v. L. Java I: Einige Gallen aus Java. Erster Beitrag Marcellia VIII. 1909.  
 D. v. L. Java II: idem Zweiter Beitrag Marcellia Vol. VIII. 1909.  
 D. v. L. Java III: idem Dritter Beitrag Marcellia Vol. IX. 1910.  
 D. v. L. Java IV: idem Vierter Beitrag Marcellia Vol. IX. 1910.  
 D. v. L. Java V: idem Fünfter Beitrag Marcellia Vol. X. 1911.  
 D. v. L. Java VI: idem Sechster Beitrag Bulletin du Jardin. bot. de Buitenzorg, Série II. No. III. 1912.  
 D. v. L. Java VII: Siebenter Beitrag Bulletin-Série II. No. XV. 1914.  
 D. v. L. Sumatra: idem Beschreibungen von Gallen aus Sumatra und Simaloer. Bulletin Série II. No. XXI. 1916.

No. 1. *Acronychia laurifolia* BL.

Leaf-gall caused by an acarid.

This is a very common gall in Java. Its irregular yellow or lightgreen bladders are developed on the undersurface of the leaf, average size about 5 mm. (in Java up to 50 mm). On the opposite surface of the leaf is a narrower or wider aperture giving access to the gallroom, the wall of which is covered by a dense erineum. This erineum consists of branched unicellular hairs. See the subjoined figure 1.

New-Territory, Sha-Tin, in a young pine-forest.  
 10 Nov. 1920. No. 4953.

Literature: D. v. L. Java V. No. 203. p. 67.



Fig. 1. Acarid-galls on *Acronychia laurifolia* BL.  
 $\times \frac{3}{4}$

No. 2. *Aporosa leptostachya* BENTH.

A stem-gall caused by a gallmidge.

On the bark are developed clusters of rounded galls with a small larval-chamber. The surface is covered by a light brown corky tissue. See the subjoined figure 2.

Isle of Hongkong, 8 Nov. 1920. No. 4926.

No. 3. *Aporosa leptostachya* BENTH.

A leaf-gall caused by a thrips.

In Java we found an exactly similar gall on *Aporosa microcalyx* HASSK., which was produced by *Dolerothrips trybomi* KARNY. This infection gives rise to, closely packed straw-green, red or dark-purple



Fig. 2. Itonid-galls on *Aporosa leptostachya* BENTH.  $\times \frac{3}{4}$



Fig. 3. A thrips gall on *Aporosa leptostachya* BENTH. nat. size

bladders which impede the full development of the leaf. When the leaf is badly attacked the vesicles may mass in compact bunches. See the subjoined figure 3. Dr. KARNY found two species of thrips in the galls: *Eothrips* nov. spec. (vic. *nervisequus*) and *Dolerothrips* nov. spec. (vic. *picticornis*).

Hongkong, in shady places, 8 Nov. 1920. No. 4922.

New-Territory, Sha-Tin, in underbrush, 10 Nov. 1920. No. 4941.

Literature: D. v. L. Java VII. No. 359. figure 162 and 163.

No. 4. *Bischofia javanica* BL.

A petiole-gall caused by a gallmidge.

Small swellings of the bark of the petiole (see figure 4) which are of a light green colour, when older the surface is covered with a light gray corky tissue. Inside there is a very narrow larval-chamber, tenanted by a gallmidge-larva.

Hongkong, in a thinly wooded locality, 8 Nov. 1920. No. 4936.



Fig. 4. An itonid-gall on *Bischofia javanica* BL, nat. size.

No. 5. *Breynia fruticosa* HOOK. F.

A bud-gall caused by a gallmidge.

At the end of the twigs irregular roundish swellings develop. Size about 6 mm. The surface is of a reddish-brown colour. Inside there are a few small larval-chambers. I found only one specimen. See figure 5.

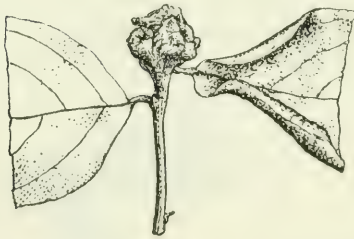


Fig. 5. A midge-gall on *Breynia fruticosa* HOOK. F. nat. size.

Hongkong, in a thinly wooded locality, 8 Nov. 1920. No. 4932.

No. 6. *Breynia fruticosa* HOOK. F.

A stem-gall caused by a moth.

An almost similar gall is very common in

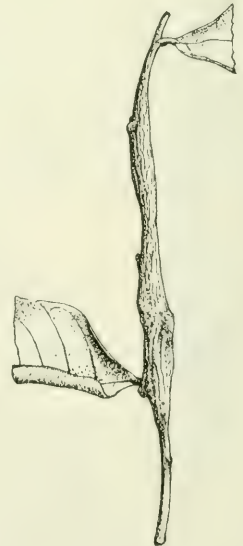


Fig. 6. A moth-gall on *Breynia fruticosa* HOOK. F.  $\times \frac{3}{4}$ .

Java on *Breynia racemosa* BL. Its galls are spindle-shaped swellings of the twigs, about 60 mm. long and 5 mm. in diameter, and of a reddish-brown colour. Inside there is a narrow chamber, tenanted by a caterpillar of a dirty green colour. See accompanying figure 6,

Hongkong, in shady places, 8 Nov. 1920. No. 4919.

New-Territory Sha-Tin, underbrush, 10 Nov. 1920. No. 4951.

Literature: D. v. L. Java II. No. 25.

#### No. 7. *Bridelia tomentosa* BL.

A bud-gall caused by a moth (prob.).

The buds are extended into green fusiform, or onionlike galls. Average size about 6 mm. long and 3 mm. in diameter. Mostly swollen at their base and ending in a point. Inside there is a wide larval-chamber. All the galls found by me were empty, but it is probable that the gallformer is a caterpillar. See the accompanying figure 7.



Fig. 7. A moth-gall on *Bridelia tomentosa* BL. nat. size.

New-Territory, Sha-Tin, underbrush, 10 Nov. 1920. No. 4945.

#### No. 8. *Bridelia tomentosa* BL.

A leaf-gall caused by a psyllida.

On the underside of the leaf these galls form small conical outgrowths, situated mostly near the main nerve; they are of a light-green colour. See figure 8. The average size of these outgrowths is 1 mm. On the reverse side these galls are seen as small rounded hardly visible swellings. The opening, which gives entrance to the gallchamber is on the underside of the gall.

New-Territory, Sha-Tin, underbrush, 10 Nov. 1920. No. 4948.

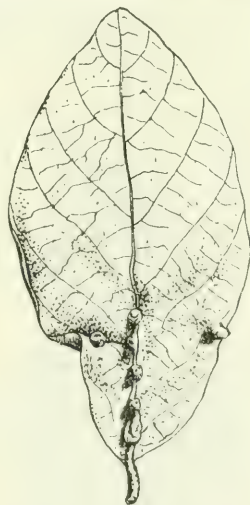


Fig 8. Psyllid-galls on *Bridelia tomentosa* BL. nat. size.

#### No. 9. *Eugenia Millettiana* HEMSL. (prob).

A stem-gall caused by a gallmidge.

The ends of the twigs are swollen into irregular ballshaped or oval galls. They consist of the stem-apex, and sometimes rudiments of the leaves are developed on the gall. Occasionally they can develop in the axils of the leaves. Average size 3—6 mm. in diameter. Inside there is a watery tissue in the centre of which are several small rounded larval-chambers. See figure 9.



Fig. 9. A midge-gall on *Eugenia Millettiana* HEMSL. nat. size.

New-Territory, Sha-Tin, underbrush. 10 Nov. 1920 No. 4943.

Literature: D. v. L. Java IV. No. 169. fig. 69.

No. 10. **Evodia triphylla** DC.

A leaf-gall caused by a gall-mite.

This gall resembles closely the mite-gall on *Evodia accedens* BL. caused by *Eriophyes evodiae* NAL. The small flat bladders are to be found on the upper-surface of the leaf. On the reverse side, these bladders are covered with a white erineum. The bladders are irregularly rounded and of about 8 mm. diameter.

New-Territory, Sha-Tin, underbrush. 16 Nov. 1920. No. 4950.

No. 11. **Faradaya splendida** F. MUELL.

Leafgall caused by an aphid.

The leaves are shriveled and folded. Like the case of infections by *Aphidae* the leafblade grows out beyond the main nerve which remains shorter. Often the tops of the twigs bear bunches of infected leaves. See figure 10.

Hongkong, Botanic Garden, 6 Nov. 1920. No 4916.



Fig. 10. An Aphid-gall on *Faradaya splendida* F. MUELL.  $\times \frac{3}{4}$ .

No. 12. **Ficus chlorocarpa** BENTH (prob).

A leaf-gall caused by a psyllida.

The plant from which I collected the gall was a small shrub without fruit and therefore I could not determine the real name, perhaps it may be the above mentioned species. The gall closely resembles the psyllida-gall on *Ficus glomerata* ROXB. very common in Java and also found by me in Siam. The uppersurface of the leaf was thickly covered with reddish or red ballshaped swellings, about 3 mm. in diameter. See figure 11. On the undersurface there are small swellings with an aperture in each leading into a spacious gall-chamber.

New-Territory, Sha-Tin, along a dry ditch. 10 Nov. 1920, No. 4944,

Literature: D. v. L. Java IV. No. 172.



Fig. 11. Psyllid-galls on *Ficus chlorocarpa* BENTH.  $\times \frac{3}{4}$ .

No. 13. **Ficus retusa** L.

A leaf-gall caused by a thrips.

Very common in all tropical countries from North-Africa to the Dutch East Indies. Both halves of the leafblade remain smaller and are folded together, so that the underside of the leaf forms the outside of the gall. The galls are mostly reddish brown in colour. The thrips inside

the gall, were studied by Dr. KARNY, who discovered the following species: *Cryptothrips* nov. spec. (vic. *nigripes*); *Gynaikothrips uzeli* ZIMM.; *Leptothrips constrictus* KARNY and *Mesothrips jordani* ZIMM.

Hongkong, along roadsides, 6 Nov. 1920. No. 4912.

New-Territory, near the railway station of Sha-Tin.

10 Nov. 1920. No. 4947.

Literature: D. v. L. Java. II. No. 41.

No. 14. *Ficus retusa* L.

A leaf-gall caused by a gallmidge.

Small light green flat swellings on both sides of the leafblade mostly more or less arranged in a row from the base to the apex of the leaf, or only over a part of this distance. Average size about 2 mm. See figure 12. Inside there are 2 to 3 very small larval chambers surrounded by a hard tissue. Known also from Java.



Fig. 12. Itonid-galls on *Ficus retusa* L.  $\times 34$ .

New-Territory, Sha-Tin, Railwaystation. 10 Nov. 1920. No. 4955.

Literature: D. v. L. Java V. No. 222.

No. 15. *Ficus* spec.

A leaf-gall caused by a psyllida.

The tree bearing the galls was planted along a roadside on the south side of Hongkong island. The plant bore no fruit, therefore it was not possible to determine it. It resembles closely the well known *Ficus variegata* BL. of Java. But this species of *Ficus* is not mentioned in the flora of Hongkong. Perhaps it is: *Ficus ramentacea* ROXB. which also has cordate leaves. The galls resemble closely the psyllid gall on *Ficus variegata*. These ballshaped brown excrescences are found on the upper surface of the leaf, about 5 mm. in diameter. On the lower surface there are only small openings.

Hongkong, along a roadside. 8 Nov. 1920. No. 4930.

Literature: D. v. L. Java III. No. 112.

No. 16. *Ficus* spec.

Bark-gall caused by a psyllida.

On the bark of the twigs or petioles of seedlings are developed ballshaped conical light green excrescences from 3—10 mm. in diameter. Inside there is a spacious larval-chamber with a very thin wall.

Little Hongkong, in shady places, on young seedlings, about 300 feet above sealevel. 8 Nov. 1920. No. 4928.

No. 17. **Glochidion hongkongense** M. A. (prob).

A leafgall caused by a moth.

On the underside of the leaf are developed big oval swellings of a light green colour. They are more or less pointed. See figure 13. On the opposite surface of the leaf they are hardly to be seen, except only as small convexities



Fig. 13. Moth-galls on *Glochidion hongkongense* M. A, nat. size.

or flat swellings which show the place of attachment of the gall. Inside there is a long narrow larval-chamber surrounded by a thick wall. Often the leaves were totally covered with the galls.

New-Territory, Sha-Tin, underbrush. 10 Nov. 1920. No. 4954.

No. 18. **Grewia microcos** L.

A leafgall caused by a gallmite.

On the uppersurface of the leaf are developed irregularly rounded brown swellings of about 2—4 mm. in diameter. On the other side of the leaf the gall is hardly visible, only a small aperture with a low hairy wall is developed. This gall I have found in Singapore, Penang and Bangkok and I have described it as also occurring in Sumatra.

In a thin forest on the island of Hongkong; about 150 feet above sealevel. 8 Nov. 1920. No. 4921.

Literature: D. v. L. Sumatra. No. 19. fig. 19.

No. 19. **Hibiscus mutabilis** L.

A leafgall caused by a gallmite.

On the upperside of the leaf are developed irregular rounded bladders size from 1—10 mm. They are thickly covered with long white hairs. On the underside these bladders are covered by a thick velvetlike erineum. Often the whole leaf may be covered by the gallbladders. They can also grow on the leaves of the calyx.

Hongkong, Botanic Garden. 6 Nov. 1920. No. 4914.

No. 20. **Hibiscus tiliaceus** L.

A leafgall caused by a gallmite: *Eriophyes hibiscitileus* NAL.

A gall common on tropical beaches and described from many places. Irregular, white, green or reddish bubbles on the upperside of the leaf. These are also developed on the underside of the leafblade, where the opening of the gall is found.

Hongkong, on the beach, 8 Nov. 1920. No. 4931.

New-Territory, Sha-Tin, roadside near the railwaystation. 10 Nov. 1920. No. 4949.

No. 21. *Ipomoea* spec.

A leaf, petiole and stem gall caused by a gallmite.

On the leaves they are developed on both sides. On the upperside more or less hemi-spherical; on the underside conical, with an opening on the top of the gall; about 2 mm. in diameter. On the petioles and stems they are conical or oval outgrowths of the bark with an aperture on the top of the gall. See figure 14. The inside of the gallchamber is divided by outgrowths from the inner wall.



Fig. 14. Mite-galls on *Ipomoea* spec. nat. size.

Hongkong, in a thinly wooded locality, about 300 feet above sealevel, 8 Nov. 1920. No. 4924. New-Territory, Sha-Tin, underbrush, 10 Nov. 1920. No. 4952.

No. 22. *Nephelium longana* CAMB.

A leafgall caused by a gallmite.

On the uppersurface of the leaf are developed irregular oval bladders, 2—10 mm. in diameter. See the subjoined figure 15. On the reverse side the bladders are covered with a white erineum, which later becomes brown.

Hongkong, Botanic Garden, 6 Nov. 1920. No. 4917

No. 23. *Nephrolepis hirsutula* PR.

A leafgall caused by a gallmite: *Eriophyes pauropus* NAL.

A very common gall of the tropical countries of Asia. Irregular conical or ballshaped excrescences of the leafblade situated mostly on the edge of the leaf.

Mr. V. ALDERWERELT VAN ROSENBURGH the well known fern specialist of the Buitenzorg Herbarium told me that the plants collected by me belong to a form between *N. hirsutula* PR. and *N. tomentosa* V. A. V. R. Both forms are not described in the flora of Hongkong. Judged by the flora of Hongkong, I should think my specimen is *N. exaltata* SCHOTT.

Hongkong, Botanical Garden, 6 Nov. 1920. No. 4915.

Literature: D. v. L. Java I. No. 16, fig. 11.

D. v. L. Ueber die von *Eriophyes pauropus* NAL. an verschiedenen Arten von *Nephrolepis* gebildeten Blattgallen. Annales du Jardin botanique. Vol. XXXI. 1921. p. 83.



Fig. 15. Mite-galls on *Nephelium longana* CAMB. nat. size.



Fig. 16. A moth-gall on *Phyllanthus Emblica* L.  $\times \frac{3}{4}$ .

No. 24. ***Phyllanthus Emblica* L.**

A stem-gall caused by a moth.

Spindleshaped swellings of the woody tissues of the stem, covered by the brown bark of the normal stem. Inside there is a spacious larval-chamber tenanted by a caterpillar. See figure 16.

Hongkong, Eastern part of the island, on rocky coast. 8 Nov. 1920. No. 4923.

No. 25. ***Piper Hancei* MAXIM.**

A leafgall caused by a thrips: *Gynaikothrips chavicae* (ZIMM).

The leaves are folded or curved around the main nerve and are covered with white bubbles which lie in rows or groups and may cover the whole leaf. See figure 17.

Hongkong, young forest, about 300 feet above sealevel. 8 Nov. 1920. No. 4918.



Fig. 17. A thrips-gall on *Piper Hancei* MAXIM.  $\times \frac{3}{4}$ .

No. 26. ***Piper sarmetosum* ROXB.**

A leafgall caused by a thrips: *Gynaikothrips chavicae* (ZIMM).

The gall resembles more or less the foregoing one, but the attacked leaves are often white or yellowish. Very common in Java, but there they are formed by *Gynaikothrips pallipes* KARNY.

Hongkong, in shady places, about 300 feet above sealevel. 8 Nov. 1910. No. 4925.

Literature: D. v. L. VII. No. 478.



Fig. 18. Mite-gall on *Rhus hypoleuca* CHAMP.

No. 27. ***Rhus hypoleuca* CHAMP.**

A leafgall caused by a gallmite.

The upperside of the leaf is covered with hundreds of minute pustules, which have a yellow or redbrown colour. On the reverse side a white, velvetlike erineum is developed consisting of long white hairs. Size between  $\frac{1}{2}$  — 1 mm. See figure 18.

New-Territory, Sha-Tin, along a road. 10 Nov. 1920. No. 4942.



No. 28. *Rhus succedana* L.

A leafgall caused by a gall-mite.

Same gall as in the foregoing on *Rhus hypoleuca* CHAMP. but not so abundant on the leaf. Moreover the surface of the gall is not yellow or redbrown, but more light green or yellowish green. See figure 19, which shows the underside of the leaf.

Hongkong, in open places, about 60 feet above sea-level. 8 Nov. 1920. No. 4940.

No. 29. *Schefflera octophylla* (= *Heptapleurum oct.* HANCE).

A leafgall caused by a gall-mite.

On either surface are developed granular patches which consist of light-greenish outgrowths of the epidermis of the leaf. Yellow bladders with the granular patches on their convex or on the concave sides may also be developed. In Java we found a similar gall on species of *Macropanax*.

Hongkong, Botanic Garden, 6 Nov. 1920. No. 4913.

Literature: D. v. L. VII. No. 454 and 455. figure 208.

Fig. 19. Mitte-galls on *Rhus succedana* L. nat. size.

No. 30. *Toxocarpus Wightianus* HOOK.

A leafgall caused by a gall-mite.

On the upperside of the leaf are formed small granular irregular patches of a bright-red colour. On the underside no trace of the gall is to be seen.

Hongkong, underbrush near the sea. 8 Nov. 1920. No. 4935.

No. 31. *Uvaria microcarpa* CHAMP.

A leafgall caused by a gallmite.

The underside of the leaf is partly covered with a red brown erineum which in the beginning is white. The galls are really large bladders, which may change the form of the whole leaf. A similar gall has been described by A. TROTTER on *Uvaria macrophylla* from Singapore.

Hongkong Island, thinly wooded locality. 8 Nov. 1920. No. 4939.

Literature: A. TROTTER. Miscelanea cecidologiche. Marcellia Vol. XVI. 1917. p. 150.

No. 32. *Uvaria microcarpa* CHAMP.

A stemgall probably caused by a moth.

Spindleshaped swellings of the woody tissues of the stem, covered by the ordinary, but not thickened bark. The galls were abandoned by the gallformers which probably are moths. See figure 20.



Fig. 20. Moth-galls on *Uvaria microcarpa* CHAMP.  $\times \frac{3}{4}$ .

Hongkong Island, thinly wooded locality. 8 Nov. 1920. No. 4937.

No. 33. **Vitex heterophylla** ROXB.

A leafgall caused by a gallmite.

On either surface of the leaf are developed round granular patches of a bright white colour. Average size about 3 mm. On the reverse side the galls are hardly discernable. The gallgrowth consists of peculiarly formed hairs, which are clubshaped and multicellular.

Hongkong Island, near Repulse-bay in thinly wooded locality. 8 Nov. 1920. No. 4938.

Literature: D. v. L. Java VII. No. 689. p. 73.

No. 34. **Rubiacea.**

On a shrub which was flowering belonging to the above mentioned family, I found a gall caused by a gall-mite. It seems better to leave the determination of this gall to another scientist, who collects material in Hongkong. Descriptions of galls on plants which have not been determined are of no use, if they have no striking features, which is true in this case.

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BOTANICO BOGORIENSI COLUNTUR.

Auctore

D. F. VAN SLOOTEN.

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**Casearia** JACQ.

flavovirens BL., Patria? III F 41; IV F 20.

**Flacourtia** (COMM.) L'HÉRIT.

inermis ROXB., Patria? IV F 13, 37, 68, 73; XI H 51; XI I 20.

Jangomas (LOUR.) RAEVSCH., Borneo <sup>1)</sup>: IV F 3.

Patria? IV F 1, 2, 65.

Rukam Z. et M., Banka: IV F 115.

Patria? XI G 108.

**Hemiscolopia** V. SL.

trimera (BOERL.) V. SL., Banka: IV F 69.

Patria? IV F 71.

**Homalium** JACQ.

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Patria? IV A 23; IV F 10, 11.

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**Pangium** (RUMPH.) REINW.

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**Ryparosa** BL.

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javanica (BL.) KURZ., Patria? III F 15; VIII F 73; IX A 31, 32.

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<sup>1)</sup> Habitatio, non distributio.

**Scolopia** SCHREB.

Roxburghii (BENN.) CLOS., Sumatra: IV F 70.

Patria? IV F 103.

**Taraktogenos** HSSKL.

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**Xylosma** G. FORST.

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INDEX COMBRETACEARUM QUAE ANNO 1921 IN HORTO  
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Auctore

D. F. VAN SLOOTEN.

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**Anogeissus** WALL.

acuminata WALL., Patria? XV K B LXIX 2.

**Lumnitzera** WILLD.

racemosa WILLD., Java <sup>1)</sup>: II Q F 6.

**Combretum** L.

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decandrum ROXB., Patria? XVIII B 24, 50.

latifolium BL., Java: XVIII B 30, 36.

Celebes: XVIII B 46, 48.

Patria? XVIII B 25, 32, 38, 57, 58.

Loeflingii EICHL., Patria? XVIII B 45a.

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punctatum BL., Patria? XVIII B 33.

quadrangulare KURZ., Siam: VII D 55a.

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Patria? XVIII B 41.

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Celebes: VII D 18; X F 40a.

Patria? VII D 14, 37; XII B VIII 120, 123;

XII B IX 1.

Arjuna W. et A., Patria? VII D 28, 32; VII F 24.

belerica ROXB., Sumatra: VII F 7.

Patria? VII F 25, 29, 30a, 33, 36; VI A 18.

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<sup>1)</sup> Habitatio, non distributio.

- Catappa* L., Banka: VII F 37.  
Celebes: VII F 42.  
Suriname: VII D 30.  
Patria? VII D 31; VII C 20a.  
*Chebula* RETZ., Patria? VII D 34.  
*edulis* BLANCO, Borneo: VII F 27.  
Patria? VII F 28.  
*macrocarpa* V. SL., Patria? VII D 26.  
*sumatrana* MIQ., Sumatra: VII F 32.

**Quisqualis** L.

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INDEX VERBENACEARUM QUAE ANNO 1921 IN HORTO  
BOTANICO BOGORIENSI COLUNTUR.

Auctoribus

R. C. BAKHUIZEN VAN DEN BRINK et H. J. LAM.

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**Verbena** L.

- arborea Patria? XV K A XLV 17.  
bonariensis L. Patria? XV K A XLV 12.  
bracteata CAV. ex LAG. et RODR. Patria? XV K A XLVI 18.  
canadensis BRITT. Patria? XV K A XLV 2.  
carolina L. Patria? XV K A XLVI 12.  
corymbosa RUIZ. et PAV. Patria? XV K A XLIV 4.  
erinoides LAM. Patria? XV K A XLV 10.  
erinoides LAM. var. alba. Patria? XV K A XLV 15.  
hybrida Hort. XV K A XLV 13.  
officinalis L. Patria? XV K A XLV 9.  
quadrangularis VELL. Patria? XV K A XLVI 5.  
supina L. Patria? XV K A XLIV 3.  
venosa GILL. et HOOK. Patria? XV K A XLV 5.

**Lantana** L.

- Camara L. Patria? XV E 46, 47, 48, 49, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60.  
canescens H. B. K. Patria? XV K A XLV 19.  
stricta Sw. Patria? XV K A XLVI 1.  
trifolia L. Patria? XV J A XXXVI 4, XV K A XLVI 14.

**Lippia** L.

- nodiflora RICH. var. repens SCHAU. Patria? XV K A XLVI 3.

**Bouchea** CHAM.

- incrassata LANGE Java. XV K A XLV 14.

**Stachytarpheta** VAHL.

- dichotoma VAHL. Patria? XV K A XLVI 7.  
indica VAHL. Patria? XV K A XLVI 6.  
jamaicensis VAHL. Patria? XV K A XLVI 8.  
mutabilis VAHL. Patria? XV K A XLVI 9.

**Priva** ADANS.

lappulacea PERS. Java XV K XLVI 15.

**Petraea** L.

arborea H. B. K. Patria? XV E 75.

volubilis L. Patria? XV E 73, 74.

volubilis L. var. guyanensis. Patria? XV E 72.

**Citharexylum** L.

cinereum L. Jamaica. XI G 19.

laetum HIERN. Patria? XI G 50, 52.

quadrangulare JACQ. Cuba. XI G 17, 51.

subserratum SW. Cuba. XI G 18.

**Duranta** L.

Plumieri JACQ. Patria? XI G 1, 3, 4, 6, 8, 11, 12, 59, 62, 64.

stenostachya TOD. Patria? XI G 5.

**Callicarpa** L.

acuminata ROXB. Sumatra. XI G 26.

China XI G 25.

americana L. Florida. XI J A XXIX 4.

cana L. var. sumatrana H. J. L. Sumatra. XI G 27.

japonica THUNB. var. dichotoma BAKH. Patria? XV K A XLV 6.

longifolia LAM. Borneo. XV J A XXIX 4.

macrophylla VAHL Patria? XI G 91, XV F 31, XV J A XXX 3.

pedunculata R. BR. Ambon. XI G 48, 92, XV F 30.

Groot Kei. XI G 49.

pentandra ROXB. forma farinosa BAKH.

Patria? XI B XVIII 218, XI G 85.

pentandra ROXB. forma hexandra BAKH.

Boeroe. XI G 22.

Menado XI G 20.

tomentosa MURR. Sumatra. XI G 83.

**Tectona** L. F.

grandis L. F. Patria? XI I 25.

Hamiltoniana WALL. Patria? XI J 10.

**Premna** L.

acuminata R. BR. Australia. XI G 67, XV F 23, XV J A XXXIII 6.

integrifolia L. Boeroe. XI K 2.

Celebes. III L 17, XI J 3.

N. Guinea, XI J 11, XI K 12.

Patria? XV F 2, 4, XI I 17, 19, XI J 17, XI K 31, 33,

XV F 2, 4.





**Faradaya** F. v. MUELL.

dimorpha PULLE. N. Guinea XV E 35, XV F 20.

splendida F. v. MUELL. N. Guinea XV F 11.

Patria? XV F 9, 10, 12.

**Clerodendron** L.

Buchanani WALP. Patria? XV K A XLVI 10.

Buchanani WALP. var. fallax BAKH. Patria? XV K A XLVI 2.

calamitosum L. Java. XI G 63, XII B VI 2.

Patria? XV K A XLVI 16.

capitatum SCHUM. et THONN. Africa XV F 16, XV J A XXXII 5.

Patria? XII B VI 7.

Cunninghamii BENTH. Australia. XV J A XXXIII 7, XV J A XXXIV 2.

disparifolium Bl. var. eriosiphon BAKH. Java. XI G 81, XII B II 29,  
XII B III 22.

fragrans WILLD. flore pleno, Java. XV K A XLVI 17.

hastatum LINDL. Java. XI G 60, 102, XV J A XXXI 7, XV L 3, 4.

Ind. or. XII B VI 22, XV J A XXXIII 4.

Japon. XI G 58.

Patria? XI G 55, 61, 79, XV L 2, 7.

incisum KLOTZSCH. var. macrosiphon BAKER. Patria? XV K A, XLVI  
20, XV A T 4.

indicum O. KTZE. Celebes. XV K A XLVI 13.

Patria? XI B VI 51.

inermis GAERTN. Java. II Q C 10;

N. Guinea. XV F 26.

Patria? XV F 17, 18, 28.

laevifolium BL. Java. XV J A XXXIII 2.

macrophyllum BL. Java. XII B VI 9.

Minahassae T. et B. Celebes. XI G 107, XI I 22, XV J A XXXIII 3, XV L 1.

nutans WALL. Java. XV J A XXXIII 5.

Patria? XI G 57, XV L 9.

paniculatum L. Java. XI G 24.

Sahelangii KDS. Menado. XV J A XXXIV 5.

serratum SPRENG. Patria? XI G 75, XII B IX 44, XV J A XXXII 3.

speciosissimum PAXT. Patria? XI G 76.

splendens G. DON. Patria? XV F 25.

squamatum VAHL. Borneo. XV J A XXXII 8.

Celebes. XV J A XXXII 7.

Japon. XV L 8.

Patria? XV J A XXXIII 1.

squamatum VAHL. var. Bethunianum BAKH. Patria? XV L 10.

Thomsonae BALF. F. Patria? XV F 14, 21.

Thomsonae BALF. F. fol. var. Patria? XV F 24, XV K A XLV 8.

Thomsonae BALF. F. form. Patria? XV K A XLVI 4.  
 villosum BL. Patria? XI G 66.

**Holmskjoeldia** RETZ.

sanguinea RETZ. Patria? XV F 27, XV J A XII 3.

**Peronema** JACK.

canescens JACK. Sumatra. XI J 4, XI K 25.

**Petraeovitex** OLIV.

multiflora MERR. Molucc. XV G 3, 8, 46.

**Hymenopyramis** WALL.

brachiata WALL. Patria? XI I 30, 31, 33, XV E 66.

**Sphenodesme** JACK.

unguiculata SCHAU. Patria? XV F 33.

**Congea** ROXB.

velutina WIGHT Patria? XII B IX 53, XV E 71.

villosa WIGHT Patria? XII B VIII 20, XV E 70.

# THE GALLS OF THE ISLANDS OF THE KRAKATAU-GROUP AND OF THE ISLAND OF SEBESY

by

W. DOCTERS VAN LEEUWEN

(Buitenzorg).

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## Introduction.

In a previous article <sup>1)</sup> the new gall-flora of Krakatau was discussed by me. The reader may be assumed to be aware that in 1883 Krakatau was completely devastated, stripped of all animal and vegetable life, and it was therefore worth while investigating to what extent the galls had also got back to this island after the new flora had been formed. Not only Krakatau was ravaged by this eruption, all the islands in the Sunda Strait and the adjacent coasts of Sumatra and Java suffered more or less. The Island of Sebesy, situated at only 19 miles' distance from Krakatau (see the map on table 1) was hit hardest. But the devastation had not gone so far as that of the islands of the Krakatau group.

During the excursions which were made on the island of Sebesy for the purpose of becoming acquainted with the new flora, I had also opportunities of collecting galls, though attention could not be devoted exclusively to this subject. Although the vegetation was probably not entirely destroyed, and has been partially restored from rhizomes, tree-stumps and seeds, we may assume that the galls had disappeared altogether from the island and could not return there until after a considerable lapse of time, seeing that hardly any plants were present on the island during the first year. As the flora was soon far richer than that on the far more intensely ruined Krakatau, the chances for the recuperation of the gall-flora were greater, and I accordingly found on Sebesy a number of varieties not yet occurring on Krakatau, and which indeed could not occur there because the plants on which the galls grow had not yet reached the islands of the Krakatau-group.

On Krakatau and Verlaten Eiland I made several more trips after my first visit in April 1919 and the number of galls now found by me already amount to 44, which is indeed a large number, when one considers that the flora is as yet very poor in the number of different species of plants, and that the gall-producing creatures had to be conveyed over so great a

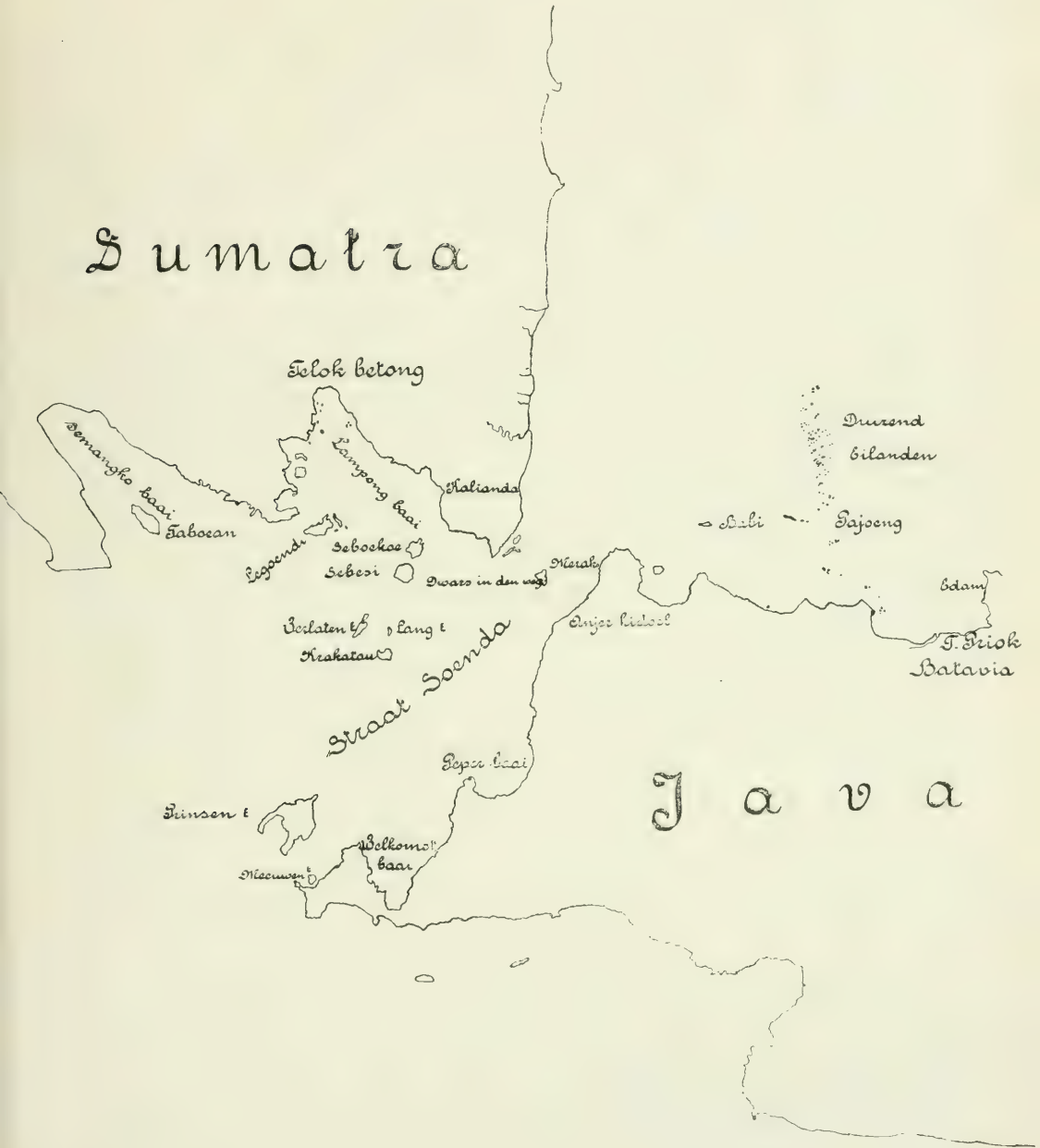
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<sup>1)</sup> W. DOCTERS VAN LEEUWEN. The galls of "Krakatau" and "Verlaten Eiland" (Desert Island) in 1919. *Annales du Jard. Bot. Buitenzorg*. Vol. XXXI. 1920. p. 57.



## ERRATA.

On page 288, line 9: „table 1” should be „table 13”.



Map of Sunda Strait, 1: 2,000,000





distance. Of these phenomena I have already treated in my article just mentioned to which I may refer the reader. At that time I was not aware of an article by FELT<sup>1)</sup>, on the distribution of the gallmidges, in which some important observations are communicated regarding the manner of the distribution of these creatures. He informs us e. g. that the gallmidge-galls may be spread by birds, such as the galls formed by *Cincticonia*, which are eaten by birds. In galls with a thick-walled gall-cavity the inmates might perhaps pass through the intestinal canal of birds without being digested. Still this manner of distribution cannot be of great importance according to FELT, who lays more stress on the spreading by the wind, when either the creatures are simply blown along, or they actively aid the wind by flying along with it.

In my previous article I pointed to the possibility of the gallmidges having come over by floating or drifting from coast to coast inside their galls. But it had not yet been demonstrated that such galls could stand such a prolonged transport without peril. During my last stay at Verlaten Eiland I was in a position to test this point, albeit for only one species of gall. I was dwelling in a tent at the edge of the saltwater lake, whose salinity does not differ much from that of seawater. In the vicinity of this place the gall-midge gall on *Clerodendron inerme* was very prevalent. I gathered a number of twigs studded with galls, tied them together and then let them float about in the lake for a week fastened by a rope to a pole in the lake. A part of them was regularly above water, another part was regularly submerged, and was tossed about, though not so briskly as in a billowy sea. After this week all the galls were still normal, they had remained green and the gall-creatures inside the galls were very much alive. I think I may assume that also other species may keep alive for a shorter or a longer time in the sea, when enclosed in their galls. ERNST<sup>2)</sup> in his well-known study of the new flora of Krakatau has already discussed the point that, wind and weather permitting, the distance from Java and Sumatra to these islands may be traversed within a few days by things carried by a current in the sea. As to the distribution of other kinds of gall-creatures we are still in many respects in the dark.

I already pointed out in my earlier article that these galls ought not to be used as proofs of the antiquity of a flora, the number of varieties of galls that have crossed to these islands being so great. In all I have already found on Krakatau and Sebesy together as many as 82 forms of galls. It is therefore certainly not possible to speak of accidental circumstances here.

Both on Krakatau and on Sebesy the number of gall-mite galls is preponderant; this is a corollary not only of the degree of ease with which

<sup>1)</sup> E. F. FELT. Distribution of Gall-Midges. Proceedings of the Nation. Acad. of Science. Vol. III. 1917. p. 349.

<sup>2)</sup> A. ERNST. Die neue Flora der Vulkaninsel Krakatau. Vierteljahrschr. der Naturw. Gesellsch. in Zürich. Jahrg. 52. 1907.

the creatures are transported, but also of the condition of the flora. The sparse forest, the open spaces especially on the former island are more conducive to the development of mite-galls than of the more aqueous galls formed by gall-midges, as was also discussed already in my older article.

Out of the 82 galls, 19 occur both on Krakatau (inclusive of Verlaten Eiland) and on Sebesy; 25 are entirely new to me or not yet described and have been marked in this article with an \*.

All the finding-places and numbers also from the former publication have been noted again. The materials are accordingly to be consulted afterwards at the Herbarium of the Botanical Gardens of Buitenzorg.

The spreading of the mite-gall on *Ficus hispida* L. is peculiar. This gall was already described by me as occurring on Sumatra (under the wrong name of *Ficus hirta* BL.). I found this gall very abundantly on Sumatra and also on my tour through Malacca, in Singapore, Kuala Lumpur, Penang, Bangkok and Saigon, but thus far I have not yet found it in Java, though this variety of *Ficus* is quite common here and I have repeatedly paid attention to it. Concerning this gall we are therefore probably justified in assuming that the mites made their way to these islands from Sumatra. Another fact militating for this view is that it is quite abundant on the island of Sebesy, which is situated near to Sumatra; whereas on Krakatau, where that species of tree is also very abundantly found, I only found one specimen there, and not till my third excursion.

On Krakatau I found on 4 excursions, 44 forms of galls; out of this total 23 produced by gall-mites.

11	„	„	gall-midges.
4	„	„	aphides.
1	„	„	a coccide.
3	„	„	psyllidae.
1	„	„	a moth.
1	„	„	an unknown parasite.

On Sebesy were found on two excursions 57 forms of galls, 24 produced by gall-mites.

17	„	„	gall-midges.
1	„	„	an aphid.
1	„	„	a coccide.
7	„	„	psyllidae.
6	„	„	thripses.

Unfortunately the proof-reader in Holland made some confusing alterations in the text of my former article, without my knowledge. Not only has the punctuation been entirely changed, but some sentences have been altered in such a way, or words have been added, that the sense has been

either distorted or lost. Below follows the correction of the most disturbing errors.

- p. 58, l. 8 from top, "this is after all no matter", read: "this is after all no matter for surprise".
- p. 60, l. 8 from top: "the gall-mites may be carried by *other* insects or by winds", — this should be: "the gall-mites may be carried by insects or by winds".
- p. 60, l. 12. from top: "there remains then the distribution of the *insects* by the wind". *Insects* must be *mites*!
- p. 61, l. 20 from top "distribution of the insects by the wind", ought to be: "of the mites by the wind".
- p. 62, l. 9 from top: "the study of the Krakatau galls does not confirm these hypotheses", must be: "has sapped the basis of these hypotheses".
- p. 62, l. 15 from bottom: "On the contrary I found", drop, "on the contrary".
- p. 64, l. 13 from top: "a leafbud and stem-gall", read "a leaf-bud- and stem-gall".

As regards the literature I have usually cited only the most recent article where the gall in question was discussed. In the place quoted the further literature is usually found.

### Description of the galls collected. <sup>1)</sup>

#### No. 1. *Alstonia scholaris* R. BR.

A leaf-gall caused by a psyllida: *Pauropsylla tuberculata* CRAWFORD. The gall is developed on the upper- and on the undersurface of the leaf. On the upperside the gall is half globular and about 2<sup>1</sup>/<sub>2</sub> mm. across; on the underside it is conical with a blunt apex. In the top there is a narrow opening corresponding through a canal with the larval cavity. The gall is

<sup>1)</sup> The literature cited under the descriptions of the galls is:

- D. v. L. I: J. und W. DOCTERS VAN LEEUWEN. Einige Gallen aus Java. Beitrag I, Marcellia. Vol. VIII. 1909. p. 21.
- D. v. L. II: Idem. Beitrag II. Marcellia. Vol. VIII. 1909. p. 83.
- D. v. L. III: Idem. Beitrag III. Marcellia. Vol. IX, 1910. p. 37.
- D. v. L. IV: Idem. Marcellia. Vol. IX. 1910. p. 168.
- D. v. L. V: Idem. Marcellia. Vol. X. 1911, p. 65.
- D. v. L. VI: Idem. Bulletin du Jardin Botanique de Buitenzorg. Série II. No. III. 1922. p. 1.
- D. v. L. VII: Idem. Bulletin etc. Série II. N. XV. 1914. p. 1.
- D. v. L. VIII: Idem. Beitrag VIII. Bulletin etc. Série III. Vol. I. 1918. p. 17.
- D. v. L. Sumatra: Idem. Beschreibungen von Gallen aus Sumatra und Simaloer. Bulletin, etc. Série II. N. XXI. 1916. p. 3.
- D. v. L. Celebes: Idem. Beschreibungen von Gallen aus Celebes und aus den Inseln südlich von Celebes. Bulletin etc. Série II. N. XXI. 1916. p. 21.
- D. v. L. Krakatau: Idem. The Galls of Krakatau and Verlaten Eiland. Annales du Jardin Botanique de Buitenzorg. Vol. XXXI, 1920. p. 57.

very common in tropical countries and described from Java and other islands and by UICHANGO from the Philippine islands.

Sebesy-island, April 28th 1921, No. 5407.

Literature: 1) D. v. L. Java. III. No. 93. fig. 49;

2) L. UICHANGO. a biol. and syst. study of Philippine plant-galls. Phil. Journ. of Science. Vol. XIV. 1919. p. 544. Plate XII. fig. 2 and 3.

### No. 2. *Antidesma Bunius* SPR.

A leaf-gall caused by a gall-midge.

A very common gall on this appreciated fruit-tree. They are developed towards both surfaces of the leaf. On the uppersurface they are semi-globular dark green and glabrous (glossy) swellings, measuring about 5 mM. across. On the undersurface the galls are circular discoid swellings; as can be seen in the subjoined figure 1a. Inside there is a circular flat larval chamber.

Sebesy-island, in a native-village, April 22nd 1921, No. 5092.

Literature: 1) D. v. L. Java VIII. No. 518 with figure.

### No. 3. *Avicennia marina* (FORSK.) VIERH. var. *intermedia* (GRIFF.) BAKH.

A leaf-gall caused by a gall-midge: *Stephaniella falcaria* FELT.

A very common gall on this mangrove-plant; ball-shaped excrescences on the mid-rib of the leaf; see the accompanying figure.

Sebesy-island, tidal-forest. April 23th. 1921. No. 5201.

Literature: 1) D. v. L. Java. Beitrag III. Marcellia. Vol. IX. 1910. p. 40.

2) D. v. L. Additional Notes to the article of Mr. E. F. FELT on Javanese Gall-midges. Treubia. Vol. I. 1921. p. 153.

### No. 4. *Avicennia marina* (FORSK.) VIERH. var. *intermedia* (GRIFF.) BAKH.

Leaf-gall caused by a gall-midge: *Stephaniella falcaria* FELT.

A tiny excrescence developed on both sides of the leaf. Also common in Java but mostly difficult to find owing to its small size.

Sebesy-island, April 23th 1921. No. 5199.

Literature: See foregoing gall.



Fig. 1. A midge-gall on *Antidesma Bunius* SPR.  $\times 1$ .

**No. 5. *Bridelia tomentosa* BL.**

A bud-gall caused by a gall-midge.

The end-buds of the twigs are swollen into irregular semi-ballshaped or conical galls measuring 10—20 mM. across. The surface is glabrous but covered with the cicatrices of the leaf-rudiments. Often the leaves are developed but remain smaller than the normal ones. See the subjoined figure. Inside the gall there is one larval chamber with a thick parenchymatous wall. The surface is often covered with a corky tissue.

Common in Java.

Sebesy-island, April 22nd 1921, No. 5111.

Literature: D. v. L. VII, No. 365 figure 65.



Fig. 2. A midge-gall on *Bridelia tomentosa* BL.  $\times 1$ .

**\* No. 6. *Calanthe Zollingeri* RCHB. F.**

Flower-gall caused by a gall-midge.

The flower remains closed and is altered into a ball-shaped gall.

The leaflets are thick and soft and the generative organs, with the exception of the ovary, are hardly developed. The gall-chamber so formed is tenanted by a white gall-gnat larva. The ovary too is swollen though it takes no part in the gall-formation. The same was the case in flowergalls of two other orchids, *Eria obliterata* RCHB. F. collected by me, <sup>1)</sup> and *Liparis latifolia* LINDL. described by TREUB <sup>2)</sup>.

Sebesy-island, hill-top forest, about 700 M. April 25th 1921. No. 5269.

Literature: <sup>1)</sup> D. v. L. Java VII. No 399, figure 181.

<sup>2)</sup> M. TREUB. Abnormaal gezwollen ovariën van *Liparis latifolia* LINDL. Nederl. Kruidk. Archief. 1881. Serie 2. Vol. III. p. 404.

**\* No. 7. *Calophyllum Inophyllum* L.**

A leaf-gall caused by a lepidopteron.

These galls form long somewhat curved excrescences on the underside of the leafblade. They are about 30 mM. long and in the centre 4 mM. broad, they are pointed at both ends and from the middle to the ends they become regularly narrower. At the uppersurface there is only a very flat swelling, hardly to be seen. Inside there exists an irregular larval chamber; the caterpillar eating the tissues of the gall only a thin epidermis remains.

Verlaten-island, in the Casuarina-forest. April 22nd 1920. No. 4031.

**\* No. 8. *Cassytha filiformis* L.**

A gall on the flower-stalks caused by an unknown animal.

This gall was abundant on the beach of Verlaten Eiland, but no



Fig. 3. A flowergall on *Cassytha filiformis* L.  $\times 1$ .

as a year ago, the plants were badly infected and covered with thousands of galls forming thick clusters especially on the stem. See the subjoined figure 4.

Verlaten-island, April 27th 1919, No. 3726b; and April 22nd 1920, No. 4058.

Literature: D. v. L. Krakatau Nol. figure 1 and 2.

**No. 10. *Conocephalus suaveolens* BL.**

A leaf-gall caused by a thrips: *Eothrips taurus* (KARNY).

On this plant I collected in Java 6 different varieties of thrips-galls.

trace of a gall-producer was to be found. It is a kind of witches' broom, the internodes of the flower-stalks remaining short so as to form bunches with the flowers accumulated (close together). The gall-former may be a coccid or aphid.

Verlaten-island, on the beach, April 27th 1920. No. 4178.

**No. 9. *Clerodendron inerme* GAERTN.**

A gall on the leaf, bud and stem, formed by a gnat.

Described in my first publication on the galls of Krakatau. I found the same gall in the same spot



Fig. 4. A midge-gall on *Clerodendron inerme* GAERTN.  $\times 1/2$ .

This one is a rolling of the leaf-border to the upperside of the leaf. The surface of the gall is rough and of a reddish colour.

The wall of the gall is thickened and brittle, breaking if one tries to open it. On Java this gall was also tenanted by *Dolerothrips taurus* KARNY (syn. *Eothrips taurus* (KARNY)).

Sebesy-island, in the virgin forest of the mountain about 200 M. elevation, April 25th. 1921. No. 5240.

Literature: D. v. L. VII. No. 380.

**Coccinea cordifolia** COGN.

See the description of the gall of *Trichosanthes tricuspidata* LOUR.

No. 11. **Derris heterophylla** BARKE.

A flower-gall formed by a gall-gnat.

Described in my former contribution on the galls of Krakatau. (syn. *Derris uliginosa* BENTH.)

Island of Krakatau, April 24th 1919. No. 3512.

Literature: D. v. L. Krakatau No. 2, figure 3.

\* No. 12. **Eugenia** spec. 1.

A leaf-gall caused by a psyllida.

This gall is new to me. On the undersurface of the leaf are developed shallow small oval depressions. On the uppersurface of the leaf there exists only a dark green coloration. The gall depressions are situated between the offshoots of the main-nerve lying more or less in a row. The nymph of the psyllid fits snugly in the depression, average diameter about  $1\frac{1}{2}$  mM.

Sebesy-island, hill-top, about 700 M. April 25th 1921. No. 5255.

\* No. 13. **Eugenia** spec. 2.

A leaf-gall caused by a psyllida.

Same gall-form as the foregoing, but bigger. Average diameter 2 mM.

On the uppersurface is a yellow-coloured bubble. The galls are chiefly situated near the base of the leaf. See subjoined figure 5.

Sebesy-Island, hill-forest, about 300 M. April 25th 1921. No. 5316.



Fig. 5. A psyllid gall on *Eugenia* spec.  $\times \frac{1}{4}$



Fig. 6. A psyllid-gall on *Eugenia* spec.  $\times 1$ .

Sebesy-island, hill-forest, about 300 M, April 25th 1921. No. 5319.

No. 16. *Ficus ampelas* BURM.

A leaf-gall caused by a psyllida.

A very common gall in Java and Sumatra. On the uppersurface of the leaf yellow semi-ballshaped excrescences, on the undersurface conical outgrowths, with an opening in the top of the gall.

Sebesy-island, secondary forest, April 24th 1921. No. 5230.

Literature: 1) D. v. L. Java I. No. 6.

2) D. v. L. Sumatra, No. 11. figure 11.

No. 17. *Ficus ampelas* BURM.

A leaf-gall caused by a gall-mite: *Eriophyes raucus* NAL.

Tiny excrescences of the leafblade, average size about 1 mM. On the uppersurface tiny rounded swellings, on the undersurface more conical with an aperture in the top, which is covered with white hairlets. Common in Java.

Karakatau-island, young forest, January 19th 1922. N. 5968, and alt. about 300 M. January 20th 1922. N. 6013.

Sebesy-island, Cocos-jungle. April 22nd 1921. No. 5126. Secondary forest, April 24th 1921. No. 5234.

Literature: D. v. L. III, No. 107.

\* No. 18. *Ficus callosa* WLLD.

A leaf-gall caused by a thrips: *Gigantothrips elegans* ZIMM.

No true gall, only yellow spots on the surface of the leaf slightly incurvated and wrinkled. Also known from Java, but not yet described.

\* No. 14. *Eugenia* spec. 3.

A leaf-gall caused by a psyllida.

Same gall as the foregoing, but still bigger, average diameter about 3 mM. The excrescences on the upperside of the leaf-blade are semi-ballshaped and yellowish-green. See figure 6.

Sebesy-island, hilltop-forest, about 700 M. April 25th 1921. No. 5284.

No. 15. *Evodia* spec.

A leaf-gall caused by an acarid.

On the undersurface of the leaf are developed thick velvety hair-growths which may cover the whole surface of the leaf. They are mostly smaller and irregular; also on the leaf-stalks and young twigs they may be developed.



Besides the above named thrips also *Gynaikothrips gracilis* KARNY was found on the leaves.

Sebesy-island, Cocos-jungle, April 22nd 1921. No. 5095.

No. 19. *Ficus fistulosa* REINW.

A leaf-gall caused by a gall-mite.

Already described from Krakatau. Granular accumulations on the undersurface of the leaf. The galls of Krakatau are very small (average size of the irregular excrescences 1—2 mM.), those of Sebesy are much bigger (average size about 12 mM).

Krakatau-Island, about 800 M. April 26th 1919, No. 3690; alt 100 M. January 20th. 1922. N. 6008.

Sebesy-island, secondary forest, April 23th 1921. No. 5132.

Literature: D. v. L. Krakatau. No. 3. figure 4.

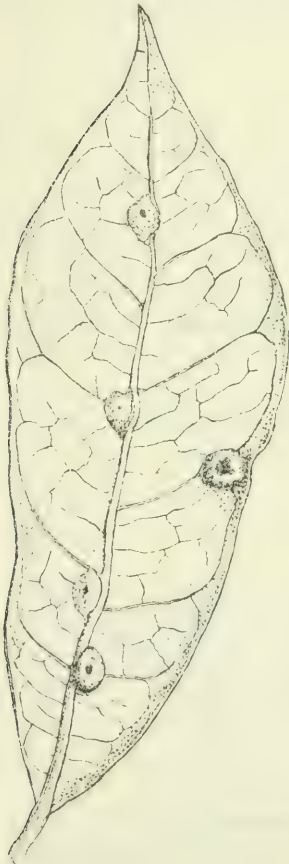


Fig. 8. A midge-gall on *Ficus gibbosa* BL.  $\times 1$ .

\* No. 20. *Ficus fistulosa* REINW.

A leaf-gall caused by a gall-midge.

On the bark of the twigs are developed irregular corky outgrowths which consist of a great number of small galls. Each gall has a larval chamber tenanted by a small gall-midge larva. See accompanying figure 7.

Average size 20—50 mM; depth of the gall layer about 3 mM.

Sebesy-island, forest, about 200 M, April 25th 1921. No. 5268.

\* No. 21. *Ficus gibbosa* BL.

A leaf-gall caused by a gall-midge (prob).

The galls are developed on both sides of the leaf-blade. On the uppersurface they are flat, semi-ballshaped excrescences of a dark-green colour, on the undersurface they are more irregular, also semi-ballshaped, or more or less conical. See figure 8. The galls having been abandoned by their inhabitants, I am not quite sure about the group to which they belong. Average size about  $2\frac{1}{4}$  mM.



Fig. 7. A midge-gall on *Ficus fistulosa* REINW.  $\times 1$ .

Verlaten-island, April 23th 1920, in the hills about 100 M, No. 4088;  
idem April 26th, No. 4165.

No. 22. **Ficus hispida** L.

A leaf-gall caused by a gall-mite.

The same kind of gall as described on *Ficus fistulosa* REINW. See No. 19. On the uppersurface there are flat concavities, of a pale-yellow-green colour, on the opposite place of the leaf irregular and granular accumulations. Average size 2—10 mM.

I have found this gall in Sumatra (erroneously described from *Ficus hirta* VAHL) and Malacca (Singapore, Kuala Lumpur, Penang). In Sumatra near Padang, Benkulen, and on the border of the Sunda-strait. On Sebesy the gall is fairly common and well developed, on Krakatau very rare; and in Java I have never met with it on this very common plant. Probably this gall-mite has been introduced to the islands from Sumatra.

Verlaten-island, April 26th 1920, in the hills about 100 M. No. 4160.

Sebesy-island, April 22nd 1921, Cocos-jungle, No. 5121 and secondary forest April 23th 1921, No. 5166.

Literature: D. v. L. Sumatra, No. 13.

No. 23. **Ficus pubinervis** BL.

A leaf-gall caused by a gall-midge.

The main-nerve is swollen into a fusiform gall which is more developed on the undersurface than on the uppersurface of the leaf. The leafblade itself is often atrophied and folded, especially when the whole nerve is developed into a gall. They are 10—20 mM. long and 3—5 mM. thick. Inside there are a good many ball-shaped larval chambers lying in a row.

Island of Krakatau, alt. 700 M. January 22nd. 1922. No. 6071.

Literature: D. v. L. Java VIII. No. 576.

\* No. 24. **Ficus pubinervis** BL.

A leaf-gall caused by a gall-mite.

Granular accumulations on the undersurface of the leaf, the same kind of gall described on *Ficus fistulosa* REINW. (See No. 19).

Island of Krakatau, about 700 M. January 22nd 1922. No. 6070.

No. 25. **Ficus ribes** REINW.

A bark-gall probably caused by a gall-midge.

Already described in our first paper on Krakatau-galls.

Krakatau, April 26th 1919, young forest in the hills, about 300 M. No. 3648.

Literature: D. v. L. Krakatau, No. 4 figure 5.

No. 26. **Fiscus subulata** BL.

An aerial-root-gall caused by a gall-midge.

The tops of the aerial-roots are swollen into ballshaped or more or less fusiform galls, about 4 mM. across. The surface is red-brown. Inside there is a tiny larval chamber.

Island of Krakatau, about 700 M. January 22nd 1922. No. 6059.

Literature: D. v. L. Java III. No. 111.

No. 27. **Fiscus variegata** REINW.

A leaf-gall caused by a psyllida.

A very common gall in Java and already described. Almost ball-shaped on the uppersurface of the leaf and of a yellow or lightgreen colour. On the undersurface only a slight thickening.

Sebesy, Cocos-jungle, April 22nd 1921. N. 5102.

Literature: D. v. L. Java. III. No. 112 (erroneously designated as a gall-midge gall).

No. 28. **Fluggea virosa** BAILL.

A leaf-gall caused by a gall-mite.

Tiny nodules on the undersurface (or uppersurface) of the leaves, mostly situated near the margin, on the opposite surface a small opening giving entrance to the gall-cavity. Average size  $\frac{3}{4}$  mM. Common in Java. Sebesy, near a native-village. April 23th 1921. No. 5129.

Literature: D. v. L. Java II. No. 43.

\* No. 29. **Glochidion philippicum** ROB.

A leaf-gall caused by a gall-midge.

Only developed on the undersurface of the leaf. They are tiny oval or grain-like swellings of the mid-rib of a dark green or brown colour. Inside there exists a small larval chamber. See accompanying figure. Average size 1 mM. broad,  $1\frac{1}{2}$  mM. long. Already found by me in Java but not yet described.

Sebesy, April 23th 1921, secondary forest No. 5152a.

\* No. 30. **Glochidion philippicum** ROB.

A leafgall caused by a gall-mite.

Only on the undersurface of the leaf there are developed mostly circular granular patches, which have a white colour. Average size 3–5 mM.

Sebesy, April 22nd 1921. No. 5075; idem April 23th 1921, secondary forest, N. 5152; idem April 24th 1921. N. 5220.

\* No. 31. **Glochidion philippicum** ROB.

A leaf-gall caused by a gall-mite.

This is almost the same gall as previously described on *Gl. rubrum* BL. from Java, and caused by *Phytoptochetus tristichus* NAL. Irregular



Fig. 9. A mite-gall on *Glochidion philippicum* ROB.  $\times 1$ .

blade by the concave side. On the transverse section they are circular, the longitudinal section showing oval. The uppersurface shows only a little oval depression. Internally it contains a long narrow larval cavity in the longitudinal axis of the gall.

A similar gall has been described on *Glochidion molle* BL.

Sebesy, January 25th 1922. No. 6137.

Literature: D. v. L. Java II. No. 50.

\* No. 33. *Hernandia peltata* MEISSN.

A leaf-stalk gall caused by a coccid.

On the leaf-stalk are developed semi-lens shaped excrescences. In the top of it exists a concavity tenanted by a yellow scale-larva. Average size 1 mM. broad 2 mM. long. See accompanying figure 10.

Sebesy, on the beach, April 23th 1921. No. 5131.

No. 34. *Hibiscus tiliaceus* L.

A leaf-gall caused by a gall-mite: *Eriophyes hibiscitilius* NAL.

A very common gall and often described, also from Krakatau.

nodules on the uppersurface of the leaf, on the undersurface only a tiny excrescence with an aperture on the summit. See figure 9.

Sebesy, Cocos-jungle, April 22nd 1921. No. 5087, idem January 25th 1922. N. 6136.

Literature: D. v. L. VI. No. 287.

No. 32. *Glochidion philippicum* ROB.

A leaf-gall caused by a moth.

These galls are situated on the undersurface of the leaves, being mostly directed in the longitudinal axis of the offsprings of the main-nerve. The gall is bean-shaped fastened to the leaf-



Fig. 10. A coccid-gall on *Hernandia peltata* MEISSN.  $\times 1$ .

Krakatau, April 24th 1919. No. 3505.

Verlaten-island, April 27th 1919. No. 3723b. April 26th 1921. No. 5331.

Sebesy, April 23th. 1921. No. 5130.

Literature: D. v. L. Krakatau. No. 5, Figure 6 and 7.

\* No. 35. **Hibiscus tiliaceus** L.

A leaf-gall caused by a gall-mite.

On the undersurface of the gall are developed irregular white hairgrowths. These erineae may cover the whole surface of the leaf-blade. On the uppersurface there exists only a darker coloration.

This gall is the same as previously described on *Hibiscus similis* BL. Krakatau-island, on the beach. January 19th 1922. No. 5971.

Literature: D. v. L. Java IV. No. 176.

No. 36. **Hibiscus tiliaceus** L.

A leaf-gall caused by a coccid

The leaves are wrinkled and dark green, the leaf-stalk remaining mostly very short so that bunches of galled leaves are formed. See figure 11. Probably identical with the coccid gall on the buds of the same plant, already described from Celebes.

Verlaten-island, April 27th 1920. No. 4180.

Literature: D. v. L. Celebes No. 34, figure 34.

No. 37. **Homalanthus populneus** GRAH.

A leaf-gall caused by a psyllida.

Already described in my former paper on Krakatau galls.

Krakatau, in the hills about 300 M. April 26th 1919. No. 3647.

Literature: D. v. L. Krakatau No. 6, figure 8.

\* No. 38. **Ipomoea denticulata** R. BR.

A leaf-gall caused by an aphid.

The attacked leaves are curved and wrinkled and smaller than the normal ones. Often accumulated in bunches.

Verlaten-island, April 24th 1920. No. 4119.



Fig. 11. A coccid-gall on *Hibiscus tiliaceus* L.  $\times 1$ .

No. 39. *Litsea Noronhae* BL.

A leaf-gall caused by a gall-mite.

On the uppersurface of the leaves are developed big flat vesicles of a dark-green colour. On the opposite surface the concavity is covered by a dense white or reddish erineum. This consists of long multicellular but unbranched hairlets growing criss cross. Already known and described from Java.

Sebesy, forest of the hill-top about 700 M. April 25th. 1921. No. 5282.

Literature: D. v. L. VIII. No. 617.

No. 40. *Macaranga Tanarius* L.

A leaf-gall caused by a gall-mite: *Eriophyes macarangae* NAL.

A common gall in these countries and described from Krakatau. In my former publication the name of the gall-former was given as *Eriophyes dactilonyx* NAL. NALEPA who has studied newly sent material found this mite to be an inquiline, *E. macarangae* being the true gall-former. This will be published in a paper by Professor NALEPA, *Eriophyidus aus Java*, IIIter Beitrag, which is to be printed in the periodical *Treubia*, Volume II.

Krakatau, April 24th 1919, No. 3508 and No. 3597.

Verlaten-island, October 6th 1919. No. 3833; idem casuary-forest, April 25th 1920 No. 4138; idem, grass-jungles in the hills about 150 M, April 26th No. 4162.

Sebesy, April 22nd. No. 5155, idem April 24th 1921, No. 5239.

Literature: D. v. L. Krakatau, No. 7, figure 9.

No. 41. *Macaranga Tanarius* L.

A leaf-gall caused by a gall-mite.

On the uppersurface of the leaf are developed cylindric or conical excrescences which are slightly pubescent. They are easily recognizable by their yellow colour. On the reverse exists a wide aperture giving entrance to the vesicle. The wall thereof is covered with a very thin erineum. Common in Java.

Krakatau, about 100 M. January 20th 1922. No. 6007.

Sebesy, border of the forest, April 24th 1921, No. 5231.

Literature: D. v. L. VIII. No. 450.

No. 42. *Mallotus ricinoides* M. ARG.

A leaf-gall caused by a gall-midge.

The same gall occurs also in Java and has been erroneously described under the name *Mallotus resinosa* MUELL. ARG. On the undersurface of the leaf are developed almost ball-shaped excrescences. The surface

of the gall is densely covered with white hairs, giving it an almost velvetlike appearance. Inside there is a small larval chamber, which is in open communication with the air by a short but wide canal. The wall of this canal is covered with long white hairs. On the uppersurface of the leaf only a slight swelling of a dark green colour betrays the presence of the gall. See accompanying figure 12.

Sebesy, in a grass-jungle, April 29th 1921, No. 5432.

Literature: D. v. L. VII. N. 460 figure 213,

No. 43. **Mangifera indica** L.

A leaf-gall caused by a gall-midge.

The leaves are strewn with tiny excrescences developed partly on the upper-, partly on the undersurface of the leaf, about  $\frac{3}{4}$  mM. high and 1 mM. broad. On the uppersurface of the leaf the gall is cylindrical or more or less truncated conical. On the undersurface the gall is rounded or conical. Inside there is a very small larval chamber. A common gall in these countries.

Sebesy, January 26th. 1922. No. 6161.

Literature: D. v. L. Java II. No. 66.

No. 44. **Mangifera indica** L.

A leaf-gall caused by a gall-midge.

A tiny excrescence only developed on the uppersurface of the leaf. They are cylindrical outgrowths, about 1 mM. high,  $\frac{3}{4}$  mM. across. The surface is glossy and dark brown. Inside there is a tiny larval cavity.

Sebesy, Native village, January 26th. 1922. No. 6164.

Literature: D. v. L. Java VIII. No. 462. fig. 214.



Fig. 12, A midge-gall on *Mallotus ricinoides* M. ARG.  $\times 1$ .

No. 45. **Melostoma malabathricum** L.

A leaf-gall formed by a gall-mite.

Described from Krakatau, a rolling of the margin of the leaf.

Krakatau, April 24th 1919. No. 3600.

Verlaten-island, April 22nd 1920. No. 4051.

Literature: D. v. L. Krakatau, No. 8, figure 10.

No. 46. **Melochia umbellata** STAPF.

A leaf-gall caused by a gall-mite: *Phytoptochetus orthiaspis* NAL.

Also known from Java. Small white patches of a granular appearance on the undersurface of the leaf. The erineum consists of clubshaped hairlets. The gall-former has been described by NALEPA, in a paper which is to be printed in the periodical Treubia, Volume II.

Verlaten-island, April 23th 1920. No. 4072.

Sebesy, January 26th 1922. No. 6158.

Literature: D. v. L. VIII. No. 630, figure 630.

No. 47. **Mikania scandens** WILLD.

A leaf-gall caused by a gall-mite: *Eriophyes mikaniae* NAL.

Tiny excrescences mostly attached to the undersurface of the leaf. They are irregular conical excrescences slightly contracted at their base. On the reverse there is only a small opening giving entrance to the larval chamber. Common in Java.

Krakatau, alt. 300 M. January 20th 1922. No. 6015.

Verlaten-island, April 24th 1920. No. 4112.

Literature: D. v. L. III, No. 127.

No. 48. **Nauclea purpurascens** KORTH.

A leaf-gall caused by a gall-midge.

Described from Krakatau. Excrescences of the mid-rib and stronger off-shoots covered with a corky layer.

Krakatau, April 25th 1919, No. 3599.

Literature: D. v. L. Krakatau, No. 9, figure 11.

No. 49. **Nauclea purpurascens** KORTH.

A leaf-gall caused by a gall-midge.

Described from Krakatau. Swellings of the mid-rib and the stronger off-shoots of the leaf.

Krakatau, about 500 M. April 26th 1919, No. 3663; idem alt. 300 M. January 22nd 1922. No. 6067.

Literature: D. v. L. Krakatau. No. 10. fig. 12.



No. 50. **Nauclea purpurascens** KORTH.

A leaf-gall caused by a gall-mite.

Described from Krakatau. Flat irregular vesicles on the upper surface of the leaf.

Krakatau, April 25th 1919. No. 3621.

Literature: D. v. L. Krakatau, No. 11, figure 13,

No. 51. **Nephrolepis biserrata** SCHOTT.

A leaf-gall formed by a gall-mite: *Eriophyes pauropus* NAL.

Common all over the tropics and already described from Krakatau.

Recently appeared a publication on these galls on different varieties of *Nephrolepis*.

Krakatau, April 24th 1919. No. 3573; idem April 25th No. 3598.

Verlaten-island, April 28th 1919. No. 3741.

Sebesy, April 23th 1921. No. 5171; April 27th. 1921. No. 5340.

Literature: D. v. L. Krakatau No. 12.

D. v. L. Ueber die vom *Eriophyes pauropus* NAL. an verschiedenen Arten von *Nephrolepis* gebildeten Gallen. *Annales du Jardin botanique de Buitenzorg*. Vol. XXXI. 1920. p. 83. Tafel XIV.

No. 52. **Nephrolepis hirsutula** PR.

A leaf-gall caused by a gall-mite: *Eriophyes pauropus* NAL.

Same gall as the foregoing.

Lang-island, September 29th 1896, BOERLAGE coll.

Krakatau, about 800 M. April 26th 1919. No. 3694; idem beach, October 6th 1919. No. 3823; idem January 24th 1922. No. 6133.

Verlaten-island, April 22th 1920, No. 4047.

Sebesy, Cocos-jungle April 22th 1921, No. 5103.

Literature: D. v. L. Krakatau, No. 13.

No. 53. **Oplismenus compositus** BEAUV.

A gall of the shoots caused by an aphid.

Described from Java. The internodia remain short and the leaves small so as to form a bunch, wherein the plant-lice live.

Verlaten-island, in a ravine, about 150 M, April 26th 1920. No. 4161.

Literature: D. v. L. Java II, No. 73, figure 40.

\* No. 54. **Paederia tomentosa** BL.

A leaf-gall caused by a gall-mite: *Eriophyes paederiae* NAL.

Common in Java on *P. foetida*; small conical excrescences mostly on the undersurface of the leaf. Average size  $\frac{3}{4}$  mM.

Sebesy, Cocos-jungle. April 25th 1921. No. 5247.

Literature: D. v. L. Java II, No. 74, figure 41.

No. 55. *Paederia tomentosa* BL.

A leaf-gall formed by a gall-gnat: *Clinodiplosis paederiae* KIEFF.

Common on Java on *Paederiae foetida* L. Both parts of the leaf are rolled upwards and covered with long white hairs. The wall of the roll is thick and hard.

Sebesy, in the forest about 400 M. April 25th 1921. No. 5325.

Literature: D. v. L. Java I, No. 17, figure 12.



Fig. 13. A midge-gall on *Pericampylus incanus* MIERS.  $\times 1$ .

No. 56. *Pericampylus incanus* MIERS.

A leaf-gall caused by a gall-midge.

The galls are developed on both sides of the leaf-blade. On the uppersurface they are semi-ballshaped, contracted at their base and with a diameter of  $1-1\frac{1}{2}$  mM. See figure 13. The surface is covered with a layer of short white hairlets. On the underside is developed a conical or rounded swelling densely covered with hairs and about 1 mM. in diameter. Also known from Java.

Sebesy, secondary forest, April 24ht 1921. No. 5233.

Literature: D. v. L. Java V. No. 237.

No. 57. *Piper Betle* L.

A leaf-gall caused by a thrips: *Gynaikothrips chavicae* (ZIMM.).

Rollings of both sides of the leafblade with an irregular and light green surface. Also found in Java. See figure 14.

Sebesy, young forest, April 23th. 1921. No. 5128.

Literature: D. v. L. Java VII. No. 474.

H. KARNY und W. und J. DOCTERS VAN LEEUWEN-REYNVAAN, Zweite Mitteilung über die javanischen Thysanopterocecidien und deren Bewohner. Zeitschr. f. Wiss. Insektenbiologie, Bd. X. 1914. p. 202.

No. 58. *Piper Betle* L.

A leaf-gall caused by a thrips: *Gynaikothrips chavicae* (ZIMM.).



Fig. 14. A thrips gall on *Piper Betle* L.  $\times 1$ .

The leaf along the mid-rib is swollen and folded so as to form a long canal. The colour of this curious gall is dark green. Very common in Java on cultivated plants.

Sebesy, native village, April 25th 1921. No. 5329.

Literature: D. v. L. Java II. No. 77. fig. 44.

**No. 59. *Piper retrofractum* VAHL.**

A leaf-gall formed by a thrips: *Gynaikothrips chavicae* (ZIMM.).

Common in Java. Twisting and rolling of both sides of the leaf-blade.

See figure 15.

Sebesy, Cocos-jungle, April 22th 1921. No. 5127. Idem, forest, about 100 M, April 28th 1921. No. 5397.

Literature: D. v. L. Java III. No. 133.



Fig. 15. A thrips gall on *Piper retrofractum* VAHL.  $\times 1$ .

**No. 60. *Piper sarmentosum* BL.**

A leaf-gall formed by a thrips: *Gynaikothrips pallipes* KARNY.

Almost the same gall as the foregoing, but rolling only slightly and accompanied with yellow colouring.

When older they are covered with white outgrowths which have been described by me from Java. In the galls occurred also *Gynaikothrips chavicae* (ZIMM.).

Sebesy, Cocos-jungle, April 22th No. 5085.

Literature: D. v. L. Java VII. No. 478.

D. v. L. Ueber die von *Gynaikothrips pallipes* KARNY on *Piper sarmentosum* BL. verursachten Blattgallen. Marcellia. Vol. XIII. 1914. p. 127.

**No. 61. *Pipturus incanus* MIERS.**

A leaf-gall caused by a gall-mite.

Common in Krakatau and already described of this island. Small white excrescences of the leaf-blade.

Krakatau, Th. VALETON coll. March 1st 1905; C. A. BACKER coll. April 1906; by me April 24th 1919. No. 3542; January 24th 1922, No. 6122; January 25th 1922. No. 6132.

Verlaten-island, C. A. BACKER coll. April 1906; by me April 27th 1919. No. 3924 b; idem April 22nd 1920. No. 4051.

Sebesy, Cocos-jungle, April 22nd 1921. No. 5086; idem April 28th 1922. No. 5381.

Literature: D. v. L. Krakatau No. 14. figure 14.

No. 62. *Pithecolobium umbellatum* BTH.

A leaf-gall caused by a gall-mite.

Already known from Krakatau. Small vesicles on the uppersurface of the leaf.

Krakatau, April 24th 1919. No. 3510; idem April 27th 1919. No. 3722a.

Verlaten-island, April 23th 1920. No. 4083.

Literature: D. v. L. Krakatau, No. 15. figure 15.

No. 63. *Pithecolobium umbellatum* BTH.

A leaf-gall caused by a gall-mite.

Already described from Krakatau; discoid swellings bulging on both sides of the leaf.

Krakatau, April 24th 1919. No. 3511.

Literature: D. v. L. Krakatau, No. 16. figure 16.

No. 64. *Pongamia pinnata* MERR.

A leaf-gall caused by a gall-mite.

On the upper, or on the undersurface of the leaf are developed cylindrical, mostly club-shaped outgrowths, 5–12 mM. long. The base is mostly narrow about  $\frac{3}{4}$  mM. across; the end is swollen into an irregular club, 3–5 mM. across.

On the other side of the leaf-blade there is only a small orifice giving entrance to the gall-cavity, inside the wall of the gall is covered with long white hairlets.

Sebesy, beach, January 25th 1922. No. 6134.

Literature: D. v. L. Java V. No. 239. figure 97.

No. 65. *Premna integrifolia* L.

A leaf-gall caused by a gall-mite.

Already described from Krakatau. Cudgel-shaped excrescences on the uppersurface of the leaf.

Krakatau, April 24th 1919. No. 3509.

Verlaten-island, April 23th 1920. No. 4087; idem April 26th 1920. No. 4143.

Sebesy, April 23th 1921. No. 5200, idem April 24th 1921. No. 5238.

Literature: D. v. L. Krakatau No. 17. figure 17.

No. 66. **Premna integrifolia** L.

A leaf-gall formed by a gall-mite: *Eriophyes premnae* NAL.

Common in Java. Very small nodules on the upperside of the leafblade, about  $\frac{3}{4}$  mM. in diameter. See figure 16. On the undersurface is only developed a tiny yellow spot with a narrow opening.

Krakatau, on the beach, January 19th 1922. No. 5969.

Sebesy, on the beach, April 23th 1921. No. 5198; idem January 25th 1922. No. 6138.

Literature: D. v. L. III. No. 137.

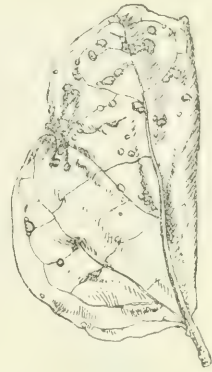


Fig. 16. A mite-gall on *Premna integrifolia* L.  $\times 1$ .

No. 67. **Ruellia repens** BURM.

A leaf-gall caused by a gall-mite: *Eriophyes stereo-thrix* NAL.

Common in Java and Celebes. Small elongated often purple-coloured vesicles on the uppersurface of the leaf. On the reverse the wall is covered with a dense white erineum. This erineum consists of multicellular branched hairlets.

Sebesy, arable land, April 28th 1921. No. 5376.

Literature: 1) D. v. L. Java II. No. 81. figure 45.

2) D. v. L. Celebes. No. 54. figure 54.

No. 68. **Terminalia Catappa** L.

A leaf-gall caused by a gall-mite.

Already described from Krakatau. Small nodules on the uppersurface of the leaf.

Krakatau, April 24th 1919. No. 3505.

Literature: D. v. L. Krakatau. No. 18. fig. 18.

No. 69. **Terminalia Catappa** L.

A leaf-gall caused by a gall-gnat.

Described from Krakatau, tiny cylindrical outgrowths mostly situated near the margin of the leaf.

Krakatau, April 24th 1919. No. 3506.

Sebesy, January 25th 1922. No. 6139.

Literature: D. v. L. Krakatau, No. 19. figure 19.

No. 70. **Thespesia populnea** SOLAND.

A leaf-gall caused by a psyllida.

Described from Krakatau. Rollings of the leaf margins of a yellow colour. Krakatau, January 19th 1922. No. 5972.

Verlaten-island, April 29th 1919. No. 3767, and April 23th 1920. No. 4086.

Sebesy, January 25th 1922. No. 6133, and January 26th 1922. No. 6169.

Literature: D. v. L. Krakatau. No. 20. figure 20.

No. 71. **Trichosanthes tricuspidata** LOUR.

A leaf-gall caused by a gall-gnat.

Described from Krakatau. The twigs on which this gall forms fusiform swellings were sterile and so it is not quite certain if they belong to the above mentioned plant or to *Coccinea cordifolia* COGN.

Krakatau, April 24th 1919. No. 3527.

Verlaten-island, April 28th 1919. No. 3756; idem April 25th 1920. No. 4122.

Sebesy, April 29th 1921. No. 5409.

Literature: D. v. L. Krakatau, No. 21. figure 21.



Fig. 17. An aphid-gall on *Uncaria sclerophylla* ROXB.  $\times 1$ .

\* No. 72. **Uncaria sclerophylla** ROXB. (prob).

A leaf-gall caused by an Aphida.

The leaves remain short and their surface is wrinkled and folded so as to form bunches. Mostly situated on the ends of the young twigs. See figure 17.

Verlaten-island in a ravine, about 100 M. April 26th 1920. No. 4147.

\* No. 73. **Uncaria sclerophylla** ROXB. (prob).

A leaf-gall caused by a gall-mite.

On the uppersurface there are developed dark green yellow flat vesicles, about 3 mM. in diameter. On the reverse these vesicles are covered with a thick felt-like erineum.

Verlaten-island in a ravine, about 100 M. April 26th 1920. No. 4156.

No. 74. **Vernonia cinerea** LESS.

The leaf is galled by a Psyllida.

Described from Krakatau. Shrivelled leaves.

Krakatau, April 24th 1919. No. 3528.

Literature: D. v. L. Krakatau No. 22. fig. 22.

\* No. 75. **Villebrunnea rubescens** BL.

A witches' broom formed by a gall-mite: *Eriophyes onychopus* NAL.

Very common in Java, but not yet described. The buds (often flower-) grow out into a real thick witches' broom, consisting of a great number of small branches, ending in small leaflets or in proliferated and rudimentary flowers. Often the whole gall has a reddish colour. They may become very great, up to 20 cm.

Krakatau alt. 150 M. January 20th 1922. No. 6010, and alt. 700 M. January 22nd 1922. No. 6065.

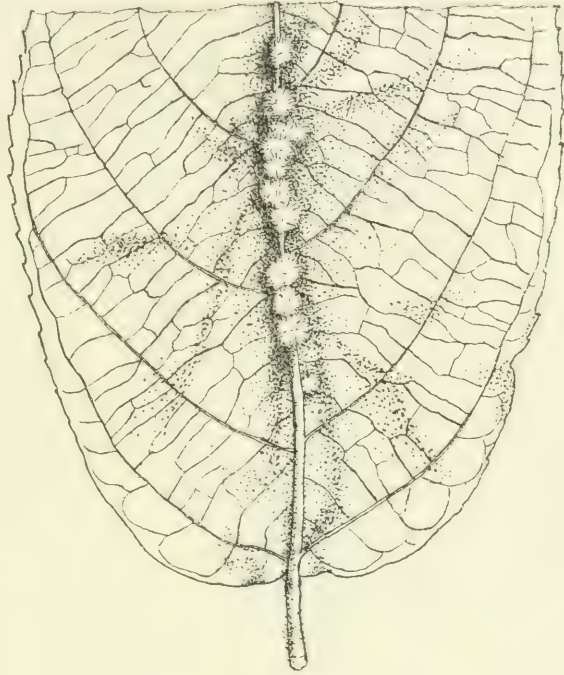
Sebesy, young forest, April 23th 1921. No. 5136, and forest in the hills, about 500 M. April 25th 1921. No. 5266.

\* No. 76. *Villebrunnea rubescens* BL.

A leaf-gall caused by a gall-gnat.

This gall has not yet been described by me, but it resembles a gall found in Java and described. These galls are ball-shaped excrescences of the mid-rib and the strong off-shoots covered with long, white hairs, average size without hairs about 2 mM. With hairs more than 4 mM. See accompanying figure 18.

Sebesy, forest in the hills, about 400 M. April 25th 1921. No. 5321.



Literature: D. v. L. Java VIII. No. 687. figure 687.

Fig. 18. A midge-gall on *Villebrunnea rubescens* BL.  $\times 1$ .

No. 77. *Vitex pubescens* VAHL.

A leaf-gall formed by a gall-mite: *Eriophyes cryptotrichus* NAL.

Common on Java and other tropical malayan countries. Small vesicles on the uppersurface of the leaf, with an erineum on the reverse.

Sebesy, young forest, April 23th 1921. No. 5179.

Literature: D. v. L. VI. No. 342. figure 153.

\* No. 78. *Vitex Sebesiae* H. J. LAM.

A leaf-gall caused by a gall-mite.

This plant is new to science. The description exists in manuscript by Dr. H. J. LAM. Small mostly circular or oval patches of a granular appearance on the undersurface of the leaves. On the uppersurface is only developed a slight concavity.

Sebesy, April 28th 1921. No. 5355.

\* No. 79. *Vitis trifolia* L.

A twig-gall caused by a gall-midge.

A new gall. It is a slight fusiform swelling of the young ends of the



Fig. 19. A midge-gall on *Vitis trifolia* L.  $\times 1$ .

shoots. The internodes remain shorter and the leaves remain smaller and accumulated. See the figure 19.

Sebesy, in a marsh, April 24th 1921. No. 5207.

No. 80. *Wedelia biflora* D. C.

A leaf-gall formed by a gall-mite.

Common on the beach of tropical countries. Small excrescences among the ramifications of the veins; and already described from Krakatau.

Krakatau, April 24th 1919. No. 3543.

Verlaten-island, April 22nd 1920. No. 4029.

Sebesy, April 27th 1921. No. 5336.

Literature: D. v. L. Krakatau. No. 23. figure 23.

No. 81. *Wedelia biflora* D. C.

A leaf-gall caused by an aphid: *Aphis malvae* KOCH.

Common on tropical beaches, and already described from Krakatau. Bunches of poorly developed, shrivelled and curved leaves.

Verlaten-island, April 27th 1919. No. 3727b; idem October 6th 1919. No. 3832; idem April 24th 1920. No. 4113.

Sebesy, April 24th 1921. No. 5226.

\* No. 82. *Wedelia biflora* D. C.

A bud-gall caused by a dipteron.

This gall is known to me from Java, but not yet described. The bunch in the axilla of the leaves develop into ball-shaped or fusiform swellings of a dark green colour. Inside there is a wide larval chamber tenanted by the white larva of a dipteron. The growing point may develop into a short young twig. See figure 20.

Verlaten-island, April 26th 1921. No. 5332.

Sebesy, April 24th 1921. No. 5229.



Fig. 20. A dipteroecidium on *Wedelia biflora* DC.  $\times 1$ .



No.	Galls of Krakatau and Verlaten Eiland	Gall-former	Galls of Sebesy	Gall-former
1			<i>Alonia scholaris</i> R. Br.	psyll.
2			<i>Antidesma Bunius</i> Spr.	cec.
3			<i>Avicennia marina</i> (Forsk.) Vierh.	"
4			<i>Avicennia marina</i> (Forsk.) Vierh.	"
5			<i>Bridelia tomentosa</i> Bl.	"
6			<i>Calanthe Zollingeri</i> Rehb. f.	"
7	<i>Calophyllum Inophyllum</i> L.	lep.		
8	<i>Cassytha filiformis</i> L.	?		
9	<i>Clerodendron inerme</i> Gaertn.	cec.		
10			<i>Conocephalus suaveolens</i> Bl.	thr.
11	<i>Derris heterophylla</i> Barke	"		
12			<i>Eugenia</i> spec.	psyll.
13			<i>Eugenia</i> spec.	"
14			<i>Eugenia</i> spec.	"
15			<i>Evodia</i> spec.	acar.
16			<i>Ficus ampelas</i> Burm.	psyll.
17	<i>Ficus ampelas</i> Burm.	acar.	" "	acar.
18			" <i>callosa</i> Willd.	thr.
19	<i>Ficus fistulosa</i> Reinw.	"	" <i>fistulosa</i> Reinw.	acar.
20			" <i>fistulosa</i> Reinw.	cec.
21	<i>Ficus gibbosa</i> Bl.	cec.		
22	" <i>hispida</i> L.	acar.	" <i>hispida</i> L.	acar.
23	" <i>pubinervis</i> Bl.	cec.		
24	" " "	acar.		
25	" <i>ribes</i> Reinw.	cec.		
26	" <i>subulata</i> Bl.	"		
27			<i>Ficus variegata</i> Reinw.	psyll.
28			<i>Flueggea virosa</i> Baill.	acar.
29			<i>Glochidion philippicum</i> Rob.	cec.
30			" "	acar.
31			" "	"
32			" "	lepid.
33			<i>Hernandia peltata</i> Meissn.	cocc.
34	<i>Hibiscus tiliaceus</i> L.	acar.	<i>Hibiscus tiliaceus</i> L.	acar.
35	" " "	"		
36	" " "	cocc.		
37	<i>Homalanthus populneus</i> Grah.	psyll.		
38	<i>Ipomoea denticulata</i> R. Br.	aph.		
39			<i>Litsea Noronhae</i> Bl.	acar.
40	<i>Macaranga Tanarius</i> L.	acar.	<i>Macaranga Tanarius</i> L.	"
41	" " "	"	" " "	"
42			<i>Mallotus ricinoides</i> M. Arg.	cec.
43			<i>Mangifera indica</i> L.	"
44			" " "	"
45	<i>Melastoma malabathricum</i> L.	acar.		
46	<i>Melochia umbellata</i> Stapf.	"	<i>Melochia umbellata</i> Stapf.	acar.
47	<i>Mikania scandens</i> Willd.	"		
48	<i>Nauclea purpurascens</i> Korth.	cec.		

No.	Galls of Krakatau and Verlaten Eiland	Gall-former	Galls of Sebesy	Gall-former
49	<i>Nauclea purpurascens</i> Korth.	cec.		
50	" " "	acar.		
51	<i>Nephrolepis biserrata</i> Schott.	"	<i>Nephrolepis biserrata</i> Schott.	acar.
52	" <i>hirsutula</i> Pr.	"	" <i>hirsutula</i> Pr.	"
53	<i>Optismenus compositus</i> Beauv.	aph.		
54			<i>Paederia tomentosa</i> Bl.	"
55			" " "	cec.
56			<i>Perycampylus incanus</i> Miers.	"
57			<i>Piper</i> Beetle Bl.	thr.
58			" " "	"
59			" <i>retrofractum</i> Vahl.	"
60			" <i>sarmentosum</i> Bl.	"
61	<i>Pipturus incanus</i> Miers.	acar.	<i>Pipturus incanus</i> Miers.	acar.
62	<i>Pithecolobium umbellatum</i> Bth.	"		
63	" "	"		
64			<i>Pongamia pinnata</i> Merr.	acar.
65	<i>Premna integrifolia</i> L.	"	<i>Premna integrifolia</i> L.	"
66	" " "	"	" " "	"
67			<i>Ruellia repens</i> Burm.	"
68	<i>Terminalia Catappa</i> L.	"		
69	" " "	cec.	<i>Terminalia Catappa</i> L.	cec.
70	<i>Thespesia populnea</i> Soland.	psyll.	<i>Thespesia populnea</i> Soland.	psyll.
71	<i>Trichosanthes tricuspidata</i> Lour.	cec.	<i>Trichosanthes tricuspidata</i> Lour.	cec.
72	<i>Uncaria sclerophylla</i> Roxb.	aph.		
73	" " "	acar.		
74	<i>Vernonia cinerea</i> Less.	psyll.		
75	<i>Villebrunea rubescens</i> Bl.	acar.	<i>Villebrunea rubescens</i> Bl.	acar.
76			" "	cec.
77			<i>Vitex pubescens</i> Vahl.	acar.
78			" <i>Sebesiae</i> H. J. Lam.	"
79			<i>Vitis trifolia</i> L.	cec.
80	<i>Wedelia biflora</i> D. C.	acar.	<i>Wedelia biflora</i> D. C.	acar.
81	" " " "	aph.	" " " "	aph.
82	" " " "	dipt.	" " " "	dipt.

# ZUR IDENTITÄT DES XANTHOSTERINS MIT DEM LUPEOL.

VON

A. J. ULTÉE.

Bei der Durchsicht einer Abhandlung von DIETERLE <sup>1)</sup>: „Xanthosterin, ein kristallinischer Körper aus der Rinde von *Xanthoxylum Budrunga* D. C.“ fiel mir die Uebereinstimmung des darin beschriebenen Sterins mit Lupeol auf, das ich bei meinen Untersuchungen der Kautschuk-Harze wiederholt in Händen hatte.

Lupeol, das zuerst aus den Samenhäutchen von Lupinensamen dargestellt worden war <sup>2)</sup>, wurde später bei mehreren Pflanzenfamilien aufgefunden, u. zw. bei den Sapotaceae <sup>3)</sup>, den Linaceae <sup>4)</sup>, den Apocynaceae <sup>5)</sup>, den Compositae <sup>6)</sup> und den Moraceae <sup>7)</sup>, und ist somit in der Natur augenscheinlich sehr verbreitet.

Für Lupeol fand COHEN <sup>8)</sup> den Schmelzpunkt von 211°, corr. 215°; für Xanthosterin gibt DIETERLE 213—214° an, für Lupeolbenzoat ermittelte COHEN als Schmelzpunkt 265—266°, corr. 273—274°, Xanthosterinbenzoat soll bei 264—265° schmelzen. Allerdings fand DIETERLE bei zwei Elementaranalysen nur Kohlenstoffgehalte von 83,39 und 83,24 <sup>0</sup>/<sub>100</sub>, während Lupeol 84,4 <sup>0</sup>/<sub>100</sub> dieses Elements enthält, und ergeben auch die Derivate von Xanthosterin zu wenig im Vergleich mit den entsprechenden Lupeol-Verbindungen, doch haben mehrere Untersucher bei der Prüfung von Sterinen, die schwer vollkommen rein zu erhalten und äusserst schwierig zu analysieren sind, zu niedrige Resultate bekommen.

Es erschien mir daher wünschenswert, das sogenannte Xanthosterin darzustellen und mit Lupeol zu vergleichen.

In den Wäldern südlich von Djember (Ostjava) fand ich einige junge Exemplare von *Xanthoxylum Budrunga*, eines Baumes, der durch seinen stark bedornten Stamm und die gefiederten Blätter auffällt. Zur Sicherheit wandte ich mich noch an Herrn Dr. SMITH, den Direktor des Herbariums am botanischen Garten (Buitenzorg), der so freundlich war, mir mitzuteilen,

<sup>1)</sup> Arch. Pharm. 257, 260; (1919).

<sup>2)</sup> LIEKIERNIK, Ber. Chem. Ges. 24, 187; (1891).

<sup>3)</sup> VAN ROMBURGH, ibidem, 37, 3440; (1904).

<sup>4)</sup> SACK & TOLLENS, ibidem, 37, 4105; (1904).

<sup>5)</sup> COHEN, Arch. Pharm. 245, 236; (1907).

<sup>6)</sup> COHEN, ibidem, 246, 520; (1908).

<sup>7)</sup> ULTÉE, Chem. Weekblad, 9, 773; (1912). Pharm. Weekblad 52, 1097; (1915), Ber. Chem. Ges. 54, 784; (1921).

<sup>8)</sup> Rec. Trav. Chim. Pays Bas, 28, 368; (1909).

dass das von mir gesammelte Material tatsächlich von *Xanthoxylum Budrunga* stammte; dieser Baum heisst jedoch jetzt *Fagara Rhetsa* ROXB.

Aus 4,5 kg des lufttrockenen Bastes gewann ich ungefähr 10 g sogenanntes Xanthosterin nach der Vorschrift von DIETERLE, der aus 5 kg Bast 12 g dieses Körpers erhielt. Ein Vergleich mit Lupeol ergab tatsächlich dessen Identität mit Xanthosterin. Es ergab sich für Xanthosterin  $S = 216^{\circ}$  corr., zusammen mit Lupeol (aus „Bresk“), das bei  $215^{\circ}$  corr. schmolz, wurde  $215-216^{\circ}$  abgelesen.

Die verschiedenen von DIETERLE für Xanthosterin angegebenen Farbenreaktionen gelten unter denselben Umständen genau ebenso für Lupeol. Es muss noch erwähnt werden, dass DIETERLE sein Xanthosterin nicht mit Lupeol verglich, wohl aber mit Alstol, das jedoch nach COHEN<sup>1)</sup> aus einem Lupeol-hältigen Gemenge besteht.

Mit Hilfe von Pyridin und Benzoylchlorid wurde das sogenannte Xanthosterin, in Benzol gelöst, benzoiliert. Das Reaktionsprodukt wurde mit verdünnter Schwefelsäure und verdünntem Alkohol extrahiert und einige Male aus Aceton umkristallisiert. Das so gewonnene Benzoat schmilzt bei  $272^{\circ}$  corr., zusammen mit Lupeolbenzoat,  $S = 272$  corr., wurde derselbe Schmelzpunkt gefunden.

Durch Acetylieren des Xanthosterins mit Essigsäureanhydrid und essigsauerm Natrium entstand ein Acetat,  $S = 218$  corr., identisch mit Lupeolacetat.

Ferner wurde noch von diesem sogenannten Xanthosterin das spezifische Drehungsvermögen bestimmt; bei  $25^{\circ}$  ergab sich:  $[\alpha]_D = +27.8^{\circ}$  ( $c = 2.7512$ ,  $l = 2$  dm,  $n_D = +1.53^{\circ}$ ) während COHEN für Lupeol  $27.2^{\circ}$  angibt.

Es kann daher keinem Zweifel mehr unterliegen, dass Xanthosterin mit Lupeol identisch ist.

Erwähnen wir schliesslich noch, dass diese Untersuchung beinahe abgeschlossen war, als mir eine Publikation von GOODSON<sup>2)</sup> in die Hand kam, in der die Resultate einer Untersuchung am Bast von *Xanthoxylum macrophyllum* OLIVER mitgeteilt wurden. *In dieser Rutacee wurde ebenfalls Lupeol nachgewiesen.* GOODSON weist ferner auch darauf hin, dass die von DIETERLE angegebenen Schmelzpunkte von Xanthosterin und dessen Derivaten mit denen von Lupeol auffallend übereinstimmen.

Da nunmehr in zwei *Xanthoxylum*-Species Lupeol nachgewiesen ist, kann kein Zweifel mehr darüber bestehen, dass auch das „neue“ Phytoosterin, das durch OESTLING<sup>3)</sup> aus der Wurzel von *Fagara xanthoxyloides* LAM. (*Xanthoxylum senegalense* D. C.) isoliert wurde, mit Lupeol identisch ist. Dieser Untersucher gab für das sogenannte neue Sterin den Schmelzpunkt  $214^{\circ}$  an, für das Benzoat  $265-267^{\circ}$ , welche Zahlen auffallend mit denen für Lupeol übereinstimmen.

<sup>1)</sup> Arch. Pharm. 245, 236; (1907).

<sup>2)</sup> Biochemical Journal 15, 123; (1921).

<sup>3)</sup> Ref. Chem. Zentr. Bl. 85, Band II, 941; (1914).

## TWO NEW MALAYAN FERN GENERA.

by

Capt. C. R. W. K. VAN ALDERWERELT VAN ROSENBURGH.

With plates 14 and 15.

### PARASORUS V. A. V. R.

Sori longe lineares, submarginales, apices venarum venularumque conjungentes; indusium *Schizolomae* more intramarginale, exterius liberum.

Rhizoma repens, squamosum. Frondes cum rhizomate articulatae.

The single species, up till now found, has the mode of growth and the aspect of a simple-leaved *Davallia* of the *Scyphularia* group, with which it is undoubtedly related.

#### **Parasorus undulatus** V. A. V. R.

Rhizoma repens, potius scandens, usque 2 m. longum vel longius, copiose ramosum, ramis teretibus, funiformibus, 2 mm. crassis, in sicco brunneis et longitudinaliter rugulosis, leviter cretaceis; squamae atrae vel atro-brunneae, parte basali rotundae vel oblongae, peltatae, appressae, decidue pallideque scarioso-marginatae, parte apicali abrupte contractae, longe filiformes, horizontaliter recurvatae, integerrimae. Stipites remoti, 2-4 cm. longi, subsemiteretes, in sicco supra sulcati, parce decidueque squamulosi, dimidia parte superiore angustissime cuneato-alati. Frondes coriariae, proportione crassae, glabrae, plerumque transverse undulatae, lineares, rectae vel falcatae, 10-18 cm. longae, 1-2 cm. latae, basi truncato-cuneatae vel rotundatae, in alam stipitis abrupte transientes, apice sensim angustatae, obtusiusculae ad acutae, margine sterili obsolete crenulato, fertili integerrimo; costa supra prominens, subtus depressa; basin versus parce decidueque squamulosa; venae copiosae, subhorizontales, furcatae, superiores simplices, in partibus sterilibus frondium liberae. Sori plantae adultae continui, plantae juvenilis interrupti, partes basales angustatas et apicales frondium non occupantes; indusium coriaceum, angustum, margine marginem frondis attingente.

Squamules of stipe and costa like those of the rhizome but smaller.

Ternate Island: Foramadiali, in forest, alt. 600 m. (V. M. A. BEGUIN No. 1321, 14 January 1921).

## GRAMMATOPTERIS, v. A. v. R.

Sori longi, lineares, 1 utrinque, costae paralleli, parenchymate costali dorsali producto (incrassato et dilatato) separati. Indusium nullum.

Rhizoma repens vel scandens. Frondes cum rhizomate articulatae, dimorphae, simplices, integrae, fertiles valde contractae; venae primariae adsunt, ceterae anastomosantes.

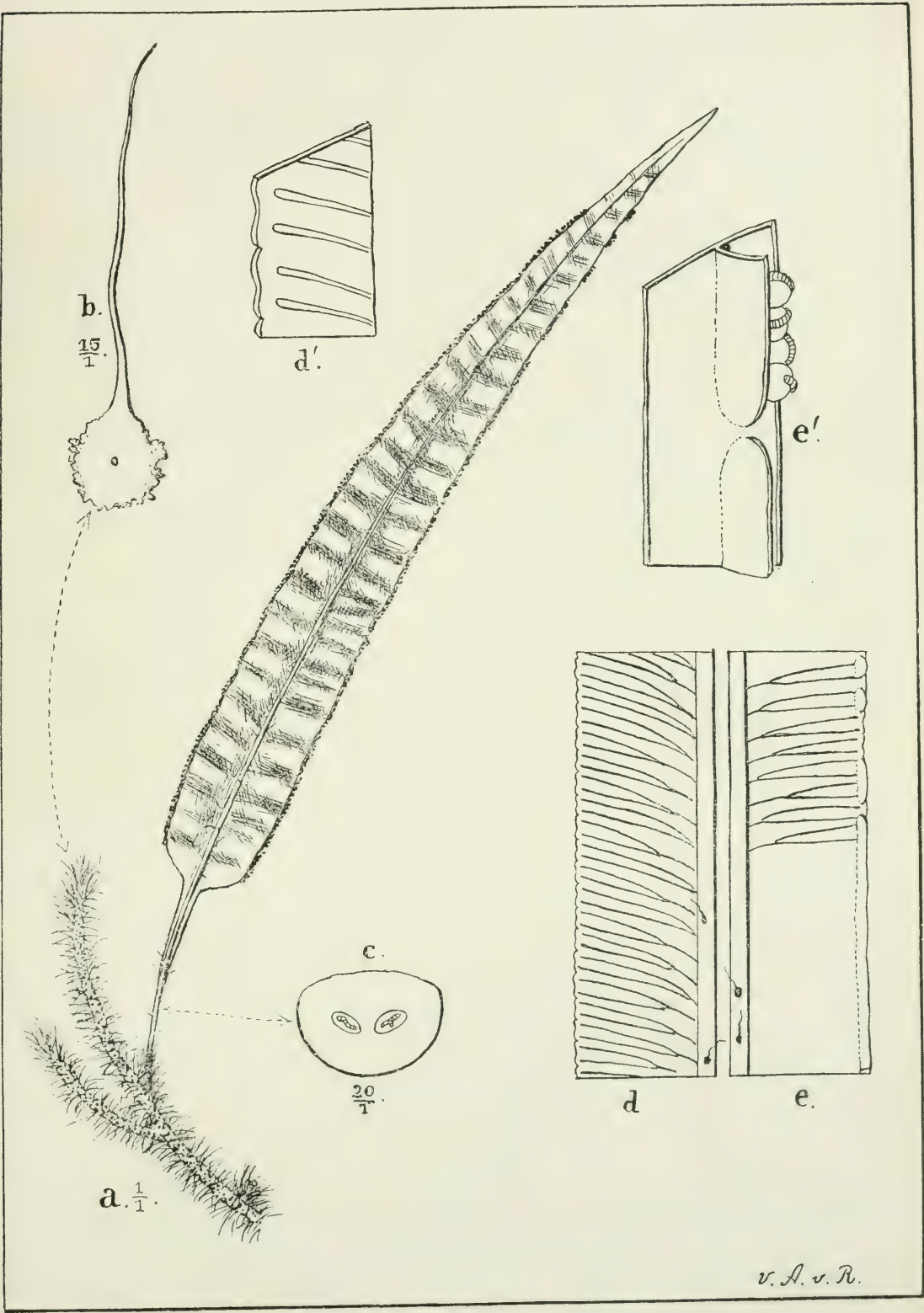
**Grammatopteris Brooksii**, v. A. v. R. — *Drymoglossum Brooksii*, v. A. v. R., in Bull. Btz. XXVIII (1918), 21.

Forma typica; this bulletin, tab. 15, fig. 1 *a—b*. The description of this has been taken from a small, probably young, though nearly fructiferous plant having the stipes provided with a single central, T-shaped vascular bundle, the barren fronds with the margin narrowly recurved, somewhat cartilagineous, with the costa flattened above, prominent beneath, with 12—15 prominent main veins on a side, united by transversal veins so as to form  $\pm 5$  rows of subquadrangular primary areolae on each side of the costa, divided into many irregular smaller areolae with included free veinlets, and the very young fertile frond with the sori deeply immersed in submarginal grooves, separated by the thickened and much dilated costal parenchyma, as in *Scleroglossum* (when examined in a saturated chloral-hydrate solution). — Sumatra.

Var. **Begunii**; this bulletin, tab. 15, fig. 2 *a—c*: Quam forma typica major. Rhizoma usque ad  $\pm 4$  m. alte scandens, lignosum, squamis rufis. Stipites usque  $\pm 10$  cm. longi, fasciculis vasorum 4, subteretibus muniti. Frondes steriles subrigidae, lanceolato-ovatae vel -oblongae,  $27\frac{1}{2}$ —30 cm. longae, 7—8 cm. latae, infra medium latissimae, basi rotundato-cuneatae, minus abrupte subdecurrentibus, margine non vel vix repandae, leviter distinctius cartilagineo-incrassatae, apice longiuscule acuminatae; venae primariae 30—35 utrinque; areolae primariae utrinque  $\pm 7$ -seriatae. Frondes fertiles  $\pm 45$  cm. longae,  $\pm 3$ —4 mm. latae, margine in sicco valde incurvatae. Sori partem marginalem incrassatam contingentes, parenchymate costali producto (incrassato et valde dilatato) separati sed non in sulcis immerci. — Ternate: Foradiahi, in forest, alt.  $\pm 650$  m. (V. M. A. BEGUIN No. 1095, 12 November 1920).

**Grammatopteris pseudodrymoglossum**, v. A. v. R.

Rhizoma repens, in juventute dense squamosum, postremo glabrescens, decidue cretaceum, in sicco nigrum; squamae lanceolato-subulatae, in juventute ferrugineae, postremo nigro-brunneae. Stipites remoti, 1—6 cm. longi, frondium sterilium breviores, frondium fertile longiores, fasciculis vasorum 4, filiformibus muniti, in juventute postice glandulis minutissimis, oblongis, resinosis, nigro-brunneis, caducis muniti, ceterum glabri. Frondes steriles subrigide coriaceae, supra glabrae, subtus in juventute stipitis more resinoso-

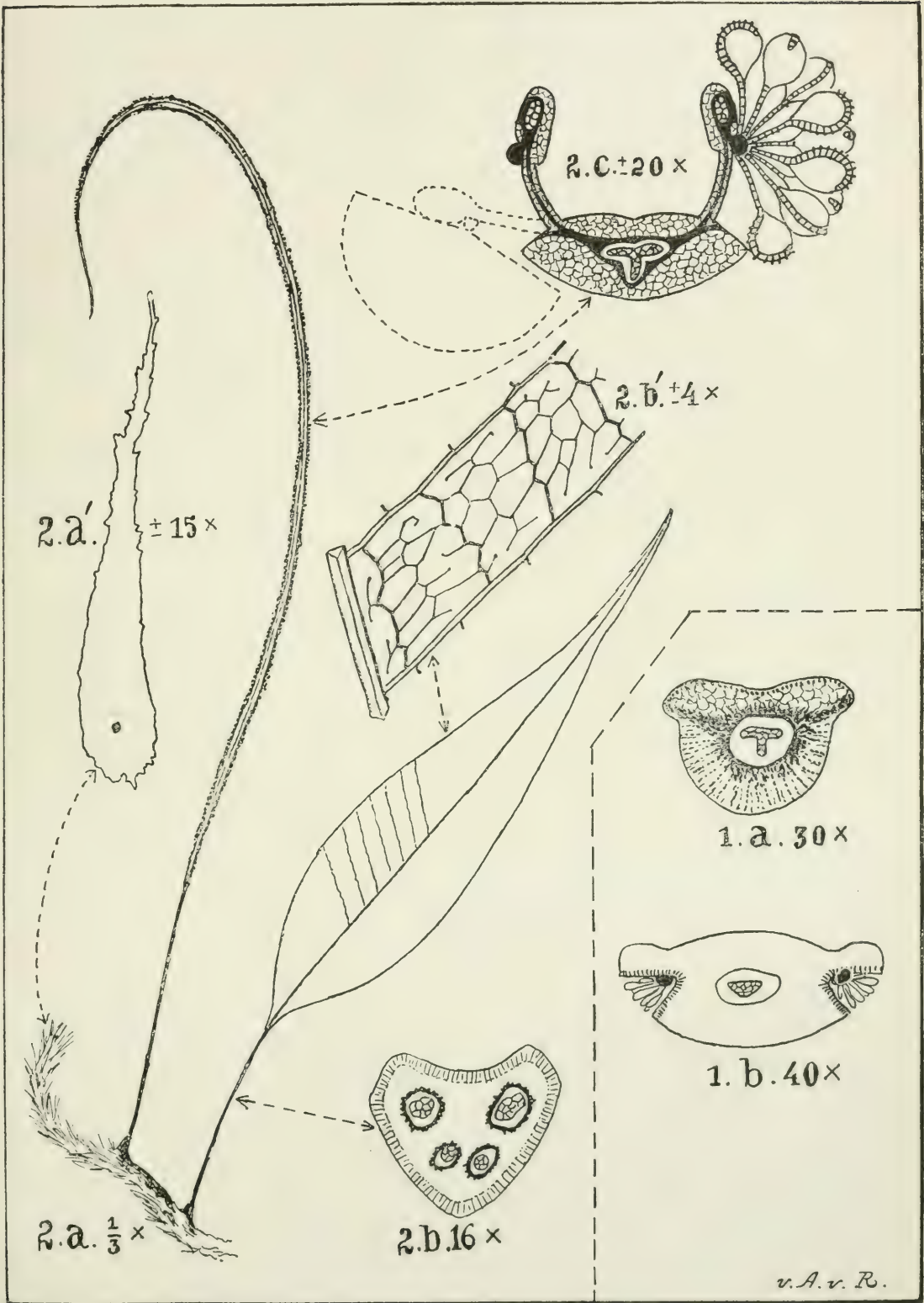


v. A. v. R.

*Parasorus undulatus* v. A. v. R.







*Grammatopteris Brooksii* v. A. v. R.

Fig. 1 (a-b). Forma typica. Transversal sections of stipe and very young fertile frond.



glandulosae, mox glabrae, lineari-oblongae,  $2\frac{1}{2}$ — $7\frac{1}{2}$  cm. longae,  $\frac{1}{2}$ —2 cm. latae, apice obtusae vel rotundatae, margine incrassatae revolutaeque, basi cuneatae; costa subtus valde prominens; venae primariae distinctae; areolae absconditae. Frondes fertiles lineares, 4—6 cm. longae,  $\pm$  2 mm. latae, apice rotundatae, basi acutissime lineari-cuneatae, ceterum antice in sicco plus minusve complicato-conduplicatae. Sori longi, mediani, continui vel parce interrupti.

This and *Pleopeltis costulata* v. A. v. R. form the connecting links between *Grammatopteris* and *Pleopeltis* § *Pleuridium*.

New Guinea: near Prauwen Bivak, epiphytical in forest, alt. 210 m. (H. J. LAM No. 826, 19 August 1920).

## NEW OR NOTEWORTHY MALAYAN ARACEAE 3

by

Capt. C. R. W. K. VAN ALDERWERELT VAN ROSENBURGH.

With plate 16.

Wherever the contrary has not been mentioned the following diagnoses were made after dried material and descriptions of the colours were taken from the field notes of the collectors.

The diagnoses of the new species from New Guinea, as far as collected by Dr. H. J. LAM, are provisory only; more detailed descriptions will be published elsewhere.

**Aglaonema minus**, HK. F., Flor. Brit. I., VI, 530; ENGL., in Pflzrch., LXIV (IV, 23 *Dc*), 32.

A specimen from Singapore. (Swamp, Garden Road, coll. . . .), determined by RIDLEY, is distinguished in having the spadix clavate, on a stalk hardly  $\frac{1}{2}$  cm. long.

A plant from Borneo (Soengei Bloe-oe, NIEUWENHUIS No. 673); referred by ENGLER to this species but previously called by him *A. Nieuwenhuisii*, is undoubtedly *not* this species; it is distinguished in having the petioles longer, much longer-sheathed, even to more than half its length, and the lamina proportionally shorter and broader with a broadly rotundate-cuneate or rounded base, a suddenly shortly acuminate apex and more numerous primary veins.

**Aglaonema Nieuwenhuisii**, ENGL., MS. in Herb. Bog. — *A. minus*, HK. F., ENGL., Pflzrch., LXIV (IV, 23 *Dc*), 32, p. p.

Caudiculus internodiis  $\pm \frac{1}{2}$  cm. longis, apice foliatus. Foliorum petiolus 5–6 cm. longus, vagina  $2\frac{1}{2}$ – $3\frac{1}{2}$  cm. longa instructus; lamina in sicco tenuis, late oblonga, 9–12  $\times$   $4\frac{1}{2}$ –6 cm., medio latissima, basi late rotundato-cuneata vel rotundata, apice abrupte acuminate; venae primariae  $\pm 9$  utrinque, conspicue arcuato-ascendentes, supra  $\pm$  insculptae, subtus prominentes. Pedunculus fructifer  $\pm 7$  cm. longus. Spatha . . . Spadix . . .

The berries of the specimen on hand are rather oblong, but it is not to be seen whether they are ripe or not.

Borneo: Soengei Bloe-oe. (NIEUWENHUIS No. 673).

**Aglaonema novoguineensis**, ENGL., in Pflzrch., LXIV (IV, 23 *Dc*) 13, fig. 3.

The specimen cultivated in the Buitenzorg Gardens, determined by ENGLER, is distinguished in having the petiole 25–30 cm. long, sheathing  $\frac{1}{2}$ – $\frac{3}{4}$  its length, terete beyond the sheath, gradually canaliculate towards the apex; lamina oblong, with a tendency to become subovate to subobovate, 30–37  $\times$  12–16 cm., the base and apex blunt to very broadly rounded.

A plant from Ternate (Castela, open place in village, alt. 2 m., V. M. A. BEGUIN No. 1175, 23 November 1920), which may be this species, has the petiole longer-sheathing, the spathe pale-green, the spadix when young pale-yellow, afterwards yellow, with the apex reaching nearly the apex of the spathe.

**Aglaonema oblongifolium** (RXB.), KNTH, Enum., III, 55; ENGL., in Pflzrch., LXIV (IV, 23 *Da*), 13, fig. 4.— *A. nitidum*, KNTH, l.c., 76.— *Calla oblongifolia*, RXB., Flor. Ind., III, 516.

This species is unknown to me. Plants up till now cultivated in the Buitenzorg Gardens under the names of *A. oblongifolium* and *A. nitidum*, determined by ENGLER, are distinguished as follows: Leaves with the petiole 10–15 cm. long, terete beyond the sheath, somewhat canaliculate towards the apex (not narrowly grooved, ENGL., l.c., fig. 4 *c-c'*), the sheath 7–12 cm. long, with the margin finally scariose; lamina when fresh coriaceous, to 37 $\frac{1}{2}$   $\times$  12 $\frac{1}{2}$  cm., slightly unequal-sided, the base more or less rotundate-cuneate, rather suddenly, shortly decurrent, the apex acuminate, with a rather long, cylindrical, fragile apiculum, veins when dry prominent on both sides but more distinctly on the lower side. Peduncle shorter, pale-green. Spathe when young convolute, 4–7 $\frac{1}{2}$  cm. long, 1–2 cm. diam., when fully developed boat-shaped,  $\pm$  2 $\frac{1}{2}$  cm. broad, pale-yellowish-green, nearly white. Spadix nearly as long as the spathe or a little longer, on a stalk to  $\frac{1}{2}$  cm. long; feminine inflorescence  $\pm$   $\frac{3}{4}$ –1 cm. long, oblique; ovaries shortly ovate, whitish; stigma broad, slightly impressed in the middle; masculine inflorescence  $\pm$  4–5 times as long as the feminine, with the 1–2 lower rows of stamens sterile, nearly resembling in shape the fertile ones which are pale-ochraceous or pale-rosy when very young. For the rest like the diagnosis given by ENGLER, except that one of the specimens, fruiting March 1921, has the berries white whilst ENGLER says „Baccæ . . . , . . . purpureæ”.

**Aglaonema marantifolium**, BL., in Rumph, I, 153, tab. LXVI; ENGL., in Pflzrch., LXIV (IV, 23 *Dc*), 27, fig. 10 A–F.

In the description of this species ENGLER says „lamina supra atroviridis, ad nervorum latera pallide nebuloso-maculata”, but in his key he writes „Foliorum lamina immaculata” and in his figure there are no spots to be seen. BLUME, in his original diagnosis, does not at all speak of spots and

in his beautiful plate the upper surface of the leaf is bright-green without any trace of a pale, nebulous spot.

A fruiting plant from Luzon (Mt. Mariveles, R. MEYER, Bur. of Sci. No. 2586), received under the name of this species which is reduced by MERRILL to *A. oblongifolium* KNTH (Interpr. Rumph. Herb. Amboin., 129), but which does not agree with the specimens mentioned hereafter under *A. simplex* BL., has the leaves with the lamina smaller than given in ENGLER's diagnosis  $10-15 \times 3\frac{1}{2}-6$  cm.

***Aglaonema obovatum*, V. A. V. R.**

Caudiculus usque  $\pm 15$  cm. altus vel post forsitan altior. Foliorum petiolus 2-4 cm. longus, basi vagina  $\frac{3}{4}-1\frac{1}{2}$  cm. longa, lata intractus; lamina in sicco tenuis, flaccida, obovato-oblonga,  $10-15 \times 4-6\frac{1}{2}$  cm., paullo inaequilatera, apice abrupte, obtusiuscule acuminata, breviter, graciliter apiculata, basi rotundato-cuneata; venae primariae  $\pm 6$  utrinque, ascendentes, longe juxta marginem procurrentes, cum venis secundariis gracilioribus supra insculptae, subtus conspicue prominentes; venae tertiariae quaternariaeque graciles. Pedunculus  $2\frac{1}{2}-3$  cm. longus. Spatha obovato-ellipsoidea, usque  $1\frac{3}{4}$  cm. longa, abrupte, breviter acuminata, pallide viridis. Spadix stipite 3-5 mm. longo suffultus, postremo spatham paullo superans; inflorescentia feminea breviter cylindracea; ovaria breviter conoideo-ovoidea,  $\pm 2$ -seriata; stigma rotundum, peltatum, latitudine crassitudinem ovarii aequans; inflorescentia mascula breviter clavata, quam feminea  $\pm 4-5$ -plo longior, alba, apice late rotundata.

Lingga Island: Panggak, in sago forest, alt. 30 m. (H. A. B. BÜNNEMEIJER No. 7039, 27 July 1919; Malay name: *Seri dewa*).

***Aglaonema oblanceolatum*, V. A. V. R.**

Caudex usque  $\frac{1}{2}-1$  m. altus, apice spiraliter foliatus. Foliorum petiolus  $12\frac{1}{2}-27\frac{1}{2}$  cm. longus, vaginatus; vagina  $10-22\frac{1}{2}$  cm. longa, hinc inde laminam fere attingens, scarioso-marginata; lamina firma, oblanceolata,  $30-40 \times 9-12$  cm., ad vel supra medium latissima, paullo inaequilatera, basi acuta vel anguste rotundato-cuneata, apice proportionem abrupte, brevissime acuminata, brevissime apiculata; costa supra subplana, subtus prominens; venae angulo acuto ascendentes, arcuatae, longe prope marginem procurrentes, in sicco utrinque (subtus quam supra magis) prominentes; venae primariae secundariaeque  $10-16$  utrinque, primariae quam secundariae paullo crassiores; venae tertiariae quaternariaeque graciliores. Pedunculus  $10-15$  cm. longus. Spatha fusiformi-ellipsoidea,  $6-7$  cm. longa,  $1-1\frac{1}{2}$  cm. ampla, perpallide flavido-viridis, utrinque acutata. Spadix breviter petiolatus,  $4-4\frac{1}{2}$  cm. longus,  $\frac{3}{4}-1$  cm. crassus; inflorescentia feminea relative longa,  $1\frac{1}{4}-1\frac{1}{2}$  cm. longa; ovaria breviter ovoidea, perpallide viridia, subalba; stigma late discoideum, pallide flavidum;

inflorescentia mascula quam feminea tantum  $\pm$  2-plo longior,  $2\frac{3}{4}$ —3 cm. longa, perpallide flavida, sublactea, obtusa.

Probably very near *A. oblongifolium* KNTH.

Sumatra: Deli, Sibolangit and Deleng Tindjo, in forest, alt. 350—700 m. (J. A. LÖRZING No. 5352, 14 October 1917, No. 5887, 8 August 1918).

Forma *maximum*: Petiolus 10—15 cm. longus, usque 12 cm. longe vaginatus; lamina usque  $45 \times 12$  cm. Spatha  $8\frac{1}{2}$ — $10\frac{1}{2}$  cm. longa. Spadix 1— $1\frac{1}{2}$  cm. longe stipitatus; inflorescentia feminea 2 cm. longa; ovaria stigmatē . . . . . ; inflorescentia mascula 5—6 cm. longa, . . . . .

Cultivated in the Buitenzorg Gardens, flowering September 1921.

Sumatra: Deli, Sibolangit. (W. DOCTERS VAN LEEUWEN).

**Aglaonema simplex**, BL., in Rumph., I, 152, tab. 36 *D*, 65; ENGL., in Pflzrch., LXIV (IV, 23 *Dc*), 22.

In contradiction with the diagnoses given by ENGLER many of the fruiting specimens of this species, occurring in the Buitenzorg Herbarium and especially those determined by ENGLER himself, have the petiole shorter (3—10 cm. long) and not rarely a smaller lamina; only the forma *macrophyllum*, of which ENGLER gives no diagnosis, has the petiole longer,  $17\frac{1}{2}$ —25 cm. long.

A specimen gathered in Sumatra (Palembang, Mt. Dempoe, E. Jacobson No. 509) has the lamina proportionally short and broad,  $9$ — $13 \times 4\frac{1}{2}$ —6 cm., and the spathe yellow.

With regard to the forma *macrophyllum* quoted above, I observe that of KOORDERS' Nos. 16126, 16129, 16155 mentioned in ENGLER's monograph, the second is wanting in our Herbarium and the first, of which we possess only a single leaf, a peduncle and two berries, has originally been determined by ENGLER as *A. oblongifolium* KNTH, and, with regard to the fine primary veins of the same, which are but slightly stouter than the secondary ones, it agrees in my opinion more with *A. oblongifolium* than with *A. simplex*, which is also the case with No. 16155. All our specimens of *A. simplex* have the primary veins distinctly stouter than the secondary ones.

Two forms united by intermediates:

Forma *typicum*: Leaves with the lamina rather equalsided, rotundate-cuneate to -truncate and sometimes slightly emarginate at the base.

Forma *inaequale*: Foliorum lamina basi inaequilatera, oblique rotundato-truncata, vel oblique rotundata, i.e. altero latere rotundato-cuneato vel rotundato, altero latere paullo longiore, rotundato vel rotundato-truncato, imo hinc inde brevissime decurrenti-cuneata. Spatha pallide viridis. Spadix albus.

Lingga Archipelago: Poeloe Singkep, near Manggoe, road side in forest, alt. 50 m. (H. A. B. BÜNNEMEIJER No. 7180, 2 August 1919).

**Aglaonema brevivaginatatum**, v. A. v. R.

Caudex usque  $\pm 50$  cm. altus, postremo forsitan altior, internodiis longiusculis. Foliorum petiolus gracilis, 4—8 cm. longus, breviter et late vaginatus, vagina plerumque  $\frac{1}{2}$ —1 (raro  $1\frac{1}{2}$ —2) cm. longa, apice abrupte angustata; lamina in sicco tenuis, flaccida, oblongo- vel elliptico-lanceolata, raro ovato-lanceolata,  $14$ — $18 \times 4$ — $6$  cm., vix inaequilatera, apice longiuscule acuminata, basi saepe utrinque aequaliter rotundato-cuneata, interdum rotundata, raro oblique rotundato-truncata, imo saepe breviter cuneato-decurrens; venae primariae  $\pm 6$  utrinque, cum venis secundariis distincte gracilioribus supra insculpta, subtus prominentes, angulo acutiusculo ascendentes, longe juxta marginem procurrentes; venae ceterae graciles. Pedunculus  $\pm 4$  cm. longus. Spatha oblonga vel obovoideo-oblonga,  $\pm 2\frac{1}{4}$ — $2\frac{1}{2}$  cm. longa, pallide viridis, acuminata. Spadix florifer spatham subsuperans, stipite fere  $\frac{1}{2}$  cm. longo suffultus; inflorescentia feminea fere  $\frac{1}{2}$  cm. longa; ovaria ovoideo-conoideo-lageniformia; stigma rotundato-peltatum, latitudine crassitudinem ovarii aequante; inflorescentia mascula subcylindracea, vix clavata,  $\pm 1\frac{1}{4}$ — $1\frac{1}{2}$  cm. longa, 4 mm. crassa, obtusa, alba; stamina inferiora sterilia, partim clavata, partim staminibus fertilibus similia.

Lingga: Panggak, in forest, alt. 60 m. (H. A. B. BÜNNEMEIJER No. 7044, 27 July 1919).

**Aglaonema emarginatum**, v. A. v. R.

Herba majuscula caudice  $\pm 1$  m. alto. Foliorum petiolus  $12\frac{1}{2}$ — $17\frac{1}{2}$  cm. longus, vagina 5—10 cm. longa instructus; lamina in sicco tenuiter papyracea, ovato-oblonga,  $16$ — $23 \times 8$ — $11$  cm., basi leviter obliqua, plus minusve cordato-emarginata, apice abrupte, longiuscule acuminata, brevissime graciliterque apiculata; venae primariae 6—9 utrinque, patentes vel inferiores horizontales, parte superiore conspicue ascendentes, longe juxta marginem procurrentes, supra non vel vix impressae, subtus in sicco depressae; venae secundariae quam primariae partim paullo, partim distincte graciliores; venae tertiariae quaternariaeque graciles. Pedunculus 4—8 cm. longus. Spatha oblonga, subobovoidea, 5—6 cm. longa, involuta 2—3 cm. ampla, obtusa, abrupte, brevissime acuminata. Spadix spatham aequans vel superans, stipite  $\frac{1}{2}$ — $\frac{3}{4}$  cm. longo suffultus; inflorescentia feminea leviter oblique cylindracea,  $\frac{1}{2}$ —1 cm. longa, usque 1 cm. crassa; ovaria 3—4-seriata, depresso-globosa vel -ovoidea; stigma magnum, quam ovarium saepe latius, obconoideum, apice applanatum, rotundatum, medio saepe leviter depressum; inflorescentia mascula subcylindraceo-ellipsoidea, usque  $5\frac{1}{2}$  cm. longa, medio usque  $1\frac{1}{4}$  cm. crassa, apice obtusa; stamina inferiora sterilia, fertilia subsimulantia.

The label bears the field-note: flower pale-cream-coloured.

Poeloe Sebesi, between Java and Sumatra, in primeval forest, alt. to 100 m. (W. DOCTERS VAN LEEUWEN No. 5412, 29 April 1921).



**Aglaonema latius**, V. A. V. R.

Caudex usque  $\pm 50$  cm. altus, apice foliatus. Foliorum petiolus 6–10 cm. longus, plerumque ad  $\frac{2}{3}$  longitudinis (interdum fere usque ad laminam) vaginatus; lamina in sicco tenuis, late ovata ad obovata,  $16-23 \times 10\frac{1}{2}$  cm. (quam lata plerumque 2-plo, interdum 3-plo longior), basi aequaliter vel oblique, late rotundato-cuneata, rotundata vel leviter emarginata, apice sat abrupte et acute acuminata, graciliter apiculata; venae primariae  $\pm 6-8$  utrinque, oblique ascendentes, sursum curvatae, longe juxta marginem procurrentes, in sicco utrinque leviter prominentes, quam secundariae crassiores; venae tertiariae quaternariaeque gracillimae. Pedunculus  $\pm 4\frac{1}{2}$  cm. longus. Spatha oblonga,  $3\frac{1}{2}$  cm. longa, acuminata. Spadix spatham  $\pm$  aequans, stipite  $\pm \frac{1}{2}$  cm. longo suffultus, cylindraco-ellipsoideus; inflorescentia feminea 3–5 mm. longa; ovaria breviter ovoidea, stigma late discoideum; inflorescentia mascula  $\pm 2\frac{1}{2}$  cm. longa,  $+$   $\frac{1}{2}$  crassa, parte basali sterilis; stamina sterilia partim oblongo-ellipsoidea, partim stamina fertilia simulantia; baccae obscure rubrae.

One of the specimens has the label provided with the field note „flower pale-yellow” with which the spathe is probably meant.

Simaloer Island: in forest. (ACHMAD No. 487, 12 June 1918, flowering specimen, No. 1009, 29 March 1919, fruiting specimen).

**Aglaonema grande**, V. A. V. R.

Caudex usque  $1-1\frac{1}{2}$  m. altus, apice foliatus. Foliorum petiolus 10–15 cm. longus, crassiusculus, pallide viridis, vagina  $5-12\frac{1}{2}$  cm. longa instructus, supra vaginam teres, antice apicem versus planiusculus, vix canaliculatus; lamina coriacea, oblongo-ovata,  $25-35 \times 11\frac{1}{2}-15$  cm., vix inaequilatera, supra obscure viridis, subtus pallidior, basi aequaliter vel oblique rotundata vel late rotundato-cuneata, apice abrupte et acute acuminata, vix apiculata; costa supra apicem versus insculpta, ceterum leviter prominens, planiuscula, subtus valde prominens, semiteres, quam lamina pallidior; venae primariae  $\pm 8-12$  utrinque, supra insculptae, subtus prominentes, ascendentes vel inferiores subhorizontales, conspicue sursum arcuatae; venae secundariae quam primariae graciliores; venae tertiariae quaternariaeque gracillimae, absconditae. Pedunculus  $\pm 9$  cm. longus, proportione gracilis, pallide viridis. Spatha oblonga,  $\pm 5$  cm. longa,  $1\frac{1}{2}$  cm. ampla, perpallide viridis, fere alba, basi obliqua, apice abrupte, breviter acuteque acuminata. Spadix in juventute spatham aequans vel post probabiliter paullo longior, stipite  $\frac{1}{2}$  cm. longo, basi obliquo suffultus; inflorescentia feminea  $\pm \frac{1}{2}$  cm. longa; ovaria 2–3-seriata, breviter ovoidea, pallide flavescenti-viridia; stigma latuscule discoideum, citrinum, medio leviter foveolatum; inflorescentia mascula cylindraco, quam feminea  $\pm 7$ -plo longior,  $3\frac{1}{2}$  cm. longa,  $\frac{3}{4}$  cm. crassa, obtusa; stamina inferiora 2–3-seriata sterilia, stamina fertilia simulantia, sterilia lactea, fertilia albida.

The description is taken from living specimens cultivated in the Buitenzorg Gardens, flowering March 1921.

Borneo (NIEUWENHUIS, No. 863).

**Aglaonema subarborescens**, V. A. V. R.

Caudex erectus, carnosus, usque ad 2—3 m. altus. Foliorum petiolus 15—27 $\frac{1}{2}$  cm. longus, vaginatus; vagina 12—22 cm. longa, in foliis magnitudinis modica interdum basin laminae fere attingens, a basi lata apicem versus sensim angustata; lamina in sicco tenuis, ovata, 25—35×11—25 cm., basi late rotundato-cuneata ad rotundato-truncata et non vel vix emarginata, apice obtusiuscula vel leviter acuminata, brevissime apiculata; venae primariae  $\pm$  10—15 utrinque, conspicue arcuato-ascendentes, supra in sicco partim insculptae, partim non insculptae, subtus prominentes, inferiores basin versus subhorizontales; venae secundariae quam primariae paullo graciliores, tertiariae gracillimae. Pedunculus pro ratione gracilis,  $\pm$  10—17 $\frac{1}{2}$  cm. longus. Spatha oblonga (navicularis?), 4—5 $\frac{1}{2}$  cm. longa, pallide viridis, subalba, breviter acuminata. Spadix quam spatha paullo brevior, stipite 1—2 cm. longo, pro  $\frac{1}{2}$ — $\frac{3}{4}$  parte cum spatha connato suffultus; inflorescentia feminea brevissima vel usque  $\frac{1}{2}$  cm. longa; ovaria breviter ovoidea; stylus brevis crassusque; stigma late discoideum; inflorescentia mascula cylindracea vel ellipsoidea, quam feminea  $\pm$  5—6-plo longior, 2 $\frac{1}{2}$ —3 $\frac{1}{4}$  cm. longa,  $\frac{1}{2}$ —1 cm. crassa, pallide viridis, subalba, obtusa.

Malay name: *Sandar*.

Sumatra: Mt. Malintang, in forest near river, alt. 1100 m. (H. A. B. BÜNNEMEIJER No. 4311, 5 August 1918); Mt. Sago, border of forest, alt. 1150 m. (H. A. B. BÜNNEMEIJER No. 4351, 7 August 1918).

**Aglaonema elongatum**, V. A. V. R.

Caudex usque 50 cm. longus vel longior, a basi apicem versus sensim paullo attenuatus, apice foliatus, medio  $\pm$  2 cm. crassus, internodiis  $\pm$  2 cm. longis. Foliorum petiolus 6—12 cm. longus, vagina 4 $\frac{1}{2}$ —10 cm. longa instructus, ceterum antice leviter canaliculatus, interdum vaginam versus teres; lamina in vivo coriacea, longe lineari- vel lanceolato-ovata, quam lata 5—7-plo longior, 22—28×3 $\frac{3}{4}$ —5 $\frac{1}{2}$  cm., paullo inaequilatera, altero latere usque  $\frac{1}{4}$  latiore, dimidia parte basali latissima, apicem versus sensim subfalcato-angustata, supra obscure viridis, copiose minutissime albido-puncticulata, acumine utrinque latere costae linea angusta, flavido-viridi, intramarginali munita, basi rotundata vel late rotundato-cuneata, apice plus minusve sensim acuminata; costa supra apicem versus insculpta, ceterum leviter plano-prominens, media parte 1-, basin versus 2-sulcata, sulcis non profundis, subtus valde prominens, semiteres; venae primariae  $\pm$  4—5 utrinque, superiores suberectae, inferiores angulo acutiusculo ascendentes, longe juxta marginem procurrentes, supra insculptae, subtus basin quam apicem versus distinctius prominentes; venae secundariae quam primariae

paullo graciliores; venae tertiariae gracillimae, absconditae. Pedunculus  $\pm 4$  cm. longus. Spatha elongato-oblonga,  $\pm 4\frac{1}{2}$  cm. longa, 9 mm. ampla, viridis, apice breviter, acute acuminata. Spadix quam spatha paullo brevior, cylindraceus, stipite  $\pm \frac{1}{2}$  cm. longo suffultus; inflorescentia feminea  $\pm \frac{1}{2}$  cm. longa, pistillis 2—3-seriatis; ovaria crasse ovata, viridia, apice conoideo-attenuata; stylus crassus, perbrevis; stigma discoideum, latum, pallide sulfureum, in medio leviter impressum; inflorescentia mascula quam feminea  $\pm 6$ -plo longior,  $\pm 3\frac{1}{4}$  cm. longa,  $\frac{3}{4}$  cm. crassa; stamina in juventute alba, stamina serierum 2—3 inferiorum sterilia, interdum oblongo-ellipsoidea, ceterum plerumque stamina fertilia plus minusve simulantia.

Near *A. Schottianum* MIQ. — The description is taken from a living specimen cultivated in the Buitenzorg Gardens, flowering March 1921.

Borneo: Mt. Tenampak. (Capt. VAN GENDEREN STORT's North Borneo Boundary Commission, Coll. AMDJAH).

**Aglaonema pictum** (RXB.) KNTH, Enum., III, 55; ENGL., in Pflzrch., LXIV (IV, 23 *Da*), 33. — *Calla picta*, RXB., Flor. Ind., III, 516; WIGHT, Icon., III, tab. 804 (not 1804).

Specimens cultivated in the Buitenzorg Gardens, determined by ENGLER, having flowered March 1921, are distinguished as follows: Leaves with the petiole 2—4 cm. long, the anterior side more or less canaliculate between the sheath and the lamina, the sheath  $1\frac{1}{2}$ —3 cm. long, finally scariose and more or less dilacerated; lamina elliptical-oblong or ovate, to  $15 \times 7\frac{1}{2}$  cm., the upper surface dark-green, opaque-velutinous, spotted, the spots very irregular and irregularly scattered, pale-yellowish-green, here and there pale-greyish-green, especially near the costa, the base rotundate or rotundate-cuneate, occasionally slightly emarginate, the apex acuminate, shortly apiculate; costa above impressed towards the apex, for the rest prominent, grooved in the lower part, beneath prominent, semiterete; primary veins impressed above, prominent beneath, stouter than the secondary ones. Peduncle  $2\frac{1}{2}$ —3 cm. long, pale-green. Spathe broadly oblong or obovoid, not gibbous,  $2\frac{1}{4}$ — $2\frac{3}{4}$  cm. long,  $1\frac{3}{4}$ —2 cm. diam., pale (green, yellowish-green or yellow), suddenly shortly acuminate. Spadix on a stalk 6—8 mm. long, at length distinctly exceeding the spathe; feminine inflorescence 3—6 mm. long; ovaries shortly ovate, pale (green or yellow); staminodes occasionally present, ellipsoidal, ivory-white, rather acute or subacute; masculine inflorescence elongate-clavate, to 2— $2\frac{1}{2}$  cm. long, the lower part sterile, to  $\frac{1}{2}$ —1 cm. long, the upper part fertile; sterile stamens pale-yellow or ivory-white, the lower resembling the staminodes of the feminine inflorescence, the higher nearly resembling the fertile ones; fertile stamens dirty-white or ivory-white.

The young plants have the leaves with the spots not irregularly scattered but confluent into a pale-greyish-green line on each side of and close to the costa.

Var. **tricolor**, N. E. BR., MS.; ENGL., l.c. — Another plant cultivated in the Buitenzorg Gardens, flowering and fruiting February and March 1921, which might be considered as a form of this variety, is distinguished in having the entire lamina spotted, rather marbled with dark-green, bright-green and pale-grey-green but so that the bright-green portions are dominant; berries oblong,  $\pm 1\frac{1}{2}$  cm. long, 1 cm. thick, carmine-red.

**Aglaonema Roebelenii** (LIND.), GENT., Pl. cult. Serr. Jard. bot. Brux., 11; ENGL., in Pflzrch., LXIV (IV, 23 Dc.), 19. — *Schismatoglottis Roebelenii* LIND., MS. (?).

I have not seen an authentic specimen of this species. Plants from an unknown origin, cultivated in the Buitenzorg Gardens, determined by ENGLER as *A. Roebelenii*, are distinguished from ENGLER's diagnosis as follows: Stems to 1 m. high, 5 cm. thick, erect or at length reclinate, densely foliate at the apex. Leaves with the petiole  $7\frac{1}{2}$ —20 cm. long, green, with the sheath 6—12 cm. long, narrowly scarioso at the edge; lamina elliptical-oblong, to  $30 \times 15$  cm., somewhat unequal-sided, the apex very shortly acuminate, the upper surface dark-green, maculate; spots pale-greyish-green, minutely darker-spotted or punctulate, those of the smaller leaves mostly confluent into irregularly flammiform or marbled lines running along the primary veins and the lines commonly confluent again into a very broad, irregularly eroso-lacerated line on each side, medial between the costa and the margin, as is invariably the case in the larger leaves. Cataphylla linear-lanceolate, shorter than the peduncle, pale-yellow. Peduncle 4—7 cm. long, green. Spathe elongate-oblong,  $3\frac{1}{2}$ — $5\frac{1}{2}$  cm. or more long,  $\frac{1}{2}$ — $\frac{3}{4}$  cm. diam., green. Spadix on a stalk  $\frac{1}{2}$ — $\frac{3}{4}$  cm. or more long; ovaries depresso-globose or -ovate, pale-green, the apex subconically attenuated into a short and thick style; stigma broader than the style, slightly foveolate in the middle; masculine inflorescence very pale-green or-yellow, nearly white; berries oblong, when young green, afterwards orange or minium-red, when ripe carmine-red,  $\pm 1\frac{1}{2}$  cm. long, nearly 1 cm. thick.

**Aglaonema robustum**, V. A. V. R.

Planta robusta, caudice usque  $1\frac{1}{2}$  m. vel plus longo, basi  $\pm 6$  cm. crasso, apice foliato. Foliorum petiolus  $17\frac{1}{2}$ — $27\frac{1}{2}$  cm. longus, vagina  $\pm 15$  cm. longa instructus, supra vaginam teres, antice apicem versus pro ratione late sed non profunde canaliculatus; lamina coriacea, elliptico-oblonga,  $35$ — $40 \times 14$ — $16$  cm., medio latissima, utrinque subaequaliter angustata, supra obscure viridis, secus venas pallidius viridi-maculata, maculis plerumque in fasciis irregulariter erosis confluentibus, subtus laete viridis, basi late rotundato-cuneata, apice obtusiuscula, acuta vel brevissime acuminata, brevissime apiculata; costa supra leviter depressa, subtus valde prominens, teres; venae primariae  $\pm 6$ — $8$  utrinque, subtus leviter prominentes, basi patentiores, ceterum sursum curvatae; venae secundariae quam primariae paulo



*Amorphophallus Brooksii* v. A. v. R.



graciliores, tertiariae gracillimae, absconditae. Pedunculus  $\pm$  10 cm. longus, viridis. Spatha elongato-conoideo-oblonga,  $\pm$  7 cm. longa,  $1\frac{1}{4}$  cm. ampla, pallide viridis, basi obliqua, apice acuta. Spadix quam spatha paullo brevior, stipite 2 cm. longo, pro dimidia parte superiore libero, casso suffultus, basi obliquus; inflorescentia feminea  $\frac{1}{4}$ — $\frac{3}{4}$  cm. longa; ovaria 1—3-seriata, breviter ovoidea, perpallide viridia; stigma late discoideum, pallide sulfureum, in medio paullo foveolatum; inflorescentia mascula conoideo-cylindracea, quam feminea  $\pm$  6-plo longior, 3 cm. longa, basi fere 1 cm. crassa, eburnea (potius perpallide flavida), obtusa; stamina inferiora pauciserialia sterilia, partim subprismatica, partim stamina fertilia simulantia.

The description is made after specimens from an unknown habitat, cultivated in the Buitenzorg Gardens. — Near *A. commutatum* SCHOTT.

**Amorphophallus Brooksii**, v. A. v. R., in Bull. Bot., I (1920) 368; this Bull., tab. 16.

The photograph, kindly sent to me by Mr. C. J. BROOKS, the discoverer of the species, has been taken by Mr. A. G. GOW, from Lebong Tandai, quite near the spot where the original specimen was found.

**Cyrtosperma Merkusii** (HASSK.), SCHOTT; v. A. v. R., this Bull., I (1920) 374.

A living specimen from Sumatra (Deli, Haboko, W. DOCTERS VAN LEEUWEN), cultivated in the Buitenzorg Gardens, is distinguished by the following characters: Leaves with the petiole green, the prickles often reddish; lamina green, the antical lobe nearly triangular, very shortly acuminate, shortly apiculate; spathe with the outer side greenish-yellow, longitudinally darker-veined except at the base, purple between the veins, the inner side greenish-yellow, the edges imbricating at the base only, the apex rather shortly acuminate; spadix with the ovaries oblong, with a purple-tinted, bluntly conoid apex slightly surpassing the tepals which are green-yellow, at length dark-olivaceous at the apex.

**Cyrtosperma hastatum**, v. A. v. R., this Bull., I (1920) 375.

A living young plant from an unknown habitat, probably from New Guinea, cultivated in the Buitenzorg Gardens and that may belong to this species, is distinguished by the following characters: Petiole more than 50 cm. long, at length dirty-brown, densely olivaceo-verruculose among the prickles; lamina green; peduncle green or yellow-green, slightly olivaceous towards the base, very copiously pale-verruculose-puncticulate among the prickles; spathe long-ovate-lanceolate,  $27\frac{1}{2} \times 5$  cm., broadest near the base, long-acute, dirty-yellow, the lower part pale-glanduloso-puncticulate, the stoutest veins green, the very base green on the outer side, purple on the inner side, the upper  $\frac{2}{3}$  portion longitudinally striated, the stripes

relatively broad, brown-purple on the outer side, black-purple and pale-puncticulate on the inner side; spadix dirty-yellow; ovaries cylindraceo-lageniform, green, 1-ovulate.

**Epipremnopsis Zippeliana**, v. A. v. R. — ? *Epipremnum Zippelianum*, ENGL. p. p., in Pflzrch., XXXVII (IV, 23 B), Arac.-Monster., 66; in BECC., Mal., 1, tab. XX, fig. 10—12.

Caudex usque 4 m. alte scandens, in sicco hic illic ruguloso-asperulus, cataphyllis stupose decompositis obsessus. Foliorum petiolus 25—40 cm. longus, antice canaliculatus, basi breviter vaginatus, in sicco hic illic puncticulato- vel ruguloso-asperulus; lamina rotundato- vel cordato-ovata vel rotundato-cordata, 35—50 cm. longa,  $\pm$  aequilata vel paullo angustior, usque ad costam pinnatim incisa; laciniae 3—5 utrinque, obovato-lanceolatae; lacinia terminalis recta; laciniae laterales subfalcato-curvatae, inaequilatae, latere altero  $1\frac{1}{4}$ — $1\frac{3}{4}$ -plo latiore, apice breviuscule ad longiuscule et acute acuminatae vel valde oblique truncatae angulo antico acute acuminato, postico obtuso vel rotundato, basin non-perforatum versus plus minusve (laciniarum superiorum minus, inferiorum valde) angustatae, basi abrupte dilatatae; laciniae maximae usque  $30 \times 8$  cm.; venae primariae in laciniis solitariae; venae secundariae 2, inter costam marginemque  $\pm$  medianae, venae tertiariae 2, ad marginem approximatae, omnes inter se et cum vena primaria venis secundariis tertiariisque obliquis unitae; venae quaternariae numerosae, reticulatae. Pedunculus  $17\frac{1}{2}$ —25 cm. longus, in sicco graciliter, longitudinaliter rugulosus. Spatha conchiformis, + 10 cm. longa, explanata +  $6\frac{1}{2}$  cm. lata, longitudinaliter venosa, extus in sicco graciliter puncticulato-asperula, cellulis spicularibus deficientibus. Spadix stipitatus, florifer cylindraceo-clavatus, 3 cm. longus et 1 cm. crassus vel paullo major, stipite + 1 cm. longo, fructifer 5 cm. longus et  $2\frac{1}{2}$  cm. crassus, stipite  $1\frac{1}{2}$  cm. longo; ovaria conferta, apice applanata, angulosa, cellulis spicularibus deficientibus, ovula 2; stigma majusculum, oblongum, leviter elevatum; baccae obovoideae, apice subrotundatae, aurantiaco-rubrae; semina 2, lateraliter compressa, oblique obovata, i.e. leviter curvata, subreniformia, embryo crassus, curvatus.

The original label bears the note „petiole shortly puberulo-asperulous”, but I could not find any trace of hairs. — The cataphylla are provided with numerous acicular cells which are wanting in the other portions of the plant, as is the case in all the specimens of *Epipremnopsis media* ENGL., occurring in the Buitenzorg Herbarium, determined by ENGLER. Some of the lateral laciniae of the leaf resemble exactly that of *Epipremnum Zippelianum* ENGL. represented in ENGLER's figure quoted above and it may be possible that this species is identical with the *Epipremnum Zippelianum* reported from Ternate but perhaps not from the other habitats given by ENGLER in Pflanzenreich. The original *Raphidophora Zippeliana* SCHOTT from New Guinea is unknown to me.



Ternate: Foramadiahi, in forest, alt. 1400 m. (V. M. A. BEGUIN No. 1197, 26 November 1920).

***Epipremnopsis magnifica***, v. A. v. R. —? *Epipremnum magnificum*, ENGL., p. p., in Pflzrch., IV (23 B), Arac.-Monster., 65; in BECC., Mal., I, 274, tab. XX, fig. 6—9.

A praecedenti differt caudice in sicco conspicue, longitudinaliter, acute cristato-rugoso, verruculoso-asperulo, primum cataphyllis mox dilaceratis, caducis abscondito. Foliorum petiolus duplo longior, minutissime punctulato-asperulus vel sublaevis, in sicco conspicue, longitudinaliter sulcatus, basi brevissime vaginatus; lamina oblonga vel ovata,  $1\frac{1}{2}$ -plo longior, laciniis lateralibus  $\pm 10$  utrinque, lanceolatis, rectis vel plus minusve falcato-curvatis, apicem versus sensim angustatis, basin versus plus minusve conspicue contractis, imo dilatatis, maximis usque  $30 \times 5$  cm.; venae primariae in laciniis solitariae, venis secundariis, tertiariis quaternariisque, marginem approximatis comitatae. Pedunculus  $2\frac{1}{2}$ —4 cm. longus. Spatha e basi subconvoluta conchiformi-navicularis,  $\pm 3\frac{1}{2}$  cm. longa,  $1\frac{1}{2}$  cm. lata, caduca. Spadix sessilis, oblongo-cylindraceus, florifer  $\pm 2\frac{1}{2}$  cm. longus,  $\frac{3}{4}$ —1 cm. crassus, fructifer 5—8 cm. longus, 2 cm. crassus; ovaria viridi-flavida; stigma elevatum, interdum rotundum, plerumque oblongum vel breviter lineare; baccae rubrae, plerumque 1-spermae; semina obovato-oblonga, recta.

New Guinea: near Pionier Bivak and Prauwen Bivak, hemiepi-phytical in forest, alt. 10 m. (H. J. LAM Nos. 487, 582, 30 June and 7 July 1920).

***Holochlamys elliptica***, v. A. v. R.

A. H. *Beccarii* ENGL. differt foliis petiolo maxime usque ad medium vaginato, quam lamina  $1\frac{1}{2}$ -plo longiore, lamina paullo minore, elliptica, utrinque subaequaliter angustata et  $\pm$  abrupte acuteque acuminata, venis primariis inter 12 et 20 utrinque, pedunculo brevioribus, florifero  $12\frac{1}{2}$  cm. longo, spadice brevissime stipitato, graciliore, perigoniis 2 mm. altis, antheris maturis totaliter exsertis, horizontaliter divergentibus, thecis elongatis,  $\pm$  lateraliter dehiscentibus, ovariis quam perigoniis altioribus,  $\pm 3$  mm. altis, apice  $\pm$  rotundato-truncatis, stigmatibus paullo elevatis, inferioribus saepe 3-lobatis, superioribus saepe longitudinaliter oblongis.

New Guinea: near Pionier Bivak and Prauwen Bivak, in forest, alt. 10—90 m. (H. J. LAM Nos. 500, 1046, 2 July and 5 September 1920).

***Homalomena rubrovaginata***, v. A. v. R.

*Chamaecladon*. — Herba usque  $\pm 25$  cm. alta, caudice perbrevis vel e basi decumbente erecto et 15 cm. alto, usque ad internodia superiora radices emittente. Foliorum petiolus 3— $7\frac{1}{2}$  cm. longus,  $\frac{1}{3}$  vel  $\frac{1}{2}$  vaginatus,

viridis, ima pallide roseus, antice canaliculatus, ceterum cum parte inferiore costae venis primariis decurrentibus longitudinaliter rugosus; vagina obscure rosea (potius perpallide viridis vel rosea et punctis minutis vel liniis brevissimis, innumerabilibus, coccineis munita), pallide marginata; lamina herbacea, late elliptica, 5—10  $\times$  3—5 cm., medio latissima, saepe paullo inaequilatera, uno latere usque  $\pm$   $1\frac{1}{4}$ -plo latiore, utrinque aequaliter angustata, acutiuscula, supra obscure smaragdina, nitidula, subtus pallidior, basi late rotundato-cuneata, margine crispatulo-undulata, apice brevissime acute apiculata; venae primariae 3—5 utrinque, leviter prominentes, oblique ascendentes, apicem versus sursum curvatae, basi decurrentes; venae secundariae tertiariaeque sensim graciliores. Pedunculus 2— $2\frac{1}{2}$  cm. longus, viridis. Spatha fusiformi-oblonga,  $1\frac{1}{2}$ —2 cm. longa, 3—6 mm. ampla, demum hians, viridis vel flavida, apice breviter acute acuminata. Spadix brevissime stipitatus, fusiformi-cylindraceus,  $1\frac{1}{4}$ — $1\frac{1}{2}$  cm. longus, 2—3 mm. crassus, albidus vel pallide flavidus; inflorescentia feminea 2—3 mm. longa; ovaria crasse ovoidea, 2-locularia, ovulis basifixis; stigma discoideum, rotundum, quam apex ovarii latius; staminodia crasse clavata, sessilia, fere ovaria aequantia; inflorescentia mascula 10—12 mm. longa, acuta; flores masculi saepe 3-andri; antherae thecis sub connectivo non occultis.

The description is taken from fresh material.

Java: Buitenzorg, Mt. Tjipoetih, along water-side in forest, alt. 600 m. (R. C. BAKHUIZEN VAN DEN BRINK No. 5030, 24 September 1920).

Var. **subpurpurea**: Foliorum petiolus (vagina excepta) aeneo-viridis; lamina supra nigro-viridis, subtus sordide purpurea (rubra et dense, pallide viridi-puncticulata); venae primariae subtus distincte prominentes. Pedunculus sordide purpureus (viridis et rubro-puncticulatus), basin versus sordide roseus. Spatha parte inferiore sordide purpurea, sursum aeneo-viridis. Spadix ovarii pallide viridibus, floribus masculis perpallide viridi-flavidis, subalbis, 2—3-andris.

The description is taken from a living plant cultivated in the Buitenzorg Gardens.

Java: Mt. Tjikorai.

**Homalomena pygmaea** (HASSK.), ENGL., Pilzrch., LV (23 Da), Arac.-Homal.-Schimat., 34., fig. 15. — *Aglaonema pygmaeum*, HASSK., Cat. Hort. Bog., 57.

H. J. LAM's No. 722 from New Guinea (near Pionier Bivak, in forest, alt. 10 m., 29 July 1920) seems to be a form of this species or a nearly related species. It has, however, the flowers too old for identification and differs from the common form of this in having the leaves with the lamina oblanceolate, broadest above the middle, with the base on one side somewhat longer than on the other side, and, according to the field note, the

flowers with the spathe green to greenish-white, the spadix white or yellow-white.

Forma *longipes*: Foliorum petiolus quam lamina  $1\frac{1}{2}$ —2-plo longior, 8—18 cm. longus; lamina oblonga,  $4-10 \times 2-5$  cm., et basi acuta, interdum ovata, quam lata  $1\frac{1}{2}$ -plo longior et basi obtusa. — Island Simaloer near north-west coast of Sumatra: Tapah, Dêfajan, in forest. (ACHMAD No. 1723, 12 March 1920).

**Homalomena lilacina**, V. A. V. R.

*Chamaecladon*. — *H. Lauterbachii* ENGL. affinis sed dimensibus fere omnibus majoribus. Foliorum petiolus in planta adulta quam lamina  $\pm 1\frac{1}{2}$ -plo longior, longius vaginatus; lamina conspicue sagittata,  $13-20 \times 4-7$  cm., in juventute lilacina. Pedunculi 2—4 cm. longi. Spatha ovoideo-fusifformis,  $2\frac{1}{2}$ —3 cm. longa, 3—4 mm. ampla, in juventute lilacina, basi acuta, apice longe, graciliter cuspidata. Spadix breviter stipitatus; inflorescentia feminea cylindræa, 6 mm. longa, 2 mm. crassa; ovaria crasse ovoidea; staminodia obconoideo-clavata; inflorescentia mascula ellipsoideo-cylindræa, quam feminea  $\pm 2$ -plo longior, in medio 2 mm. crassa.

New Guinea: near Pionier Bivak, terrestrial in forest, alt. 10 m. (H. J. LAM No. 755, 31 July 1920).

**Homalomena sebessiana**, V. A. V. R.

*Euhomalomena*. — Herba maxima caudice usque  $\pm \frac{1}{2}$  m. alto. Foliorum petiolus  $\pm 65$  cm. longus, ultra tertiam partem vaginatus; lamina in sicco papyracea, sagittato-cordata,  $\pm 50 \times 30$  cm., lobo antico triangulari vel oblongo-triangulari,  $38 \times 30$  cm., linea plus minusve extrorsum curvata in acuminem angustato, lobis posticis obtuse triangularibus,  $12-13 \times 14$  cm., vix extrorsis, sinu rectangulari separatis; venae primariae 8—9 utrinque,  $\pm 4$  basales radiantes et apicem versus conspicue sursum curvatae, costales sensim ascendentes, apicem versus arcuatae; venae secundariae, tertiariae quaternariaeque sensim graciliores, tertiariae quaternariaeque inferne inter

primarias obliquae. Pedunculus. . . . . Spatha oblonga,  $\pm 9$  cm. longa, convoluta  $2\frac{1}{2}$ —3 cm. ampla, antice late hians, marginibus ad basin solum imbricatis, apice acutiuscula, brevissime apiculata. Spadix stipite  $\frac{3}{4}$  cm. longo, crasso suffultus; inflorescentia feminea cylindræa, 2 cm. longa, 1 cm. crassa; ovaria subobovoideo-oblonga, apice rotundata; stigma sessile, majusculum, depressoglobosum (crasse lentiforme); staminodia pistillata (fig. a); inflorescentia mascula conoideo-ellipsoidea,  $6\frac{1}{2}$  cm. longa, inferne  $1-1\frac{1}{4}$  cm.

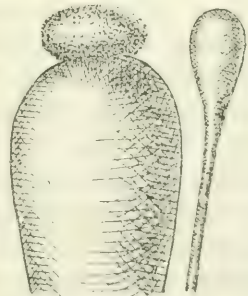


Fig. a.

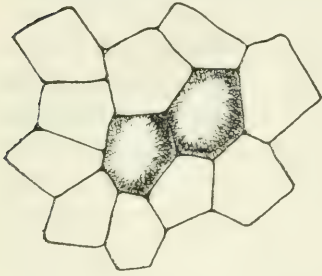


Fig. b.

crassa, apicem obtusiusculum versus attenuata,  $\frac{1}{8}$  parte basali sterilis, staminodiis confertis, brevibus, pro ratione latissimis, irregulariter 4–6-angulosis, apice rotundatis composita (fig. b); flores masculi fertiles 4- vel saepius 5-, interdum 6-andri, subirregulariter 4–6-angulosi; thecae sub connectivo crasso, apice truncato absconditae (fig. c).

The label bears the field-note: flower cream-coloured.

— Distinct by the rather large sterile basal portion of the masculine inflorescence.

Sebesi (between Java and Sumatra): in dry brook-bed between high rocks in primeval forest near sea-shore (W. DOCTERS VAN LEEUWEN No. 5349, 27 April 1921).



Fig. c.

### *Homalomena rosea*, V. A. V. R.

*Euhomalomena*. — Caudex brevis. Foliorum petiolus usque 1 m. longus, teres sed antice apicem versus leviter canaliculatus, potius applanatus angulis obtuse rotundatis, basin versus  $\frac{1}{3}$  longitudinis vaginatus, olivaceus, apicem versus pallide viridis; lamina in vivo subcoriacea, supra obscure viridis, subtus pallidior, in circuitu late ovato-cordata, usque  $60 \times 45$  cm., lobo antico apice obtusiusculo, abrupte brevissime acuminato, lobis posticis +  $\frac{1}{2}$  longitudinis lobi antichi metientibus, semireniformibus, introrsis, sinu angusto acuto separatis, hinc inde leviter imbricatis; costa subtus valde prominens, supra flavido-viridis; venae primariae 10–12 utrinque, subtus prominentes, 4–5 basales radiantes, costales ascendentes, omnes apicem versus sursum curvatae; venae secundariae, tertiariae quaternariaeque sensim graciliores. Pedunculus 6–9 cm. longus, fructifer probabiliter longior, perpallide sordide roseus, lineis angustis, compactis, obscure roseis, non interruptis longitudinaliter striatus. Spatha oblonga,  $7\frac{1}{2}$ –8 cm. longa, 2–3 cm. ampla, abrupte, brevissime apiculata, intus albida, extus perpallide rosea, lineis angustis, compactis, obscure roseis, copiosissime interruptis longitudinaliter striata. Spadix breviter stipitatus, spatham aequans vel paullo superans; inflorescentia feminea cylindracea,  $2\frac{1}{2}$ – $3\frac{1}{2}$  cm. longa,  $1$ – $1\frac{1}{3}$  cm. crassa; ovaria oblonga, perpallide viridia, subalba; stigma late discoideum, crassitudinis ovarii, sordide album; staminodia pistilla aequantia, obconoideo-clavata, alba, graciliter stipitata; inflorescentia mascula conoideo-cylindracea,  $\pm 4\frac{1}{2}$  cm. longa, crassitudinis inflorescentiae femineae, eburnea, obtusiuscula vel acutiuscula; flores masculi 3- vel interdum 4-andri, thecis sub connectivo crasso, apice truncato absconditis; stamina inferiora, 1–2-verticillata sterilia.

The description is taken from a living plant from Sumatra (Sibolangit, W. DOCTERS VAN LEEUWEN), cultivated in the Buitenzorg Gardens, having flowered August 1921. — It may be possible that this is identical with LÖRZING's No. 5324, formerly determined by me as a form of *H. rubra* HASSK., but the latter has the spadix distinctly shorter than the spathe, even when fruiting, and the different portions of this have an aromatic and not at all an awfully stinking smell.

**Homalomena ensiformis**, v. A. v. R. — *H. Miqueliana*, SCHOTT, ENGL. & KRAUSE, in Pflzrch., LV (IV, 23 Da), Arac.-Homal.-Schism., 69, p.p.

*Euhomalomena*. — Foliorum petiolus  $17\frac{1}{2}$ —30 cm. longus,  $\frac{2}{3}$ — $\frac{3}{4}$  longitudinis vaginatus; lamina in sicco subcoriacea, elongato-lanceolata, quam lata 5—7-plo longior,  $27\frac{1}{2}$ —40  $\times$  4—8 cm., supra medium latissima, basin acutam vel late rotundato-cuneatam et abrupte breviterque acuminatam (in specimine nec subtruncatam, nec emarginatam) versus sensim angustata, apice longiuscule acuteque acuminata, graciliter apiculata; venae omnes distinctius prominentes, erecto-patentes, apicem versus sursum arcuatae, longe procurrentes; venae primariae 5—6 utrinque; venae secundariae, tertiariae, quaternariaeque sensim graciliores. Pedunculus 20—25 cm. longus. Spatha 9—12 cm. longa, paullo infra medium contracta, tubo oblongo, usque  $5\frac{1}{2}$  cm. longo, lamina cylindraneo-conoidea, usque  $6\frac{1}{2}$  cm. longa, acuta. Spadix stipite 3—5 mm. longo suffultus, 6—8 cm. longus; inflorescentia feminea fusiformi-cylindracea, usque  $2\frac{3}{4}$  cm. longa,  $\frac{1}{2}$  cm. crassa, staminodiis crassis, depresso-globosis, graciliter longe stipitatis, pistilla aequantibus; ovaria conoideo-lageniformia vel -ovoidea, 3-locularia; stigma magnum, late discoideum,  $\pm$  rotundum, fovea centrali, 3-radiata (sub-3-angulosa) obscure lobatum; inflorescentia mascula a feminea interstitio brevi, nudo vel floribus paucis, sparsis, partim sterilibus, partim fertilibus munito separata; flores masculi 3- vel saepius 4-andri; stamina brevissima, thecis sub connectivo crasso, apice truncato, anguloso absconditis.

Near *H. Miqueliana* SCHOTT.

Borneo. (HALLIER No. 1465).

**Homalomena Miqueliana**, SCHOTT, in Ann. Mus. Bot. L. B., 126; ENGL. & KRAUSE, in Pflzrch., LV (IV, 23 Da), Arac.-Homal.-Schism., 69, fig. 44.

SCHOTT's original diagnosis of this species differs from the description and partly from the figure given by ENGLER and KRAUSE principally as follows: Leaves with the petiole  $22\frac{1}{2}$ — $27\frac{1}{2}$  cm. long; lamina linear-oblong,  $20$ — $27\frac{1}{2}$   $\times$   $5$ — $7\frac{1}{2}$  cm., the edges parallel except in the upper  $\frac{1}{3}$  portion, the base abruptly contracted, subtruncate with a rounded angle (i. e. broadly rotundate-cuneate-subtruncate), the very base very shortly cuneate, the apex subabruptly cuspidate-acuminate. Peduncle 15—20 cm. long. Spadix with

the masculine inflorescence somewhat remote from the feminine, with the lower stamens scattered, submutilate (i. e. rather undeveloped, sterile).

HALLIER's No. 1465 from Borneo, referred by ENGLER and KRAUSE to this species, formerly determined by ENGLER as *H. lancea* RIDL., is in my opinion not this species. See my description of *H. ensiformis* v. A. v. R.

Var. **truella**. Differs from SCHOTT's diagnosis of the type as follows: Foliorum petiolus  $42\frac{1}{2}$ — $47\frac{1}{2}$  cm. longus,  $\frac{2}{3}$ — $\frac{3}{4}$  longitudinis vaginatus; lamina in sicco subcoriacea, quam lata 4— $4\frac{1}{2}$ -plo longior,  $37\frac{1}{2}$ —45  $\times$  9—11 cm., basi conspicue oblique rotundata ad truncata angulis rotundatis, imo abrupte breviter cuneata; venae prominulae; venae primariae 5—6 utrinque; venae ceterae (secundariae, tertiariae, quaternariaeque) sensim graciliores. Cataphylla linearia,  $\pm 22 \times 1\frac{1}{2}$  cm., obtusa. Pedunculus 20—25 cm. longus. Spatha viridis; tubus oblongus,  $4\frac{1}{2}$  cm. longus,  $1\frac{1}{2}$  cm. amplus; lamina lineari-conoidea,  $8\frac{1}{2}$  cm. longa, 1 cm. ampla, acuta. Spadix albus, stipite  $\pm \frac{1}{2}$  cm. longo suffultus; inflorescentia feminea cylindracea,  $\pm 2\frac{1}{2}$  cm. longa, 1 cm. crassa, staminodiis crassis, depresso-globosis, jonge filiformi-stipitatis, pistilla aequantibus; ovaria depresso-globosa, basi apiceque applanata (fig. d), 3-locularia; stigma magnum, discoideum, rotundum, fovea centrali, profundiuscula, 3-radiata (sub-3-angulosa) obscure 3-lobatum; inflorescentia, mascula a feminea interstitio nudo, brevissimo separata, subcylindracea, 8 cm. longa,  $\frac{3}{4}$  cm. crassa, supra basin paullo contracta, apicem versus plus minusve attenuata; antherae 3- vel saepius 4-andri, staminibus inferioribus sterilibus, haud sparsis. — Riouw Archipelago: Pulo Bintan, Anjoelai, in forest, alt. 30 m. (H. A. B. BÜN-NEMEIJER No. 6200, 14 June 1919).

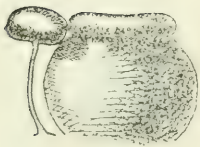
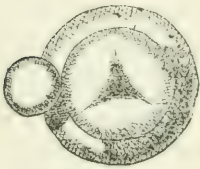


Fig. d.

**Pothos quinquevenosus**, v. A. v. R. — (? *P. Albertisii*, ENGL., forma vel var.).

*Eupothos, Papuani*. — *P. Albertisii* ENGL. affinis. — Foliorum petiolus  $4\frac{1}{2}$ — $7\frac{1}{2}$  cm. longus, apice  $1\frac{1}{2}$ — $2\frac{1}{4}$  cm. latus, truncatus, vix auriculatus, angulis rotundatis, venis collectivis 5 utrinque; lamina ovata, 8—10  $\times$  3—4 cm., ad vel infra medium latissima, basi rotundata vel subtruncato-rotundata, apice sensim acuminata, venis collectivis 5 utrinque, interiore e medio costae nascente. Pedunculus  $\pm 7\frac{1}{2}$  cm. longus, postremo paullo longior. Spatha ovata vel ellipsoideo-oblonga,  $2\frac{1}{2}$ —3  $\times$   $1\frac{1}{2}$  cm., basi rotundata vel rotundato-cuneata, apice sensim acuminata. Spadix sessilis, conoideo-fusiformis, florifer 3— $3\frac{1}{2}$  cm. longus, infra medium 4—5 mm. crassus, apicem obtusiusculum versus sensim paullo attenuatus; baccae in specimine subglobosae vel crasse ovoideae,  $\pm 1$  cm. longae.

New Guinea: near Prauwen Bivak, in swampy forest, alt. 90 m. (H. J. LAM No. 1041, 5 September 1920).

**Pothos papuanus**, BECC., Mal., I, 261, tab. XVI, fig. 5—7; ENGL., in Pflzrch., XXI (IV, 23 B), Arac.-Potoid., 34.

H. J. LAM's No. 955 from Prauwen Bivak, in forest, alt. 80 m., 29 August 1920, which is very probably this species, is distinguished as follows: Internodes, to  $\pm 2$  cm. long. Leaves with the petiole to  $5 \times 1$  cm., the lamina to  $7\frac{1}{2}$ — $12\frac{1}{2} \times 2\frac{1}{2}$ —4 cm. Peduncle to  $7\frac{1}{2}$  cm. long, dark-purple, as are the bracts, when dry dark-brown. Spathe to  $2\frac{1}{2}$  cm. long, dark-purple, greenish, when dry pale-brown. Spadix to  $2\frac{1}{4}$  cm. long, yellow, when dry fuscous.

**Pothos cuspidatus**, V. A. V. R.

*Allopothos, Longevaginati*. — Internodia superiora ramulorum floriferorum  $\frac{3}{4}$ —1 cm. longa, 1 mm. crassa. Foliorum petiolus  $1\frac{1}{2}$ — $2\frac{1}{2}$  cm. longus, longissime angusteque vaginatus; lamina flaccido-coriacea vel chartacea, elliptico-lanceolata,  $\pm 7\frac{1}{2}$ — $12\frac{1}{2} \times 1\frac{1}{2}$ —4 cm., apice in foliis latioribus abrupte, in foliis angustioribus  $\pm$  sensim et longe angusteque subulato-cuspidata, basi in foliis latioribus obtusa, in foliis angustioribus  $\pm$  acute cuneata; venae collectivae 2 utrinque, marginem laminae approximatae. Pedunculus gracilis,  $\pm 1$  cm. longus. Spatha e basi ovata subulato-lanceolata,  $2\frac{1}{2}$ —3 cm. longa, 4—5 mm. lata. Spadix sessilis, oblongus, florifer  $\frac{3}{4}$ —1 cm. longus,  $2\frac{1}{2}$ —3 mm. crassus, obtusus; baccae elongato-obovoideae, 1— $1\frac{1}{4}$  cm. longae,  $\frac{1}{2}$  cm. crassae.

New Guinea: northern slope of mountain ridge near Doorman Summit, alt. 1420 mm. (H. J. LAM No. 1566, 8 August, 1920).

**Pothos ovatifolius**, ENGL., in Pflzrch., XXI (IV, 23 B), Arac.-Pothoid., 40.

Var. **simalurensis**: Internodia 6—10 cm. longa. Foliorum petiolus quam lamina duplo ad triplo brevior, usque 10 cm. longus; lamina late ovata, 9—23  $\times$  9—13 cm., inaequilatera, cuspidata gracillima 5—10 mm. longa instructa, basi cordato-emarginata, interdum late rotundata, venis collectivis 5—7 utrinque. Pedunculus postremo usque 10 cm. longus. Spatha lineari-oblonga, cuspidata inclusa 14 cm. longa, 4 cm. lata, basi rotundato-cuneata, apice obtusa, abrupte gracillime cuspidata, cuspidata 2 cm. longa. Spadix stipite  $\pm 1\frac{1}{2}$  cm. longo suffultus, 8—12 cm. longus; baccae ovoideae vel conoideo-ovoidae,  $\frac{3}{4}$ — $1\frac{1}{2}$  cm. longae,  $\frac{3}{4}$ —1 cm. crassae, virides et rubrae. — Perhaps a distinct species intermediate between *P. ovatifolius* ENGL. and *P. Rumphii* SCHOTT.

Island Simaloer (near north-west coast of Sumatra): Tapoh, Dèfajan, to 15 m. high scandent in swampy forest (ACHMAD No. 1683, 12 February 1920).

**Raphidophora novo-guineensis**, ENGL., in SCHUM., Flor. Kais. Willh-1., 19; Pflzrch., XXXVII (IV, 23 B), Arac.-Monstr., 20, fig. 3.

The typical form of this species is unknown to me. — H. J. LAM's No. 763 (New Guinea, near Pionier Bivak, in forest, alt. 10 m., flowering August 1920) agrees perfectly in aspect (not in the dimensions) with VERSTEEG's No. 330, determined by KRAUSE. It is distinguished from the diagnosis and figure given by ENGLER as follows: Stem to 2 m. high climbing, slender, when dry 3 mm. thick, the internodes 1 — 3 cm. long. Leaves with the petiole to 5 — 7½ cm. long, sheathing commonly somewhat more than half its length, sometimes to the knee which is ½ — 1 cm. long; lamina when dry thinly papyraceous, obovate, to 15 — 21 × 5 — 8 cm., broadest above the middle, somewhat unequal-sided, the apex generally suddenly acutely acuminate, the base acute to bluntly rotundate-cuneate; primary veins 10 — 15 on a side, separated by 5 — 9 secondary, tertiary and quaternary veins that are becoming gradually finer. Spathe broadly ellipsoidal, 1¼ — 1¾ cm. long, hardly mucronulate-apiculate, when fresh pale-yellow on the outer side, white on the inner side. Spadix broadly ellipsoidal-oblong, 1 — 1¼ cm. long, ± half as thick, yellow-white, with the stigmata brown. — Perhaps a distinct species.

**Raphidophora Kunstleri**, HK. F., Flor. Br. I., VI, 546; ENGL. & KRAUSE, in ENGL., Pflzrch., XXXVII (IV, 23 B), 30.

This species is unknown to me. A plant received from Malacca (Perak, Ipoh, I. H. BURKILL No. 6267) under the name of *Rhaphidophora Kunstleri*, which may be this species, is distinguished from the diagnosis given by ENGLER and KRAUSE in having all the dimensions much smaller, the petiole at best 17½ cm. long, when dry densely, minutely puncticulate-asperulous, with the sheath persistent, the lamina 18 — 23 × 4½ — 6½ cm., distinctly unequal-sided, the broadest side ± 1½ × as broad as the other side, when dry beneath densely, minutely puncticulato-asperulous except on the primary veins, the costa beneath asperulous and decidedly short-hairy, the peduncle and spadix smaller.

**Raphidophora parvifolia**, V. A. V. R.

Caudex usque + 4 m. alte scandens. foliis in seriebus 2 oppositis contra substratum appressis; internodia 1 — 2 cm. longa, 2½ — 3 mm. crassa, puncticulis minutissimis, crebris subasperulâ. Foliorum petiolus brevissimus, 2 — 3 mm. longus, paullo ultra basin laminae canaliculatus, sulco margine incrassato; lamina in sicco flaccido-papyracea, glabra, breviter ovata vel interdum breviter subovalis, 3 — 6 × 2 — 3½ cm., basi rotundata vel leviter emarginata, apice obtusa vel obtusiuscula, brevissime decidueque apiculata; costa venae principalesque subtus prominentes; venae primariae secundariaeque numerosae, vix diversae, 1 — 2 mm. distantes, venis tertiariis quaternariisque gracillimis, cum ceteris partim parallelibus, partim anastomosantibus interpositis. Pedunculus pro ratione crassus, 2½ cm. longus. Spatha. . . . Spadix sessilis, conoideo-cylindraceus, florifer 4 cm. longus, supra basin



$\pm \frac{3}{4}$  cm. crassus, fructifer paullo longior, apice  $\pm$  attenuatus; ovaria + 3 mm. longa, 2-locularia, basi compressa, apice in sicco irregularia, in vivo probabiliter plus minusve angulosa, depressa; ovula numerosa, a basi usque ad apicem loculorum affixa; stigma vix elevatum, rotundato-disciforme; baccae aurantiaco-luteae, glutinosae; semina multa, subcurvato-oblonga.

This species is distinguished in having the groove of the petiole, which is somewhat longer than the petiole itself, produced beyond the base of the lamina, along the *under-* (not the *upper-*) side of the costa, close to the underside of one of the halves of the lamina; the thickened margin of the groove consists probably of the persistent base of a very caducous sheath. — It was very difficult to make out the 2-locularity of the ovaries and it was only possible to state, that the ovules are numerous, arranged from the base of the loculi (loculus) to the apex, so that it was also possible that the specimen belonged to a multi-ovulate *Epipremnum*, but in the ripe fruit it was very easy to be seen that the seeds are arranged in opposite rows along both sides of a complete, central dissepiment.

Ternate: Lagoena, in jungle, alt. 280 m. (V. M. A. BEGUIN No. 1259, 21 December 1920).

#### **Raphidophora pallidivenia**, V. A. V. R.

Caudex scandens; internodia  $\pm 7\frac{1}{2}$  cm. longa, primum viridia, demum brunneo-grisea, puncticulis minutissimis, valde numerosis subopaca. Foliorum petiolus 15—30 cm. longus, viridis, copiose, graciliter puncticulatus, supra leviter canaliculatus, usque vel fere usque ad geniculum vaginatus; vagina mox scariosa, dilacerata, decidens; geniculum  $1\frac{1}{2}$ —3 cm. longum, gibbis minutissime puncticuliformibus subasperulum, supra complicato-caniculatum, acute 2-marginatum; lamina in vivo coriacea, lanceolata,  $20\text{--}40 \times 6\text{--}12$  cm., leviter inaequilatera, latere altero  $\pm 1\frac{1}{4}$ -plo latiore, supra laete viridis, perpallide marginata, nitida, valde copiose pallidius puncticulata, subtus pallidior, costa venis primariisque perpallide viridibus; basi rotundato-cuneata, laminarum minorum obtusiuscula, laminarum majorum acutiuscula, in margines geniculi abrupte transiens; costa crassa, supra anguste canaliculata, subtus valde prominens; venae primariae secundariaeque 13—18 utrinque, subaequales,  $\frac{3}{4}$ — $1\frac{1}{2}$ , raro 2 cm. distantes, supra impressae, subtus prominentes, venis tertiariis quaternariisque gracillimis 4—10 interpositis. Pedunculus  $7\frac{1}{2}$ —10 cm. longus, viridis. Spatha mox exsiccata dilacerata, decidens. Spadix sessilis, conoideo-cylindraceus, 6—8 cm. longus,  $1\frac{3}{4}$ —2 cm. crassus, apicem obtusum versus paullo attenuatus; ovaria  $\pm 4$ —5 mm. longa, basi compressa, apice irregulariter 4—6-angulosa, 2—3 mm. crassa, leviter conoidea, subtruncata, perpallide flavido-viridula, subalba; ovaria 4—6 suprema in ovarium unum, valde irregulare, stigmatibus 4—6 coronatum connata; stigma vix elevatum, parvum et subrotundum vel in ovariis inferioribus superioribusque saepe elongatum, brunnescens vel nigro-fuscens; semina numerosa, placentis parietalibus 2, oppositis affixa.

The description is taken from living plants cultivated in the Buitenzorg Gardens, flowering April 1921.

New Guinea: Varenrivier (DJIBDJA).

**Raphidophora drepanophylla**, v. A. v. R.

*R. silvestri* ENGL. affinis. — Caudex ramosus, internodiis 1—5 cm. longis, teretiusculis, in sicco 4—5 mm. crassis. Foliorum petiolus 2—5 cm. longus, antice canaliculatus, plerumque usque ad basin laminae vaginatus; lamina tenuiter flaccido-coriacea, subpapyracea, lanceolata, 6—16 × 2—4 cm., leviter inaequilatera, apicem acuminatum versus plerumque falcata, basi obtusa; venae graciles, primariae interdum crassiusculae. Pedunculus 1—1½ cm. longus. Spatha oblongo-ellipsoidea, 4—5½ cm. longa, acuminata. Spadix breviter stipitatus, oblongus, ± 3 cm. longus, usque 8 mm. crassus, obtusus; ovaria in sicco non distincte prismatica, ± 3 longa, apice plana, 1 mm. crassa; stigma parvum, leviter elevatum.

New Guinea: near Prauwen Bivak, in forest, alt. 100 m. (H. J. LAM No. 1014, 1 September 1920).

**Raphidophora oligosperma**, v. A. v. R.

Caudex usque 15 m. alte scandens, ramis pendulis, internodiis ramulorum floriferorum 1½—2 cm. longis. Foliorum petiolus 7½—12½ cm. longus, antice canaliculatus, usque ad vel ultra basin geniculi ¾—1 cm. longi vaginatus; vagina apicem versus sensim angustata, mox exsiccata, dilacerata, decidens; lamina in sicco tenuiter coriacea, supra obscure viridis, punctis et striolis brevissimis, venis parallelibus munita, lanceolata vel oblanceolata, plus minusve falcata, utrinque subaequaliter angustata, 18—27 × 4—5 cm., inaequilatera, latere altero ± 1½-plo latiore, basi acuta, apice acute acuminata, longiuscule, graciliter apiculata; venae numerosae, erecto-patentes, utrinque prominentes, secundariae quam primariae paullo graciliores, quam tertiariae paullo crassiores. Pedunculus 8—9 cm. longus. Spatha conoideo-fusiformis, 6 cm. longa, 1 cm. ampla, acuminata. Spadix brevissime stipitatus, cylindraceus, florifer 4½ cm. longus, ¾ cm. crassus, demum major; ovaria prismatica, in sicco graciliter, longitudinaliter rugulosa, apice applanata, 4—6-angulosa, in medio leviter depressa; ovula numerosa; stigma sessile, majusculum, rotundatum vel oblongum; baccae in specimine examinato oligospermae.

Ternate: North Foramadiah. in forest, alt. 1000 m. (V. M. A. BEGUIN No. 1457, 5 March 1921).

**Raphidophora obliquata**, v. A. v. R.

*R. Dahlii* ENGL. differt ramis internodiis in sicco gracilioribus, 5 mm. crassis, inferioribus et superioribus 1½—2 cm. longis, ceteris 5—10 cm. longis, foliis petiolo brevioribus, maxime ± 9 cm. longo, lamina plerumque 18—23 × 6½—8 cm. saepe ad vel supra medium latissima, apice obtusiuscule et breviter falcato-acuminata, venis primariis utrinque 6—10, spatha basi

valde oblique affixa,  $\pm 8\frac{1}{2}$  cm. longa, longe et graciliter, abrupte acuminata, spadice stipitato, subfructifero  $\pm 5$  cm. longo, in sicco  $\frac{3}{4}$  cm. crasso, ovariis stigmatibus suboblongo.

New Guinea: near Pionier Bivak, hemiepiphytical in forest, alt. 10 m. (H. J. LAM No. 483, 30 June 1920).

**Raphidophora Beccarii**, ENGL., Pflzrch., XXXVII (IV, 23 B), Arac.-Monster., 46, fig. 20.

A specimen from Pulo Lingga (Resoen, river-side, alt. 40 m, H. A. B. BÜNNEMEIJER No. 6785, 18 July 1919) is distinguished in having but a few sparingly incised leaves and many entire leaves with the petiole sheathing mostly to the base of the knee, the lamina lanceolate or oblanceolate, 6—7 or more commonly 7—9 times as long as broad, 36—42  $\times$  4—7 cm., broadest at or more commonly above the middle, unequal-sided, the broadest side  $1\frac{1}{4}$ — $1\frac{1}{2}$   $\times$  as broad as the narrowest side, the base mostly very acute, the apex rather acutely long-acuminate, the peduncle  $7\frac{1}{2}$ —10 cm. long, the spadix 5— $7\frac{1}{2}$  cm. long,  $\frac{1}{2}$ — $\frac{3}{4}$  cm. thick, pale-green. — Apparently a young though copiously flowering specimen.

**Raphidophora Korthalsii**, SCHOTT, in Ann. Mus. Bot. L. B., I, 129; ENGL. & KRAUSE, in ENGL., Pflzrch., XXXVII (IV, 23 B), Arac.-Monster., 49.

A plant from Sumatra (Karo-plateau, Brastagi, in forest, alt. 1425 m., J. A. LÖRZING No. 6787, 21 July 1919) agrees very much with the Javanese specimens of this species, occurring in the Buitenzorg Herbarium, determined by ENGLER, and the diagnosis given by ENGLER and KRAUSE.

**Raphidophora latifolia**, v. A. v. R.

*R. Korthalsii* SCHOTT affinis sed lamina circiter 2-plo longiore, fere 3-plo latiore, laciniis 10—15 utrinque, 3—9 cm. latis, apice angulo antico acuto, venis secundariis tertiariisque inter venas primarias 5—10; spatha viridis; spadix florifer  $\pm 15$  cm. longus,  $2\frac{1}{2}$  cm. crassus, flavido-viridis, fructifer  $\pm 20$  cm. longus,  $3\frac{1}{4}$  cm. crassus.

New Guinea: near Pionier Bivak, hemiepiphytical in forest (H. J. LAM No. 711, 23 July 1920).

**Schismatoglottis Brooksii**, v. A. v. R.

Caudiculus usque  $\pm 10$  cm. altus, crassiusculus. Foliorum petiolus 10—15 cm. longus,  $\pm$  usque ad medium vaginatus, olivaceus, inter vaginam laminamque subteres, antice  $\pm$  applanatus et anguste roseo-2-marginatus, ceterum brevissime et decidue glanduloso-puberulus; vagina mox marcescens, decidua; lamina herbacea, cordata, 15—20  $\times$  8—12 cm., supra obscure viridis, copiose, minutissime pallide puncticulata, anguste, pallide (albido-) marginata, subtus pallidior, subglauca; lobus anticus breviter acuminatus;

lobi postici majusculi, semiovales,  $2-4 \times 3-6$  cm.; costa, venae primariae secundariaeque subtus brevissime et decidue glanduloso-puberulae; venae primariae secundariaeque copiosae, basales + radiantes, costales sensim ascendentes, omnes apicem versus sursum curvatae, subtus prominentes; venae tertiariae quaternariaeque graciles. Pedunculus crassiusculus, + 4 cm. longus, pallide olivaceus, graciliter, longitudinaliter, pallide ruguloso-striatus, inter strias minutissime roseo-puncticulatus, ad strias brevissime et decidue glanduloso-puberulus. Spathae tubus obconoideo-obovoideus, + 3 cm. longus,  $1\frac{1}{2}$  cm. amplus, viridis, copiose, minutissime roseo-puncticulatus; lamina convoluta conoideo-cylindracea,  $\pm 10$  cm. longa, 1 cm. ampla, pallide flavido-viridis, roseo-marginata, graciliter (indistincte), longitudinaliter olivaceo-striata, inter strias indistincte roseo-puncticulata, apicem versus sensim longiuscule et acute acuminata. Spadix antice brevissime stipitatus, 8-9 cm. longus; inflorescentia feminea cylindraceo-ovoidea, 2 cm. longa, 1 cm. crassa, basi et apice staminodiis paucis, pistilla non vel paullo superantibus, subcapitatis, albis, breviter et crasse viridi-stipitatis munita; ovaria ovoidea, perpallide viridia; stigma crasse pulvinatum, perpallide viride, subalbum; inflorescentia mascula a feminea interstitio conoideo-cylindraceo, 1 cm. longo,  $\frac{1}{2}$  cm. crasso, organis neutris, plano-depressis, albidis vel perpallide roseis, basalibus crebris, ceteris sparsis munito separata, parte basali fertili cylindracea,  $1\frac{1}{2}$  cm. longa,  $\frac{1}{2}$  cm. crassa, perpallide aurantiaco-flavida, staminibus inferioribus sterilibus, in organa neutra transientibus, parte apicali sterili e basi rotundato-truncata conoideo-cylindracea, 4 cm. longa,  $\frac{3}{4}$  cm. crassa, perpallide aurantiaco-rosea, apicem acutiusculum versus attenuata, staminodiis subprismaticis, apice truncatis, irregulariter 4-6-angulosis.

The description is taken from a living specimen cultivated in the Buitenzorg Gardens, flowering January 1922.

Sumatra: Bengkoelen, Lebong Tandai (C. J. BROOKS).

#### **Schismatoglottis parvifolia**, v. A. v. R.

Herba parva, foliis nutantibus vix 10 cm. alta; caudex 2 cm. longus, 1 cm. crassus. Foliorum petiolus 3-5 cm. longus, viridis, ad  $2\frac{1}{2}$ - $3\frac{1}{2}$  cm. longitudinis vaginatus, antice inter vaginam laminamque planiusculus, leviter canaliculatus, 2-marginatus; lamina firmiter herbacea, oblonga,  $8-10 \times 3-4$  cm., paullo inaequilatera, supra obscure viridis, copiose, minutissime albido-puncticulata, subtus pallidior, basi breviter cordata, lobis semiorbicularibus, usque  $\frac{3}{4} \times 1\frac{1}{2}$  cm., apice acuminata, breviter apiculata; venae primariae 6-10 utrinque, prominentes, ascendentes, apicem versus sursum curvatae; venae secundariae quam primariae partim vix, partim valde graciliores; venae tertiariae graciles, omnes venis quaternariis, transversalibus, gracilibus unitae. Pedunculus brevis, 1 cm. longus. Spathae tubus oblique oblongo-ovoideus,  $1\frac{1}{4}$  cm. longus,  $2\frac{2}{3}$ - $\frac{3}{4}$  cm. amplus, viridis; lamina ovoidea, 2 cm. longa, 1 cm. ampla, quam tubus pallidior, breviter,

acute acuminata. Spadix 3 cm. longus; inflorescentia feminea conoidea, in dorso dimidia parte spathae adnata, staminodiis perpaucis, sparsis, quam pistillis paullo longioribus, minute globosis vel capitatis, longe stipitatis, albis munita; ovaria oblongo-ovoidea, viridia, apice leviter contracta; stigma parvum; inflorescentia mascula femineae subcontigua, ellipsoideo-clavata,  $1\frac{1}{2}$  cm. longa,  $3\frac{1}{2}$  mm. crassa, parte basali fertili obconoidea, 9 mm. longa, sordide alba, staminibus apice truncatis, inferioribus sterilibus, elongato-clavatis vel stipitato-globulosis aut -capitulatis, parte apicali sterili semiellipsoidea, eburnea, 6 mm. longa, staminodiis inferioribus apice truncato-rotundatis, irregulariter 4—6-angulosis, ceteris apice rotundatis, apicalibus apice acutiusculis.

The description is taken from a living plant cultivated in the Buitenzorg Gardens.

New Guinea: Mt. Alkmaar (DJIBDJA).

**Schismatoglottis calyptrata** (RXB.) ZOLL. & MOR., Syst. Verz., 83; ENGL. & KRAUSE, in Pflzrch., LV (IV, 23 *Da*), 114. — *Calla calyptrata*, RXB., Flor. Ind., III, 514.

A plant consisting of a single leaf and a single flower, collected in Berhala Island (Sumatra's Eastcoast, in forest, alt.  $\pm$  50 m., J. A. LÖRZING No. 6988, 2 November 1919), which may be a form of this species, differs from the type of this in having the fertile and sterile portions of the masculine inflorescence resupinate, i. e. the lower part sterile, obconical, less than half as long and the upper part fertile, elongate-ellipsoideal, blunt, more than half as long as the whole masculine inflorescence (forma *resupinata*). — The material is too incomplete for the detailed description of an eventually new species.

**Schismatoglottis potamophila**, V. A. V. R.

*Sch. calyptratae* ZOLL. & MOR. affinis. — Foliorum petiolus laminam subaequans (paullo longior vel brevior), + usque ad medium vaginatus; lamina oblonga, 9 — 19  $\times$  4 —  $7\frac{1}{2}$  cm., supra concolor, apice abrupte, breviter, obtusiuscule acuminata, basi in foliis minoribus emarginata, in foliis majoribus cordata; venae primariae 8—12 utrinque. Pedunculus  $\pm$  9 cm. longus. Spadix  $\pm$  4 cm. longus; inflorescentia feminea 2 cm. longa, supra basin contractam cylindracea, 3 mm. crassa, apicem versus sensim sub acute conoidea; ovaria oblonga; stigma parvum; staminodia pauca, longe, graciliter stipitata, apice magno, capitato vel clavato-capitato-pistilla superantia; inflorescentia mascula a feminea interstitio nudo,  $\frac{1}{4}$  cm. longo separata, obconoideo-clavata, parte inferiore sterili obconoidea,  $1\frac{1}{4}$  cm. longa, apice 4 mm. crassa, parte superiore fertili semiellipsoidea,  $\frac{1}{2}$  cm. longa, basi 4 mm. crassa, apice late rotundata, staminodiis apice truncatis, rotundato-angulosis.

New Guinea: near Prauwen Bivak, river bank in forest, alt. 60 m. (H. J. LAM No. 886, 24 August 1920).

**Schismatoglottis angustifolia**, v. A. v. R.

Foliorum petiolus  $7\frac{1}{2}$  —  $12\frac{1}{2}$  cm. longus, vagina 3 —  $4\frac{1}{2}$  cm. longa instructus; lamina in sicco tenuiter papyracea, elongato-cordato-triangularis,  $11 - 19 \times 2\frac{1}{2} - 4$  cm., supra concolor, basi breviter cordata, apice acuminata; venae primariae  $\pm 9 - 11$  utrinque. Pedunculus  $\pm 6 - 7$  cm. longus. Spathae tubus e basi acutissima  $\pm$  urceolata,  $\pm 2\frac{1}{2}$  cm. longa; lamina caduca. Spadix  $\pm 4$  cm. longus; inflorescentia feminea conoideo-fusififormis,  $2\frac{1}{2}$  cm. longa,  $\pm 3 - 4$  mm. crassa,  $\pm$  usque ad medium dorso spathae adnata, apicem laxiflorum versus acutata, staminodiis paucis, quam pistillis  $1\frac{1}{2}$ -plo longioribus. graciliter clavatis, longe et graciliter stipitatis munita; inflorescentia mascula elongato-clavata, apice rotundata, parte basali fertili quam apicali sterili paullo longiore; antherae thecis breviter cupuliformibus; partis sterilis staminodia inferiora apice applanata, superiora apice conoidea, acutiuscula.

New Guinea: near Pionier Bivak, in forest, alt. 10 m. (H. J. LAM No. 710, 23 July 1920).

**Schismatoglottis conversa**, v. A. v. R.

Caudex brevissimus, probabiliter hypogaeus. Foliorum petiolus 30—40 cm. longus, ad tertiam partem usque vel paullo longius vaginatus; lamina in sicco papyracea, ovata,  $16 - 26 \times 8 - 14$  cm., supra quam subtus obscurior, secus costam vitta relative angusta, pallida, margine erosa ornata, basi plus minusve distincte cordato-incisa, lobis posticis semiellipticis vel subsemiorbicularibus,  $\frac{1}{2} - 2\frac{1}{2} \times 2 - 6$  cm., sinu obtusissimo ad acutissimo separatis, lobo antico abrupte vel subabrupte, acute breviterque acuminato; venae primariae 10—15 utrinque, apicem versus sursum curvatae, basales + horizontales, ceterae patentes; venae secundariae quam primariae vix ad valde graciliores; venae tertiariae quaternariaeque graciles, inter se et cum venis ceteris venulis transversalibus gracillimis unitae. Pedunculus 10—15 cm. longus, demum longior. Spatha cylindracea,  $7\frac{1}{2}$  cm. longa, pallide viridis, supra basin acutam  $\frac{1}{2}$  cm., infra apicem acuminatum  $\frac{3}{4}$  cm. ampla, infra medium paullo attenuata. Spadix albus; inflorescentia feminea cylindracea, florifera,  $1\frac{1}{2}$  cm. longa, 3 mm. crassa, a basi usque ad medium cum spatha connata, fructifera  $3\frac{1}{2}$  cm. longa,  $\frac{3}{4}$  cm. crassa, in juventute hic illic staminodiis sparsis, pistilla aequantibus, crasse stipitatis, depresso-globosis (crasse lentiformibus) vel late obconoideis, latitudine crassitudinis ovariorum munita; ovaria breviter et crasse ovoidea; stigma magnum, crasse pulvinatum, latitudine staminodiorum; inflorescentia mascula elongata, parte basali sterili, cylindracea,  $2\frac{1}{4}$  cm. longa, 6 mm. crassa, staminodiis obconoideis vel obpyramidalibus (fere prismaticis), apice applanatis, rotundis vel irregulariter 4—6-angulosis, parte apicali fertili, clavata,  $1\frac{3}{4}$  cm. longa, basi 4 mm., infra apicem rotundatum 6 mm. crassa, thecis staminum cupuliformibus, apice applanatis, impressis a supra conspectis reniformibus, leptodermis, apice minute tuberculiformi connectivi paullo superatis.

The description is taken from specimens with young, not yet entirely developed flowers and ripe berries. It may be possible that this species is identical with *Sch. Wallichii* HK. F. var. *fasciata* RIDL., of which, however, the 1-lined description is too brief and incomplete for determination.

Pulo Lingga: Resoen, road-side, alt. 60 m. (H. A. B. BÜNNEMEIJER No. 6782, 18 July 1919).

***Schismatoglottis bifasciata***, ENGL., in Pflzrch., LV (IV, 23 *Da*), Arac.-Homal.-Schism., 107, fig. 66.

A plant from Borneo (NIEUWENHUIS No. 1311), cultivated in the Buitenzorg Gardens, having flowered August 1921, which may be this species, is distinguished from ENGLER's diagnosis and figure by the following characters: Leaves with the petiole green, sheathing about  $\frac{1}{3}$  its length, terete, the upper side longitudinally rugose, slightly canaliculate towards the apex, the lower side smooth; lamina sagittate-cordate,  $\pm 15-25 \times 7\frac{1}{2}-12\frac{1}{2}$  cm., the 2 bands pale-grey-green or pale-yellow-green, with the base not reaching the margin but suddenly hamato-incurved near the margin, with the point reaching the base of the costa; primary veins less numerous, the secondary ones partly finer than the primary ones, partly nearly as stout; tertiary and quaternary veins distinctly finer. Peduncle green, longitudinally rugulose. Spathe somewhat longer, the tube green, the lamina pale-yellow-green. Spadix longer; feminine inflorescence 3-4 cm. long, 7-8 mm. thick, the lower  $\frac{1}{3}-\frac{1}{2}$  part connected with the spathe; ovaries crowded, cylindraceo-lageniform, dirty-white, the higher, however, lax, oviform, white; stigma about as broad as the ovary, white; staminodes  $\pm 1\frac{1}{2} \times$  as long as the ovaries, white, obconoid, long-stalked, the apex truncate; masculine inflorescence long-fusiform-cylindraceous, 5-5 $\frac{1}{2}$  cm. long, 6-8 mm. thick, the fertile basal portion obconoid, 1 $\frac{1}{2}$ -2 cm. long, pale-brown-yellow, with the lower stamens intermixed with a few oblong or truncate-conical neuter organs, the sterile apical portion bright-yellow, bluntish or rounded at the apex, the staminodes subprismatical, often very irregularly laterally connected.

The spadix preserved in alcohol has the stalks of the lower staminodes, the neuter organs, the filaments and the higher staminodes provided with dark, brown, short stripes or points.

***Schismatoglottis latevaginata***, ENGL., Pflzrch., LV (IV, 23 *Da*), Arac.-Homal.-Schism., 106.

Caudex short, erected. Leaves with the petiole 5-7 $\frac{1}{2}$  cm. long, green, sheathed  $\frac{2}{5}-\frac{3}{5}$  its length, the anterior side flattened or more or less canaliculate and 2-marginate (narrowly winged) beyond the sheath; sheath broad, the apex narrowed on one side, broadly rotundate-truncate on the other side, at length more or less dilacerated; lamina firm-herbaceous,

oblong,  $12\frac{1}{2}$ — $17\frac{1}{2}$  cm. long,  $5$ — $7\frac{1}{2}$  cm. broad, the upper surface dark-green, with a very broad, paler band on each side near the undulated margin, under surface pale-green, subglaucous, the base blunt or somewhat emarginate, the apex acuminate; primary and secondary veins 12—20 on a side, arcuate-ascending, prominent, subequal, separated by finer tertiary ones, all united by very fine, transversal quaternary ones. Peduncle  $\pm 1\frac{1}{2}$  cm. long. Spathe rather thick, suddenly much thickened at the gorge on the inner dorsal side; tube obliquely oblong,  $\pm 2$  cm. long,  $1\frac{1}{2}$  cm. diam., green; lamina cylindraceous,  $\pm 5$  cm. long, pale-green, dark-green-acuminate. Spadix  $\pm 5\frac{1}{2}$  cm. long; feminine inflorescence obliquely conoid,  $\pm 1\frac{1}{2}$  cm. long, 6 mm. thick at the oblique base which is surrounded by a row of whitish, shortly stipitate, broadly obconoid (sublentiform) staminodes; ovaries obovoid-oblong, very irregularly angular or lobed when seen from above, green; higher ovaries apparently sterile, depressed; stigma small, sessile, discoid, round, very pale-green; masculine inflorescence conoideo-fusiform,  $\pm 4$  cm. long, 4 mm. thick above the obconically attenuated base, narrowed gradually towards the bluntish apex; fertile basal portion pale-yellow; stamina truncate and 2-foveolate at the apex; lower stamina sterile, obconoid or shortly stipitate-sublentiform, whitish; sterile apical portion as long as the fertile portion, yellow, the staminodes truncate and irregularly 4—6-angular at the apex.

The description is taken from a living specimen cultivated in the Buitenzorg Gardens.

Borneo. (NIEUWENHUIS No. 1968).

**Scindapsus Beccarii**, ENGL., in Bot. Jahrb., I, 182; in BECC., Mal., I, 277; in Pflzrch., XXXVII (IV, 23 B), Arac.-Monster., 69, fig. 28.

Var. **lingganus**: A forma *typica* differt dimensionibus omnibus minoribus. Foliorum petiolus 6—15 cm. longus, vagina late, decidue scarioso-marginata; lamina oblanceolata  $12$ — $27 \times 4$ — $9$  cm., supra medium latissima; venae numerosae, secundariae, tertiariae quaternariaeque quam primariae sensim graciliores, omnes in sicco  $\pm$  prominentes. Pedunculus usque 5 cm. longus. Spatha usque 6 cm. longa,  $1\frac{1}{2}$  cm. ampla, acuminata, alba. Spadix usque 4 cm. longus, 1 cm. crassus, eburneus. — Lingga Archipelago: Poeloe Singkep, near Manggoe, in forest, alt. 60 m. (H. A. B. BÜNNE-MEIJER No. 7184, 2 August 1919).

**Scindapsus altissimus**, V. A. V. R.

*Sc. cuscuarioides* ENGL. & KR. affinis. — Caudex usque 40 m. alte scandens. Foliorum petiolus 35—50 cm. longus, usque  $1\frac{1}{2}$ — $4\frac{1}{2}$  cm. infra geniculum vaginatus; vagina coriacea, persistens; lamina coriacea, subrotundato-ad ovato-oblonga,  $17$ — $50 \times 9$ — $30$  cm., plus minusve inaequilatera, altero latere maxime fere  $1\frac{1}{2}$ -plo latiore; venae innumerabiles,



subaequales, primariae hinc inde paullo incrassatae. Spatha in specimine conoideo-cylindracea  $\pm$  50 cm. longa. Spadix conoideo-cylindraceus, in specimine 45 cm. longus, 3 cm. crassus, ex schedula usque 47 cm. longus,  $6\frac{1}{2}$  cm. crassus, infra medium crassissimus, apicem acutiusculum versus sensim attenuatus; ovaria apice prismatica, irregulariter 4—6-angulosa, truncata.

New Guinea: near Prauwen Bivak, alt. 210 m. (H. J. LAM No. 1231, 16 September 1920).













