

Flora of Koh Chang.

Contributions to the knowledge of the vegetation in the
Gulf of Siam.

By

Johs. Schmidt.

Part X. (Conclusion.)

(Arranged by **Carl Christensen**)

(**C. B. Clarke**: Ochnaceae. — **E. Gilg**: Loganiaceae. — **F. Pax**: Euphorbiaceae.
L. Radlkofer: Sapindaceae. — **R. Schlechter**: Asclepiadaceae. — **C. H. Ostenfeld**: Various families. — **O. Warburg**: Various families. — **W. G. Craib**: Various families. — Various families determined by different botanists. — **Carl Christensen**: Filices. — Additamenta to the earlier parts. — **Johs. Schmidt**:
Concluding remarks. — Index to genera and new species).

Having received from the botanists who determined the rest of his Siamese collections, the mere names only of the determined specimens, together with descriptions of the new species, Dr. **Johs. Schmidt** asked me to arrange this last part of the "Flora of Koh Chang" in order to bring it into accordance with the scheme followed in the earlier parts. I have quoted **J. Hooker**: Flora of British India throughout, receding from that standard work in nomenclature and delimitation of species only in such cases where the botanist who had determined the species has had a different view.

Since the first parts of "Flora of Koh Chang" were issued (1900-4) not a few important contributions to the Siamese flora have been published; a list of these is to be found in **Craib**: Contributions to the Flora of Siam, Aberdeen University Studies no. 57, 1912,

which paper is a reprint (with additions) of papers published by the author in Kew Bulletin 1911 pp. 7—60 and 385—474, while the second part, containing the Monocotyledones, is published in Kew Bull. 1912, pp. 397—435. In these papers the majority of the species found by Dr. SCHMIDT are listed with references to newer works relating to the flora of Siam and Indo-China, and I have, therefore, found it unnecessary to repeat these references, but have confined myself to quote Craib: Contr. Fl. Siam.

Carl Christensen.

Ochnaceae.

Determined by **C. B. Clarke**, Kew.

Ochna Linné.

1. ***O. Wallichii*** Planch. in Hook. Lond. Journ. Bot. V. 650; Bennett in Hook. Fl. Br. Ind. I. 524; Craib, Contr. Fl. Siam 34.

Koh Chang, on rocks near the sea (no. 627 b); Koh Saket in the littoral zone (no. 335); Koh Chang Noi (no. 698 g).

Area: Burma and Siam.

2. ***O. sp.*** perhaps ***O. parviflora*** Griff. Notul. IV. 464.

Klong Majum on rocks in the jungle.

Gomphia Schreb.

3. ***G. angustifolia*** Vahl, Symb. II. 49; Bennett in Hook. Fl. Br. Ind. I. 525. Klong Majum (no. 600 and 603); Nipple (no. 667 a).

Area: South India, Ceylon, Singapore, Philippines.

4. ***G. Hookeri*** Planch. in Hook. Lond. Journ. Bot. VI. 3; Bennett in Hook. Fl. Br. Ind. I. 525.

Klong Son, in the jungle (no. 665); Klong Majum, river-bank (no. 614).

Area: Penang, Malacca.

Loganiaceae.

Determined by **E. Gilg** — Berlin.

Fagraea Thunbg.

1. **F. auriculata** Jack. Clarke in Hook. Fl. Br. Ind. IV. 83.
Rocky shore at the north end of Koh Kong (no. 354).

Area: Burma to Singapore, Malaya.

2. **F. obovata** Wall. Clarke in Hook. Fl. Br. Ind. IV. 83.
Klong Majum, on rocks in jungle (no. 607 d).

Area: India, Malay Peninsula and Archipelago.

Strychnos L.

3. **S. Schmidtii** Gilg, nov. spec. — Frutex scandens cirrhosus, cirrhis superne valde incrassatis atque involutis, caule ramisque glaberrimis obsolete tetragonis, fuscis. Folia 4—5 mm., longe petiolata, ovata vel ovali-ovata usque ovalia, apice manifeste vel longiuscule latiuscule acutissime acuminata, basi subrotundata vel rarius latissime subcuneata, subchartacea vel chartacea, glaberrima, utrinque nitidula, laevia, supra nigrescentia, subtus fuscescentia, 5—7 cm. longa, 2,5—3,5 cm. lata, nervis 3 vel si mavis 5, sed jugo infimo fere marginali tenuissimo vix conspicuo, jugo superiore valido, sed costa manifeste tenuiore, a basi abeunte et fere usque ad apicem margini stricte subparallelo, costa nervisque supra parce, subtus alte prominentibus, venis paucis laxissime reticulatis supra inconspicuis, subtus parce prominentibus. Flores parvi in cymas axillares pluries dichotomas multifloras densifloras subcapitatas vel pseudoumbelliformes usque ad 1,5 cm. longas dispositi, pedunculo 6—7 mm. longo, pedicellis fere nullis, bracteis bracteolisque ovatis vel ovato-oblongis, acutis, sessilibus usque ad 1 mm. longis, glabris vel hinc inde parcissime brevissime pilosis; sepalis 5 subliberis ovatis vel late ovatis, c. 1 mm. longis, fere idem latis, apice acutiusculis, margine ciliolatis; corollae c. 3 mm. altae, tubus cylindraceus, c. 2 mm. longus, fere idem crassus, lobis 5 ovatis acutis c. 1 mm. longis, fere idem latis, superne valde incrassatis, basi intus corona pilorum elongata densa ornatis; antherae parvae in parte superiore tubi insertae, sessiles; ovarium globosum, stylo brevi crasse filiformi.

Rocks in jungle at Klong Prao (no. 703).

Ich kenne keine Art von *Strychnos*, die mit dieser sehr charakteristische Art als verwandt zu bezeichnen wäre.

4. **S. myrioneura** Gilg, nov. sp. — Frutex scandens cirrhosus, cirrhis superne valde incrassatis atque involutis, caule ramisque obsolete tetragonis glaberrimis, fusco-flavescentibus. Folia 3—4 mm. longe petiolata, oblonga vel saepius ovato-oblonga vel obovato-oblonga, apice breviter late acuminata, apice ipso rotundata, basin versus sensim late vel latissime cuneata vel saepius subrotundata, chartacea vel subcoriacea, glaberrima, utrinque

nitidula, laevia, fuscescentia, 5—8 cm. longa, 3—4 cm. lata, nervis 3 vel si mavis 5, sed jugo infimo fere marginali tenuissimo, jugo superiore valido, sed costa manifeste tenuiore, 2—3 mm. supra laminae basin abeunte et fere usque ad apicem margini stricte subparallelo (superne margini sensim approximato), costa nervisque supra parce, subtus alte prominentibus, venis numerosissimis angustissime reticulatis utrinque subaequaliter alte prominentibus. Flores . . . Fructus globosi, 1,6—2,7 cm. diam., nigrescentes, laeves, pericarpio tenui crustaceo, seminibus paucis (3—4) planis (c. 1 mm. altis), 1,2—1,4 cm. diam., griseis.

Lem Dan (no. 411).

Diese neue Art ist mit *Strychnos laurina* Wall. verwandt.

Euphorbiaceae.

Determined by **F. Pax**, Breslau.

Galeria Zoll. & Moritz.

1. **G. affinis** (R. Br.) Miq. Fl. Ind. Bat. I. II. 430; Hook. Fl. Br. Ind. V. 379.

Jungle at Klong Son (no. 644).

Area: Malacca, Singapore, Siam, Malaya.

Chaetocarpus Thwait.

2. **C. castanocarpus** Thwait.; Hook. Fl. Br. Ind. V. 460; Craib, Contr. Fl. Siam 184.

Jungle near Klong Munsé (no. 440) and near Lem Dan (no. 594 and 834).

Area: Assam, Burma, Indo-China, Malay Peninsula, Ceylon.

Macaranga Thouars.

3. **M. denticulata** (Bl.) Müll. Arg.; Hook. Fl. Br. Ind. V. 446; Craib, Contr. Fl. Siam 194.

Plains at Lem Dan (no. 423 a).

Area: Himalaya, Indo-China, Malaya.

4. **M.** sp. an **M. minutiflora** Müll. Arg.; Hook. Fl. Br. Ind. V. 450?
Plains at Lem Dan (no. 473).

Area of *M. minutiflora*: Burma.

Cleistanthus Hook. f.

5. **C.** sp.?

Edge of jungle on river-bank (no. 795).

Sapindaceae.

Determined by **L. Radlkofer**, Munich.

Cardiospermum Linné.

1. **C. Halicacabum** L. sp. ed. I. 366; Hiern in Hook. Fl. Br. Ind. I. 670; Craib, Contr. Fl. Siam 44. — var. *microspermum*.
Klong Sarlakpet (no. 739 a).

Area: Most tropical and subtropical regions.

Erioglossum Blume.

- E. rubiginosum** Bl.; Craib, Contr. Fl. Siam 46. *E. edule* Bl.; Hiern in Hook. Fl. Br. Ind. I. 672.

Lem Ngob (no. 6); Koh Chang: Klong Munsé (no. 104), Klong Majum (no. 789).

Area: India, Indo-China to N. Australia.

Guioa Cav.

3. **C. pleuropteris** (Bl.) Radlk. Sitzber. math.-phys. Classe Akad. München 1879: 611; *Cupania pleuropteris* Bl.; Hiern in Hook. Fl. Br. Ind. I. 677.

Rocks on sea-shore (no. 627 c).

— forma **apiculata** (Hiern); *Cupania pleuropteris* var. *β. apiculata* Hiern in Hook. Fl. Br. Ind. I. 677.

Klong Munsé, river-bank (no. 244).

Area: Malayan Peninsula, Borneo, Sumatra.

Mischocarpus Blume.

4. **M. sundaicus** Bl. Bijdr. 238; *Cupania Lessertiana* Camb.; Hiern in Hook. Fl. Br. Ind. I. 678.

Klong Prao, river-bank (no. 711).

Area: Burma to Malay Archipelago.

Litchi Sonn.

5. **L. chinensis** Sonn. Voy. Ind. III. 255; *Nephelium Lit-chi* Camb.; Hiern in Hook. Fl. Br. Ind. I. 687.

Plains near Lem Dan, cultivated (no. 117).

Area: S. China, widely cultivated in India.

Nephelium Linné.

6. **N. hypoleucum** Kurz, Journ. As. Soc. Beng. 1871, II. 50; *N. Longana*. Hiern in Hook. Fl. Br. Ind. I. 680.
Lem Dan (no. 507).

Area:

Harpullia Roxb.

7. **H. cupanioides** Roxb. Hort. Beng. 86; Hiern in Hook. Fl. Br. Ind. I. 692; Craib, Contr. Fl. Siam 46.
Koh Kahdat, in the jungle (no. 571).

Area: Indo-China.

Asclepiadaceae.

Determined by **R. Schlechter**, Berlin.

Dischidia R. Br.

1. **D. benghalensis** Coleb.; Hook. Fl. Br. Ind. IV. 50.
Koh Saket, epiphytic in the littoral zone (no. 332).

Area: Himalayas southwards to Malacca, Java, Borneo.

Finlaysonia Wall.

2. **F. obovata** Wall.; Hook. Fl. Br. Ind. IV. 7.
Klung, in the interior of the mangrove (no. 370).

Area: From the Sunderbunds to Malacca.

Gymnanthera R. Br.

3. **G. paludosa** (Bl.) K. Schum. Engl. u. Prantl, Nat-Pflanzenfam.
IV. 2. 213; *Dicerolepsis paludosa* Bl. Mus. Bot. Lugd. Bat. I. 146.
Sea-shore at Klong Son (no. 660).

Area: Java.

Toxocarpus Wight et Arn.

4. **T. siamensis** Schltr. in Fedde: Repert. 3: 307, 1907.

Volubilis, alte scandens; ramis flexuosis elongatis, juvenilibus pilis brevibus rubiginosis reversis strigillosis, demum glabratis, teretibus, distanter foliatis; foliis patulis, anguste oblongo-ellipticis acuminatis, subtus reticulato-nervosis, textura subcoriaceis, juvenilibus subtus rubiginoso-puberulis, demum glabratis, superne glabratis, 10—13 cm. longis, medio fere 4—5,5 cm. latis; inflorescentiis extraaxillaribus laxe cymosis, foliis fere aequilongis, ramulis saepius divaricatis; pedicellis filiformibus 0,5—0,7 cm. longis, tenuiter rubiginoso-strigillosis; calycis segmentis ovatis obtusis, ciliatis, basi tenuiter rubiginoso-strigillosis, 0,2 cm. longis; corolla alte 5-fida 0,5—0,6 cm. longa, lobis tubo duplo longioribus e basi lanceolata linearilongatis obtusis, intus fauce puberulis; coronae foliolis carnosulis lanceolatis obtusiusculis, antheris paulo brevioribus: stigmatibus capite fusiformi-cylindrico obtuso antheras duplo excedente glabro, corollae tubum haud excedente.

Klong Sarlakpet (no. 725).

Infolge ihrer schlanken Infloreszenzen muss diese Art neben *T. gracilis* Dene. von den Philippinen untergebracht werden. Sie ist infolge der kleineren Blüten und längeren Infloreszenzen unschwer zu erkennen.

Tylophora R. Br.

5. **T. asthmatica** (Willd.) Wight et Arn.; Hook. Fl. Br. Ind. IV. 45; Craib, Contr. Fl. Siam 133.

Koh Kahdät, littoral zone (no. 570).

Area: India, Burma, Malay Archipelago.

6. **T. Schmidtii** Schltr. in Fedde: Repert. sp. nov. 3: 315, 1907.

Gracillima, flexuosa, alte scandens; ramis filiformibus, teretibus glabris, laxe foliatis; foliis patentibus patulisve, oblongo-lanceolatis acuminatis, nervo medio marginibusque tenuissime ciliatis, caeterum glabris, 2—3 cm. longis, medio fere 0,8—1 cm. latis, petiolo semitereti minute puberulo, c. 0,5 cm. longo; cymis gracillimis perlaxis, ramosis, folia multo excedentibus, ramis divaricatis; floribus illis *T. tenuis* Bl. fere aequimagnis, ut videtur violaceis; pedicellis filiformibus, c. 2 cm. longis, glabris; calycis segmentis lanceolatis acutis, 0,1 cm. longis, pilis sparsis ornatis; corollae rotatae alte 5-fidae lobis oblongis obtusis, 0,2 cm. longis, medio vix 0,1 cm. latis; coronae foliolis abbreviatis, gynostegio duplo brevioribus, carnosulis, triangulis obtusis; antheris subquadratis, appendice hyalino rotundato obtusissimo, in stigmatibus caput impresso; pollinibus minutissimis oblongis utrinque obtusis, translatoribus brevibus, retinaculo rotundato-oblongo pollinibus bene majore; stigmatibus capite depresso.

Klong Sarlakpet, scandent at river-bank (no. 727).

Eine sehr zierliche Art, welche an *Tylophora tenuis* Bl. erinnert. Sie ist gekennzeichnet durch die breiten einander sich fest berührenden, kurzen Coronaschuppen und die im Verhältnis zu den Pollinien auffallend grossen Klemmkörper.

Hoya R. Br.

7. **H. parasitica** (Roxb.) Wall.; Hook. Fl. Br. Ind. IV. 57; Craib, Contr. Fl. Siam 134.

Lem Dan, mangrove, on *Bruguiera* (no. 138).

Area: India, Burma, Malay Peninsula.

8. **H.** sp.

A specimen (no. 168) was collected in the littoral jungle N. of Lem Dan, growing epiphytically on *Heptapleurum venulosum* (W. et A.) Seem.; another on rocks at Klong Majum (no. 607 b).

Various families.

Determined by **C. H. Ostenfeld**, Copenhagen.

Liliaceae.

Peliosanthes Andr.

1. **P. violacea** Wall.; Hook. Fl. Br. Ind. VI. 266.
On rocks at Klong Majum (no. 607).

Area: Eastern Himalaya, Burma.

Dracaena L.

- 2.? **D. Helferiana** Wall.; Hook. Fl. Br. Ind. VI. 330.
Lem Dan (no. 202).

Area: Burma.

Cordyline Commers.

3. **C. terminalis** Kunth, var. **ferrea** (L.) Bak.; Hook. Fl. Br. Ind. VI. 331.
Lem Dan (no. 317).

Area: India to Malacca and eastwards to Polynesia.

Gloriosa L.

4. **G. superba** L.; Hook. Fl. Br. Ind. VI. 358.
Lem Ngob, in the jungle (no. 52).

Area: India to Ceylon and Malacca, Indo-China, tropical Africa.

Araliaceae.

Heptapleurum Gaertn.

- H. venulosum** (W. et A.) Seem.; Clarke in Hook. Fl. Br. Ind. II. 729.
Jungle in the littoral zone, Lem Dan (no. 77 and 165), Koh Saket
(no. 343), Koh Kahdat (no. 814).

Area: Subtropical and tropical Asia to tropical Australia.

Basellaceae.

Basella L.

- B. alba** L.; *B. rubra* L.; Hook. Fl. Br. Ind. V. 20.
Klong Sarlakpet (no. 739 bis).

Area: Tropical Asia and Africa.

Amarantaceae.

Achyranthes L.

A. aspera L.

Lem Ngob (no. 39); a weed.

Area: Tropics.

Piperaceae.

Piper L.

1. **P. nigrum** L.; Hook. Fl. Br. Ind. V. 90.

Cultivated at Lem Dan (no. 216).

Area: A native of India, widely cultivated in the tropics.

2. **P.** sp.

Without locality (no. 868).

Peperomia L.

3. **P. pellucida** (L.) Kunth.

Lem Dan (no. 483).

Area: Tropical America and Africa. No doubt introduced in Siam.

Casuarinaceae.

Casuarina Forst.

C. equisetifolia Forst.; Hook. Fl. Br. Ind. V. 598.

Sandy sea-shore at Klong Prao (no. 892) and Koh Kahdat (no. 322).

Area: India, Malaya, Australia, Polynesia.

Various families.

Determined by **O. Warburg**, Berlin.

Capparidaceae.

Pedicellaria Schrank.

1. **P.** (*Gynandropsis*) **pentaphylla** (D. C.) Schrank; *Gynandropsis pentaphylla* D. C. Prodr. I. 238; Hook. Fl. Br. Ind. I. 171; Craib, Contr. Fl. Siam II.

Klong Sarlakpet (no. 869).

Area: Common in Tropics.

Crataeva Linné.

2. **C. Roxburghii** R. Br.; *C. religiosa* var. 2. *Roxburghii* Hook. Fl. Br. Ind. I. 172.

Jungle near Lem Dan (no. 593).

Area: India.

Capparis Linné.

3. **C. micracantha** D. C.; Hook. Fl. Br. Ind. I. 179; Craib, Contr. Fl. Siam 12.

Koh Saket (no. 339).

Area: Burma, Cambodia, Malaya, Philippines.

4. **C. sepiaria** L.; Hook. Fl. Br. Ind. I. 177; Craib, Contr. Fl. Siam 12.

Koh Lam, sandy sea-shore (no. 871).

Area: India, Malaya, Philippines.

Aizoaceae.

Sesuvium Linné.

1. **S. portulacastrum** L.; Clarke in Hook. Fl. Br. Ind. II. 659.

Sandy sea-shore at Klung opposite Koh Chick (no. 380).

Area: Tropical and subtropical sea-shores.

Mollugo Linné.

2. **M. stricta** L.; Clarke in Hook. Fl. Br. Ind. II. 663.

Edge of jungle near Lem Dan (no. 285).

Area: Japan, China, India to Malacca, Fiji.

Portulacaceae.

Portulaca L.

P. oleracea L.; Dyer in Hook. Fl. Br. Ind. I. 246; Craib, Contr. Fl. Siam 15.

Lem Dan (no. 22 and 817).

Area: All warm countries.

Malvaceae.

Sida Linné.

1. **S. acuta** Burm.; Craib, Contr. Fl. Siam 20; *S. carpinifolia* L.; Masters in Hook. Fl. Br. Ind. I. 323.

Lem Ngob, edge of jungle (no. 32).

Area: S. E. Asia.

2. **S. rhombifolia** L.; Masters in Hook. Fl. Br. Ind. I. 323.

Plains near Lem Dan (no. 203).

Area: Tropics of both hemispheres.

Abutilon Gaertn.

3. **A. indicus** Don, Gen. Syst. I. 504; Masters in Hook. Fl. Br. Ind. I. 326; Craib, Contr. Fl. Siam 21.

Plains near Lem Dan (no. 304). Lem Ngob, edge of jungle (no. 49).

Area: Tropics.

Urena Linné.

4. **U. lobata** L.; Masters in Hook. Fl. Br. Ind. I. 329.

Plains near Lem Dan (no. 156).

Area: Tropics.

Hibiscus Medik.

5. **H. surattensis** L.; Masters in Hook. Fl. Br. Ind. I. 334; Craib, Contr. Fl. Siam 23.

Mainland opposite Koh Kong, on sandy soil (no. 358).

Area: Tropics of Asia, Australia and Africa.

6. **H. rosa sinensis** L.; Masters in Hook. Fl. Br. Ind. I. 344; Craib, Contr. Fl. Siam 22.

Rather commonly cultivated, Lem Dan (no. 310).

Area: Tropics, often cultivated.

7. **H. tiliaceus** L.; Masters in Hook. Fl. Br. Ind. I. 343.

Lem Dan, at sea-shore (no. 114), "ton baa" of the Siamese.

Area: Tropics of both hemispheres.

Abelmoschus Moench.

8. **A. moschatus** Moench; Wight, Ic. t. 399; *Hibiscus Abelmoschus* L.; Masters in Hook. Fl. Br. Ind. I. 342; Craib, Contr. Fl. Siam 22. Lem Ngob, edge of jungle (no. 31).

Area: India, Cultivated in most tropical countries.

Thespesia Corr.

9. **T. populnea** Corr. Ann. Mus. IX. 290; Masters in Hook. Fl. Br. Ind. I. 345; Craib, Contr. Fl. Siam 23. Koh Chang, littoral jungle near Lem Dan (no. 181); Koh Kahdat, sandy sea-shore (no. 552f).

Area: Tropical Africa, Asia and Polynesia.

Gossypium Linné.

10. **G. barbadense** L.; Masters in Hook. Fl. Br. Ind. I. 347. Plains near Lem Dan (no. 112).

Area: Cultivated in tropics and subtropics.

Bombaceae.**Ceiba** Medic.

C. pentandra (L.) Gaertn.; *Eriodendron anfractuosum* DC.; Masters in Hook. Fl. Br. Ind. I. 350.

Lem Dan (no. 113 and 886), generally cultivated, "ton noon" of the Siamese.

Area: Trop. America, Asia and Africa (?).

Sterculiaceae.**Helicteres** Linné.

1. **H. spicata** Colebr.; Masters in Hook. Fl. Br. Ind. I. 366. Klung Majum (no. 91).

Area: From Sikkim to Penang, Malaya.

Pentapetes Linné.

2. **P. phoenicea** L.; Masters in Hook. Fl. Br. Ind. I. 371. In the mangrove near Lem Dan (no. 739b).

Area: India.

Oxalidaceae.**Averrhoa** L.

A. carambola L.; Hook. Fl. Br. Ind. I. 439. Plains at Lem Dan (no. 407).

Area: India, a garden-plant. Native country unknown.

Rutaceae.

Glycosmis Correa.

1. *G. cochinchinensis* (Lour.) Pierre, Fl. Indo-Chine I. 653; Craib, Contr. Fl. Siam 32. *G. pentaphylla* Correa; Hook. Fl. Br. Ind. I. 499.
In the jungle, Klong Majum (no. 601), Klong Munsé (no. 468); Koh Kahdat (no. 872).

Area: India, Malaya, Australia.

2. *G. sapindoides* Lindl.; Hook. Fl. Br. Ind. I. 501.

Klung (mainland opposite Koh Chik) (no. 377); Koh Kahdat, sandy sea-shore (no. 547).

Area: Penang, Java.

Clausena Burm.

3. *C. excavata* Burm. Fl. Ind. 87; Hook. Fl. Br. Ind. I. 504; Craib, Contr. Fl. Siam 33.

Jungle near Lem Dan (no. 694).

Area: From E. Himalaya and Yunnan to Malaya and Philippines.

Citrus Linn.

4. *C. medica* L.; Hook. Fl. Br. Ind. I. 514.

Lem Dan (no. 508).

Area: India.

5. *C. hystrix* DC. Prodr. I. 539; Hook. Fl. Br. Ind. I. 515.
Islet N. of Koh Kahdat (no. 582a).

Area: Khasia Mts.

Aegle Correa (det. C. H. OSTENFELD).

6. *A. marmelos* (L.) Correa; Hook. Fl. Br. Ind. I. 516; Craib, Contr. Fl. Siam 33.

Without locality.

Area: India, Assam, Java.

Rhamnaceae.

Zizyphus Juss.

1. *Z. oenoplia* (L.) Mill.; Lawson in Hook. Fl. Br. Ind. I. 634; Craib, Contr. Fl. Siam 40.

Lem Ngob, edge of jungle (no. 10); plains at Lem Dan (no. .

Area: Tropical Asia and Australia.

An indeterminable species of *Zizyphus* was growing in the jungle at Lem Dan (no. 533), a very tall tree.

Colubrina Rich.

2. *C. asiatica* (Lam.) Brongn.; Lawson in Hook. Fl. Br. Ind. I. 642; Craib, Contr. Fl. Siam 40.

Koh Kahdat in the littoral jungle (no. 805) and on sandy sea-shore (no. 549 and 560 a).

Area: Tropical Asia, Australia and Africa.

Onagraceae.

Jussiaea L.

J. suffruticosa L.; Clarke in Hook. Fl. Br. Ind. II. 587; Craib, Contr. Fl. Siam 91.

Rice-field north of Lem Dan (no. 238).

Area: Tropics.

Caricaceae.

Carica Linn.

C. papaya L.; Craib, Contr. Fl. Siam 93.
Lem Dan, cultivated (no. 265).

Area: Cultivated throughout India.

Goodeniaceae.

Scaevola L.

S. Koenigii Vahl; Clarke in Hook. Fl. Br. Ind. III. 421.

Rocky sea-shore at Koh Kong (no. 352); Cape Liant (no. 832).

Area: Tropical E. Asia, Australia, Polynesia.

Plumbaginaceae.

Plumbago L.

P. zeylanica L.; Clarke in Hook. Fl. Br. Ind. III. 480; Craib, Contr. Fl. Siam 122.

Plains at Lem Dan (no. 415).

Area: Tropics.

Pedaliaceae.

Sesamum L.

S. indicum DC.; Clarke in Hook. Fl. Br. Ind. IV. 387; Craib, Contr. Fl. Siam 151.

Klong Sarlakpet (no. 734), a weed.

Area: Tropics, often cultivated.

Flagellariaceae.

Flagellaria L.

F. indica L.; Hook. Fl. Br. Ind. VI. 391.

Klong Prao, river-bank (no. 713).

Area: Tropical Asia and Africa.

Various families.

Determined by **W. G. Craib**, Kew.

Anonaceae.

Artabotrys R. Brown.

1. **A. Harmandii** Finet et Gagnepain, Bull. Soc. France LIII, Mém. IV. 102 (1906), *var. foliis parum majoribus*.
Klong Son, in the jungle (no. 638).
Area: Cambodia.

Polyalthia Blume.

2. **P. suberosa** (Roxb.) Benth. et Hook. f., Fl. Br. Ind. I. 65.
Klung, dry jungle (no. 371).
Area: India, Ceylon, Burma, Java.
3. **P. sp.** (vel forsan *Disepalum* sp.)
Klong Majum, tall tree in the jungle (no. 602).

Anaxagorea St. Hilaire.

4. **A. luzonensis** A. Gray, Hook. Fl. Br. Ind. I. 68.
Koh Kahdat (no. 552).
Area: Ceylon, Andamans, Burma, Malacca, Philippines.

Melodorum Dunal.

5. **M. latifolium** (Bl.) Dunal; Hook. Fl. Br. Ind. I. 79.
Plains at Lem Dan (no. 218).
Area: Malacca, Malaya, Philippines.

Sageraea Dalz.

6. **S. elliptica** Hook. f. et Th., Fl. Ind. I. 93; *Bocagea elliptica* Hook. Fl. Br. Ind. I. 92.
Jungle at Lem Dan (no. 459 and 532b).
Area: Burma to Malacca.
7. **Uvaria** sp.
Jungle at Klong Munsé (no. 587).

Menispermaceae.

Tiliacora Colebr.

1. **T. triandra** (Roxb.) Diels; Craib, Contr. Fl. Siam 9; *Limasia triandra* Miers, Hook. Fl. Br. Ind. I. 100.

Plains near Lem Dan (no. 500); jungle at Klong Munsé (no. 472); plains at Klong Son (no. 656 a).

Area: Indo-China-Malay Peninsula.

Cocculus DC.

2. **C. sarmentosus** Diels in Engl. Pflanzenreich, Menisperm. 233; Craib, Contr. Fl. Siam 10.

Sandy sea-shore at Lem Ngob (no. 364) and Koh Kahdat (no. 555).

Area: E. Asia, Mascarene Isl.

3. **Tinospora** sp.; conf. V. A. Poulsen in Vid. Medd. Naturh. For. 1902, 235 (det. V. A. Poulsen).

Lem Dan, liana in the jungle.

4. **T.** sp.

Koh Kahdat, jungle (no. 564).

Violaceae.

Alsodeia sp. forsan sp. nov., sed floribus deficientibus.

A smaller tree growing at Klong Majum (no. 619 d).

Guttiferae.

Garcinia Linné.

1. **G. Hanburyi** Hook. f., Journ. Linn. Soc. XIV. 485.

Jungle at Lem Dan (no. 438), "ton rong" of the Siamese.

Area: Malaya.

2. **G. Loureiri** Pierre, Fl. For. Cochinchine t. 66.

Jungle at Lem Dan (no. 624).

Area: Cochinchina.

3. **G. merguensis** Wight; Anders. in Hook. Fl. Br. Ind. I. 267; Craib, Contr. Fl. Siam 16.

Klong Majum, on rocks at river-bank (no. 613).

Area: Burma, Malacca, Cambodia.

4. **G. nigro-lineata** Planch.; Anders. in Hook. Fl. Br. Ind. I. 263.

Jungle at Klong Majum (no. 599) and Klong Son (no. 647 a).

Area: Malacca.

Calophyllum Linné.

5. **C. inophyllum** L.; Anders. in Hook. Fl. Br. Ind. I. 273; Craib, Contr. Fl. Siam 16.

Koh Kahdat, sandy shore (no. 546).

Area: China, India, Indo-China, Malaya.

6. **C. saigonense** Pierre, Fl. For. Cochinchine t. 105.
Jungle, alt. 1200 ft. (no. 668).

Area: Cochinchina.

7. **C. sp.**

Jungle at Klong Munsé (no. 528) and Klong Majum (no. 603 a).

Ternstroemiaceae.

Ternstroemia Linné.

1. **T. Wallichiana** (Griff.); *T. penangiana* Choisy; Dyer in Hook. Fl. Br. Ind. I. 281.

Jungle at Lem Dan (no. 523), and at Klong Majum (no. 615).

Area: Burma to Malacca, Java.

Adinandra Jack.

2. **A. integerrima** (Wall.) T. Anders. et Dyer in Hook. Fl. Br. Ind. I. 282; Craib, Contr. Fl. Siam 17.

Klong Majum, river-bank in jungle (no. 617).

Area: Yunnan, Cambodia, Malay Peninsula.

Eurya Thunbg.

3. **E. japonica** Thbg. var. **nitida** Korth.; Dyer in Hook. Fl. Br. Ind. I. 17; Craib, Contr. Fl. Siam 17.

Plains at Lem Dan (no. 292); jungle at Klong Majum (no. 601 a and 616 b), at Klung Munsé (no. 836).

Area: India, Indo-China, Malay Archipelago.

Schima Reinw.

4. **S. Noronhae** Reinw. et Bl. Bijdr. 130.

Jungle near Klong Munsé (no. 66); Klong Sarlakpet (870).

Area: Malaya.

Meliaceae.

Chisocheton Blume.

1. **C. divergens** Bl. var. **robusta** Valetton; Craib, Contr. Fl. Siam 36.
Jungle at Lem Dan (no. 478).

Area of the species: Java; the variety was introduced to Buitenzorg Gardens from Siam.

Aglaiia Lour.

2. **A. odorata** Lour.; Hiern in Hook. Fl. Br. Ind. I. 554; Craib, Contr. Fl. Siam 36.

Koh Kahdat, sandy sea-shore (no. 559) and jungle (no. 810). No. 875 from the same island is perhaps the same.

Area: China to Malaya, often cultivated.

Walsura Roxb.

3. **W. robusta** Roxb., Hiern in Hook. Fl. Br. Ind. I. 565; Craib, Contr. Fl. Siam 36.

Lem Dan (no. 833).

Area: Indo-China.

Xylocarpus Koenig (det. JOHS. SCHMIDT).

4. **X. granatum** Koenig; Johs. Schmidt, Bot. Tidsskr. XXVI, 68; *Carapa moluccensis* Roemer; Hiern in Hook. Fl. Br. Ind. I. 567.

Mangrove of Lem Ngob (no. 36). Common in the mangroves.

Area: Mangroves of tropical Africa, Asia and Australia.

5. **X. obovatus** (Bl.) A. Juss. Mém. Mus. Paris XIX. 244; Harms in Engler u. Prantl, Nat. Pflanzenfam. III⁴. 278 f. 157; Johs. Schmidt, Bot. Tidsskr. XXVI, 68.

With the mangroves; seems to be less common than the preceding.

Area: As the preceding.

Olacaceae.**Ximenia** Linné.

1. **X. americana** Willd., Masters in Hook. Fl. Br. Ind. I. 574. Koh Kahdat, littoral jungle (no. 575).

Area: Tropical America, Africa and Asia.

Olax Linné.

2. **O. scandens** Roxb.; Masters in Hook. Fl. Br. Ind. I. 575; Craib, Contr. Fl. Siam 37. *Forma nervis paulo conspicioribus*.

Koh Saket, littoral zone (no. 342).

Area: China, India, Burma, Java.

3. **Opilia?** sp.

Klong Prao, river-bank (no. 711).

4. **Gonocaryum** sp.

Klong Son, river-bank (no. 686).

Ampelidaceae (Vitaceae).**Cissus** Linné.

1. **C. discolor** Bl. Bijdr. 181; Craib, Contr. Fl. Siam 42; *Vitis discolor* Dalz.; Lawson in Hook. Fl. Br. Ind. I. 647.

Jungle at Klong Son (no. 647).

Area: India, Assam to Malaya.

Ampelocissus Planchon.

2. **A. arachnoidea** (Hassk.) Planchon in DC. Mon. V. 375.
Koh Chang Noi, sandy sea-shore (no. 698).

Area: Java.

3. **A. polythyrsa** (Miq.) Gagnep. in Lecomte, Fl. gén. de l'Indo-Chine I. 990?

Jungle at Klong Munsé (no. 396).

Area: Indo-China, Malay Peninsula, Sumatra, Borneo.

Leea Linné.

4. **L. sambucina** Willd.; Lawson in Hook. Fl. Br. Ind. I. 667.
Edge of jungle at Lem Dan (no. 388); river-bank at Klong Son (no. 636).

Area: Tropical Asia from China to Australia.

5. **Tetrastigma** sp.

Liana in jungle near Lem Dan (no. 409); Koh Kahdat (no. 579f).

Anacardiaceae.**Mangifera** Linné.

1. **M. siamensis**, Warbg. *mss.*, sp. nov., *M. reba*, Pierre facie similis sed foliis acumine graciliore instructis distinguenda.

Ramuli primo puberuli, mox glabri, angulati, cortice stramineo vel fusco-stramineo pauci-lenticellato obtecti. *Folia* lanceolata ad oblonga, apice acute acuminata, basi cuneata, 11—19 cm. longa, 2,9—5,1 cm. lata, coriacea, glabra, nervis lateralibus utrinque 16—22 supra conspicuis subtus prominentibus, nervulis supra conspicuis subtus uti reticulacione prominulis, margine recurva, petiolo ad 2,7 cm. longo suffulta. *Paniculae* sessiles, ad 14 cm. longae, rhachi ramulisque fuscis parcius puberulis; bracteeae 1,5 mm. longae, acutae. *Sepala* 2 mm. longa, 1,5 mm. lata, dorso parce breviter pubescentia. *Petala* quinque, oblonga vel oblongo-lanceolata, 2,75 mm. longa, 1,5 mm. lata, jugis tribus basi confluentibus apice haud excurrentibus. *Stamen* solitarium, filamentum vix 1 mm. longo, anthera vix 0,75 mm. longa. *Discus* conspicuus, 5-lobatus, minute arctique tuberculatus. *Ovarium* 0,75 mm. altum, glabrum, stylo 1,5 mm. longo. (Graib descripsit.)

Koh Chang, Klung, *Schmidt*, 374! Fruits edible; perhaps cultivated.

This proposed new species is very close indeed as regards habit to *M. reba* but unfortunately the writer has found no description of that species. From *M. indica*, to some of the forms of which it is rather similar, it differs in the solitary stamen and the entire absence of staminodes.

Buchanania Roxb.

2. **B. florida** Schauers, Nova Acta XIX, Suppl. I. 481.

Jungle at Lem Dan (no. 526 and 623a).

Area: Malaya.

Odina Roxb.

3. **O. Wodier** Roxb., Hook. Fl. Br. Ind. II. 29; Craib, Contr. Fl. Siam 48. Plains at Lem Dan (no. 297); N. end of Koh Chang on rocks (no. 628).
Area: India, Burma, Malaya.

Myrtaceae.**Melaleuca** Linné.

1. **M. leucadendron** L.; Duthie in Hook. Fl. Br. Ind. II. 465. Klong Son, near the sea (no. 658). "ton samit" of the Siamese.
Area: Burma-Malay Islands, Australia.

Psidium Linné.

2. **P. guayava** L.; Duthie in Hook. Fl. Br. Ind. II. 468; Craib, Contr. Fl. Siam 84.
Lem Dan, cultivated (no. 386 and 623 e).
Area: Naturalised throughout India and Indo-China.

Eugenia Linné.

3. **E. cymosa** Lam.; Duthie in Hook. Fl. Br. Ind. II. 482; Craib, Contr. Fl. Siam 84.
Jungle at Lem Dan (no. 419); Nipple, alt. 2000 ft. (no. 669).
Area: Assam, Burma, Malaya.
4. **E. grandis** Wight, Ill. II. 17; Duthie in Hook. Fl. Br. Ind. II. 475. Jungle at Klong Munsé (no. 418).
Area: From Himalaya to Malaya.
5. **E. grata** Wight; Duthie in Hook. Fl. Br. Ind. II. 486; Craib, Contr. Fl. Siam 84.
Littoral at Lem Dan (no. 263); Klong Sarlakpet, inner edge of mangrove (no. 726 e).
Area: From Assam (China?) to Malaya.
6. **E. javanica** Lam.; Duthie in Hook. Fl. Br. Ind. II. 474. Klung (no. 373).
Area: Malacca, Andaman and Nicobar Islands, Malaya.
7. **E. lineata** (Bl.) Duthie in Hook. Fl. Br. Ind. II. 487. *Myrtus lineatus* Bl. Jungle at Klong Munsé (no. 293 and 591 a); Klong Son, river-bank in jungle (no. 822).
Area: Malacca, Penang, Malaya.
8. **E. oblata** Roxb.; Duthie in Hook. Fl. Br. Ind. II. 492; Craib, Contr. Fl. Siam 85.
River-bank near Lem Dan (no. 255); plains at Lem Dan (no. 410).
Area: Assam to Malay Peninsula.

9. **E. operculata** Roxb.; Duthie in Hook. Fl. Br. Ind. II. 498.
Jungle at Klong Munsé, river-bank (no. 588).
Area: S. China, India, Indo-China and Malaya.
10. **E. polyantha** Wight; Duthie in Hook. Fl. Br. Ind. II. 496.
Klong Son, river-bank in jungle (no. 691 e).
Area: Burma, Java.
11. **E. siamensis** Craib, Kew Bull. 1912: 153, Contr. Fl. Siam 85.
Jungle at Klong Munsé (no. 391, 445, 593 c); Klong Majum, near outlet (no. 614).
Area: Siam.
12. **E. sp.** near **E. xanthocarpa** Thw.
Koh Chang Noi (no. 698 d).

Barringtonia Forst.

13. **B. serrata** Miq. Fl. Ind. Bat. I. 488.
Plains at Lem Dan (no. 187).
Area: Java.
14. **B. sp.** conf. **B. angusta** Kurz.
S. W. of Sarlak (no. 726 b).
15. **B. Schmidtii**, Warbg. mss., ramulis junioribus rhachique spicarum longarum ferrugineo- vel brunneo-ferrugineo-tomentosis distinguenda.
Ramuli primo densius ferrugineo- vel brunneo-ferrugineo-tomentelli, mox puberuli, dein omnino glabri. *Folia* oblanceolata vel obovato-oblanceolata, apice acute acuminata, basi in petiolum attenuata, 8—17 cm. longa, 2,8—6 cm. lata, chartacea, glabra, subtus pallidiora, nervis lateralibus utrinque 12—14 supra conspicuis subtus prominentibus, nervulis supra conspicuis subtus prominulis, serrulata, petiolo ad 7 mm. longo suffulta. *Spicae* ad 42 cm. longae, pedunculo communi vix 2 cm. longo ut rhachi ramulisque juvenilibus tomentoso suffultae; bractaeae mox reflexae, circiter 4 mm. longae, dorso ut rhachis tomentosae. *Receptaculum* 2 mm. altum, apice vix 3 mm. diametro, indumento ut in rhachi tectum. *Calycis* segmenta 2 mm. longa, 2,75 mm. lata, imbricata, pilis brevibus crassiusculis ciliata, intra glabra. *Petala* circiter 4 mm. longa et 4,5 mm. lata, ciliolata. *Filamenta* inferne connata. (Craib descripsit).
Koh Chang, plains at Lem Dan, *Schmidt*, 186 (Type!), 110; 689 a (specimina sterilia, foliis usque ad 24 cm. longis et 10,3 cm. latis); 29 (verosim. varietas tantum *B. Schmidtii*, foliis floribusque paulo majoribus).

Cordiaceae.

Cordia L.

- C. subcordata** Lam.; Clarke in Hook. Fl. Br. Ind. IV. 140; Craib, Contr. Fl. Siam 128.
Sandy sea-shore on Koh Kahdat (no. 543).
Area: Tropical Asia, Australia and E. Africa.

Ebenaceae.

Maba J. R. et G. Forst.

1. **M. buxifolia** Pers.; Clarke in Hook. Fl. Br. Ind. III. 551; Craib, Contr. Fl. Siam 125.

Outlet of Koh Majum (no. 536).

Area: S. E. Asia, Australia, Tropical Africa.

Diospyros Linné.

2. **D. Schmidtii**, Craib, sp. n., calyce fructescente parvo quadrato distinguenda.

Ramuli primo adpresse ferrugineo-pubescentes, mox glabri, cortice fusco vel brunneo obiecti. *Folia* lanceolata vel angustius oblonga, apice obtuse acuminata, basi cuneata vel late cuneata, ad 13,5 cm. longa et 4,4 cm. lata, coriacea vel tenuiter coriacea, pagina inferiore pilis brunneis inconspicuis adpressis hic illic sed costa densius instructa, superiore glabra, nervis lateralibus utrinque circiter 10 intra marginem anastomosantibus supra subconspicuis vel fere obscuris subtus plerumque prominulis sed interdum subobscuris, costa supra immersa, petiolo ad 1,3 cm. longo supra canaliculato suffulta. *Fl.* ♂: *Calyx* 3,5 mm. longus, extra parce adpresse ferrugineo-pubescentis, lobis deltoideis acutiusculis vix 2 mm. longis. *Corolla* extra ima basi excepta breviter adpresse ferrugineo-pubescentis; tubus 11 mm. longus; lobi 4, late lanceolati, acuti, 7 mm. longi, 4 mm. lati. *Stamina* 12, glabra, antheris acuminatis. *Fructus* 2,3 cm. altus, 2,8 cm. diametro, 8-ocularis, calyce plano quadrato 9 mm. lato adpresse ferrugineo-pubescente.

Jungle near Lem Dan (no. 522, ♂; 532 a, ♀); Klong Majum (no. 874, ♂; 607 c, ♂).

3. **D. sp.** forsan nova.

River-bank in jungle near Lem Dan (no. 592).

Sapotaceae.

Sideroxylon L.

1. **S. ferrugineum** Hook. et Arn.; Clarke in Hook. Fl. Br. Ind. III. 537. Jungle at Klong Majum (no. 619 c) and Klong Prao (no. 718); littoral jungle on Koh Kahdat (no. 574); islet off Koh Kahdat (no. 584).

Area: Tropical Asia, Seychelles.

Gesneraceae.

Boea sp.

On rocks in the jungle (no. 676); also at Klong Majum.

Pandanaceae.

Pandanus L.

P. similis Craib, Kew Bull. 1912: 417.

Very common in the ground in the jungle (no. 287).

Area: Siam.

Various families.

Determined by different botanists.

Dilleniaceae.

Dillenia Linné (det. O. Warburg).

1. **D. aurea** Sm. Hook. Fl. Br. Ind. I. 37.
Jungle at Lem Dan (no. 417); Klong Son (no. 648) "ton mesan" of the Siamese.

Area: India, Indo-China, Java, Borneo.

Tetracera Linné (det. Craib).

2. **T. sarmentosa** (L.) Willd.; *Delima sarmentosa* L.; Hook. Fl. Br. Ind. I. 31.
S. W. of Sarlak (no. 724).

Area: Assam to Singapore, Eastern Archipelago(?).

Bixaceae.

Bixa L. (det. Warburg).

1. **B. orellana** L.; Hook. Fl. Br. Ind. I. 190; Craib, Contr. Fl. Siam 13.
Cultivated at Lem Dan (no. 873).

Area: Generally cultivated in the tropics.

Scolopia Schreber (det. Craib).

2. **S. chinensis** Clos, Ann. sc. nat. ser. 4. VIII. 249; *S. crenata* part. Hook. Fl. Br. Ind. I. 191.
Plains of Lem Dan (no. 488).

Area: China, India.

Hypericaceae.

Cratoxylon Blume.

1. **C. polyanthum** Korth.; Dyer in Hook. Fl. Br. Ind. I. 257; Craib, Contr. Fl. Siam 15.

Klong Sarlakpet (no. 735). (det. Warburg).

Area: China, Indo-China, Malaya, Philippines.

2. **C. formosum** Benth. et Hook. f.; Dyer in Hook. Fl. Br. Ind. I. 258.
Koh Chang Noi (no. 696). (det. C. B. Clarke).

Area: Malacca, Borneo, Philippines.

Tiliaceae.

Grewia Linné (det. S. R. Drummond, Kew).

1. **G. microcos** L. Syst. (ed. 12) vol. II. 602 (1767)!; Masters in Hook. Fl. Br. Ind. I. 392; Craib, Contr. Fl. Siam 28.
S.W. of Sarlak (no. 723).

Area: China, Indo-China, Malaya.

Triumfetta Linné.

2. **T. rhomboidea** Jacquin; Masters in Hook. Fl. Br. Ind. I. 395.
Plains at Lem Dan (no. 242). (det. C. B. Clarke).

Area: China, India, Malaya, Tropical Africa.

3. **T. semitriloba** L.; Masters in Hook. Fl. Br. Ind. I. 396.
Rayong, sandy sea-shore (no. 885). (det. Warburg).

Area: Tropics.

Simarubaceae.

Eurycoma Jack (det. Craib).

1. **E. longifolia** Jack. Bennett in Hook. Fl. Br. Ind. I. 521; Craib, Contr. Fl. Siam 34.
Jungle at Lem Dan (no. 509); N. End, on rocks at the sea (no. 628b).

Area: Burma, Malaya, Philippines.

Brucea Mill. (det. O. Warburg).

2. **B. sumatrana** Roxb.; Bennett in Hook. Fl. Br. Ind. I. 521; Craib, Contr. Fl. Siam 34.

Plains at Lem Dan (no. 28, 164 and 185).

Area: S. China, India, Burma, Malaya.

Irvingia Hook. f. (det. Craib).

3. **I. Olivieri** Pierre, Fl. for. Cochinchine t. 263 B.
Jungle at Klong Munsé (no. 614 a and 842).

Area: Annam.

Hippocrateaceae.

Salacia L.

1. **S. prinoidea** (Willd.) D. C.; Lawson in Hook. Fl. Br. Ind. I. 626;
Craib, Contr. Fl. Siam 40.

Littoral N. of Lem Dan (no. 174). (det. Th. Loesener).

Area: India, Burma, Malaya.

2. **S. sp.** (det. Craib).

A shrub in the jungle near Lem Dan (no. 144 and 466).

Connaraceae.

Connarus Linné.

1. **C. semidecandrus** Jack; Hook. Fl. Br. Ind. II. 52, *vel sp. affinis* (det. E. Gilg).

Edge of jungle at Klong Munsé (no. 487).

Area (*C. semidecandrus*): Burma, Penang.

2. **C. quocensis** Pierre, Fl. Cochinch. t. 377 A.
Plains at Klong Son (no. 828) (det. Craib).

Area: Cochinchina.

Rosaceae.

Rubus L. (det. R. A. Rolfe, Kew).

- R. angulosus** Focke, Bibl. Bot. LXXII (1909). 90.
Plains at Klong Munsé (no. 233 and 450).

Area: Malay Peninsula and Islands.

Cucurbitaceae.

Trichosanthes Linné (det. Craib).

1. **T. cucumerina** L., Clarke in Hook. Fl. Br. Ind. II. 609; Craib, Contr. Fl. Siam 93.

Jungle at Klong Prao (no. 718 b).

Area: India, Malaya, N. Australia.

Benincasa Savi (det. Warburg).

2. **B. hispida** (Thunbg.) Cogn. in D.C. Monogr. Phaner. III. 513.
B. cerifera Savi, Fl. Br. Ind. II. 616.

Jungle near Lem Dan (no. 436).

Area: Tropical Asia and Africa; cultivated.

Oleaceae.

Jasminum L.

1. **J. sambac** (L.) Ait.; Clarke in Hook. Fl. Br. Ind. III. 591.
Mainland opposite Koh Kong; cultivated (no. 330) (det. Warburg).

Area: Cultivated in the tropics of both hemispheres.

2. **J. syringaeifolium** Wall.; Clarke in Hook. Fl. Br. Ind. III. 595.
var. (det. Craib).

Lem Ngob (no. 50).

Area: Assam, Burma.

Apocynaceae.

Rauwolfia Linné (det. Craib).

1. *R. sumatrana* Jack; *var. vel sp. valde affinis*.
Koh Kahdat (no. 572 b).

Area of *R. sumatrana*: Sumatra.

Cerbera Linné.

2. *C. Odollam* Gaertn.; Hook. Fl. Br. Ind. III. 638; Craib, Contr. Fl. Siam 130.

In the jungles of the littoral zone, Lem Dan (no. 85) and N. end of Koh Chang (no. 629 a) (det. Stapf); on rocks at the sea (no. 353) (det. Craib).

Area: S.E. Asia, Australia.

Alstonia R. Br. (det. O. Warburg).

3. *A. scholaris* (L.) R. Br.; Hook. Fl. Br. Ind. III. 642.
Plains at Lem Dan (no. 290).

Area: Tropical Asia, Australia, Africa.

Ervatamia Stapf (det. O. Stapf).

4. *E. graciliflora* (Wall.) Stapf; *Tabernaemontana graciliflora* Wall.; Hook. Fl. Br. Ind. III. 647. (Determination doubtful).

Jungle at Klong Son (no. 675 b).

5. *E. malaccensis* (Hook. f.) Stapf; *Tabernaemontana malaccensis*.
Hook. Fl. Br. Ind. III. 649, *vel species affinis*.

Plains at Klong Prao (no. 717 e); jungle at Klong Munsé (no. 811 a); Koh Kahdat, jungle (no. 579 a).

Area: Malacca.

Parsonsia R. Br. (det. O. Stapf).

6. *P. spiralis* Wall.; Hook. Fl. Br. Ind. III. 650.
River-bank at Klong Prao (no. 713).

Area: Tropical Asia.

Aganosma Don (det. Craib).

7. *A. marginata* Don; Hook. Fl. Br. Ind. III. 663. Craib, Contr. Fl. Siam 131. *forma aff. A. macrocarpae* Wall. Cat.
Klung (no. 375); Plains at Lem Dan (no. 719 b).

Area: S.E. Asia.

Strophanthus D.C. (det. O. Stapf).

8. *S. Wallichii* D.C.; Hook. Fl. Br. Ind. III. 655.
Jungle at Klong Son (no. 639).

Area: Assam, Burma.

Solanaceae.

Solanum L. (det. U. Dammer).

1. *S. torvum* Sw.; Clarke in Fl. Br. Ind. IV. 234; Craib, Contr. Fl. Siam 143.

Plains at Lem Dan (no. 111 and 389).

Area: Widely spread in tropical and subtropical countries.

2. *S. trilobatum* L.; Clarke in Fl. Br. Ind. IV. 236, var. *tomentosum*. Koh Chick, on rocks at sea-shore (no. 268).

Area: S. India, Malay Peninsula.

Physalis L. (det. O. Warburg).

3. *P. minima* L.; Clarke in Hook. Fl. Br. Ind. IV. 238.

A weed in banana-plantations near Lem Dan (no. 519).

Area: Tropics.

Capsicum L. (det. O. Warburg).

4. *C. annum* L.

Outlet of Klong near Lem Dan (no. 274); also cultivated.

Area: Tropics.

Datura L. (det. O. Warburg).

5. *D. alba* Nees; *D. fastuosa* var. *alba* Clarke in Hook. Fl. Br. Ind. IV. 243.

Sandy sea-shore at Klong Prao (no. 700).

Area: Tropics.

Nyctaginiaceae.

Pisonia L.

1. *P. aculeata* L.; Hook. Fl. Br. Ind. IV. 711 (det. Warburg). Koh Kahdat, sandy sea-shore (no. 558 and 804).

Area: Tropics.

2. *P. excelsa* Bl.; Hook. Fl. Br. Ind. IV. 711 (det. Craib). Koh Kahdat (no. 551).

Area: Malaya, Andaman Islands.

Myristicaceae.

Knema Lour.

1. *K. conferta* (King) Warbg. Nova Acta LXVIII. 578; Craib, Contr. Fl. Siam 176.

var. (det. Craib).

River-bank at Klong Son (no. 690).

Area (*K. conferta*): Malaya, Tonkin.

2. *K. glauca* (Bl.) Warbg. Nova Acta LXVIII. 594 (det. Ostenfeld).
Islet near Koh Kahdat (no. 581).

Area: Malay Peninsula, Java, Sumatra, Andamans and Nicobars.

3. *K. missionis* (Wall.) Warbg. Nova Acta LXVIII. 602 (det. Ostenfeld).

Jungle near Lem Dan (no. 516 and 831); jungle at Klong Sarlakpet (no. 880).

Area: Malay Peninsula, Borneo.

4. ? *Horsfieldia glabra* (Bl.) Warb. Specimen mancum, flores desunt (det. Ostenfeld).

Plains near Lem Dan (no. 300).

Lauraceae.

Cinnamomum L. (det. C. H. Ostenfeld).

1. *C. iners* Reinw.; Hook. Fl. Br. Ind. V. 130; Craib, Contr. Fl. Siam 176.

Jungle near Lem Dan (no. 489).

Area: Burma, Malaya.

Hernandia (det. Craib).

2. *H. ovigera* L.

Without locality (no. 882).

Area: West-Indies.

Cassytha L. (det. O. Warburg).

3. *C. filiformis* L.; Hook. Fl. Br. Ind. V. 188; Craib, Contr. Fl. Siam 177.

Mainland opposite of Koh Chick (no. 378).

Area: Tropical Africa, Asia, Australia.

Litsea Lam. (det. Craib).

4. *L.* sp. an *L. polyantha*? Juss. Fl. Br. Ind. V. 162; Craib, Contr. Fl. Siam 176.

Jungle near Lem Dan (no. 518).

Area of *L. polyantha*: N. India, Honkong, Assam, Burma, Malay Peninsula.

Another(?) species of *Litsea* was found in Koh Kahdat (no. 579 e); the material is unfortunately insufficient for a sure determination.

Filices.

Revised by **Carl Christensen** — Copenhagen.

While preparing Part X of the Flora of Koh Chang I found, on sorting the material, that several of the ferns collected by Dr. Johs. Schmidt, and determined by Dr. H. Christ in 1900 and published in Part III of the Flora (Bot. Tidsskr. **24**: 102—113), were apparently incorrectly named. I therefore undertook a thorough revision of the determinations, and the result was somewhat surprising. On my informing Dr. Schmidt of this he asked me to prepare a revised list of the ferns of Koh Chang. In the following list, all the ferns collected are enumerated, with the numbers of the specimens added (these being unfortunately omitted in the first parts of the Flora of Koh Chang). I have throughout referred to Christ's list, where informations of localities, area of the species, etc. can be found. I use of course the nomenclature of my Index Filicum; as will be seen, it differs greatly from that followed by Christ 15 years ago.

1. **Trichomanes sublimbatum** K. Müll.; C. Chr. Ind. 650; *Microgonium sublimbatum* v. d. B. Hym. Jav. 6 t. 2; *Trichomanes muscoides* Christ, Bot. Tidsskr. **24**. 104.

Klong Son (no. 769).

Area: Malaya, Assam. An Asiatic representative of the American *T. hymenoides* Hedw. (*T. muscoides* Sv.).

2. **T. javanicum** Bl.; Christ l. c. 103.

Not the true *T. javanicum*, but a variety or subspecies closely allied to *T. rhomboideum* J. Sm.; *Cephalomanes rhomboideum* v. d. B. Hym. Jav. 33 t. 24.

Klong Munsé (no. 133, 774, 778).

3. **T. bipunctatum** Poir., C. Chr. Ind. 636; *T. filicula* Bory, non Christ l. c. *T. pyxidiferum* Christ, l. c. (non L.).

A form with narrow, lanceolate fronds; spurious vein rather close to the margin, continuous, rather obscure. Resembles in habit not a little *T. humile* Forst., but it is evidently a form of the variable *T. bipunctatum*; very different from *T. pyxidiferum* L.

Klong Sarlakpet, on rocks in the jungle (no. 803).

Area: Tropical Africa, Australia, Polynesia and Asia, northwards to Japan and Corea.

4. **T. bilabiatum** Nees et Bl.; C. Chr. Ind. 636. *T. Filicula* Christ, l. c.

Differs from *T. bipunctatum* by its short-stalked, broad, deltoid fronds and by the presence of short spurious veins in the cell-tissue within the marginal spurious vein. The form collected is small, with few spurious veins.

Klong Son, epiphytic on trees (no. 768).

Area: Malaya, Melanesia.

5. **T. siamense** Christ, l. c.

Klong Munsé (no. 401).

Christ incorrectly makes this a subspecies of *T. rigidum* Sw.; it resembles that species by its tufted fronds, rigid texture and brown colour, but otherwise it is very different, e. g. its rachis being distinctly winged throughout. Christ's description is somewhat inadequate. The lobes are not finely denticulate, but entire, the sori not free, but fully immersed to the mouth in an anterior tertiary lobe, leaving only a narrow margin of the lobe free as a wing to the sorus. The erect, short, branched rhizome is clothed at the growing apex with numerous dark-brown, cylindrical, articulated hairs.

The affinity of this species is probably with *T. hispidulum* Mett. from Malacca and Borneo.

To this species probably belong some small tufts of a little young fern found in the jungle on rocks near Klong Munsé (sine num.). It was determined by Christ as *T. nanum* v. d. B., Christ, l. c. = *T. Kurzii* Bedd., C. Chr. Ind. 643, but this, belonging to the subgenus *Hemiphlebium*, has nothing to do with our plant. Unfortunately, the small plants are all sterile, but in many characters: the tufted fronds, the hairs, the colour and texture, etc., they resemble very much *T. siamense*, of which I therefore consider them to be young plants.

(*T. rigidum* Sw.; Christ, l. c. Specimens not found in the collection, the species must be excluded.)

6. **Cibotium barometz** (L.) J. Sm.; Christ, l. c. 111, — (no. 619 e).

7. **Alsophila glabra** (Bl.) Hook.; C. Chr. Ind. 43.

Klong Munsé, river bed in the jungle (no. 594 d); a single sterile pinna only collected.

Area: Tropical Asia.

8. **Alsophila kohchangensis** n. sp.

A. podophylla Christ, l. c. 111 (non Hook).

A. ex affinitate *A. glabrae* (Bl.) Hook. vel subspecies hujus speciei caudice epigaeo breve vel subnullo. *Stipite* atropurpureo nitido, vix 10 cm. longo, 5—7 mm. crasso, superne late canaliculato, ad basin squamis luteo-brunneis parvis lanceolato-acuminatis non dense oblecto, sursum squamis sensim paucioribus et minoribus, anguste linearibus instructo, pilis destituto, non muricato. *Lamina* ambitu late lanceolata vel elliptico-lanceolata, e medio utrinque attenuata, in siccitate brunnea (rachi atropurpurea), costis pinnarum supra ferrugineo-crispato-hirtulis exceptis omnino glabra, bipinnatifida vel subbipinnata. *Pinnis supremis* late adnatis, sursum decurrentibus confluentibusque, subintegris versus apicem abrupte

et breviter acuminatum serratis, *sequentibus* (versus basin laminae) sessilibus, basi truncatis, alternis, oblongis, acuminatis, 6—10 cm. longis, $1\frac{1}{2}$ —2 cm. latis, lobatis vel ad medium pinnatifidis; lobis 5—6 mm. latis, apice rotundatis, dentatis, dentibus brevibus obtusis circiter 6—8 pro lobo; *pinnis medialibus*, maximis (maxima in specimine 20 cm. longa, medio 10 cm. lata), late lanceolatis, breviter petiolatis, utrinque e medio attenuatis, parte inferiore pinnatis (pinnulis liberis 2—3 jugis), parte mediali ad costam pinnatifidis, versus apicem abrupte attenuatis, lobatis; apice lobato (= tertia parte pinnae) pinnis superioribus lobatis simili; pinnulis liberis infimis 1—2 cm. longis, obtusis, leviter serratis, sequentibus sensim majoribus; segmentis medialibus maximis, 5 cm. longis, 1,2 cm. latis, basiscopiis saepe quam acroscopticis longioribus, late adnatis vel decurrentibus vel confluentibus, pinnis supremis serratis similibus, marginibus infra subintegris versus apicem abrupte acuminatum serratis; *pinnis inferioribus* sensim reductis pinnatifidis vel lobatis vel serrulatis, petiolatis (petiolo 3—4 mm. longo), basi cordatis, infimis 2—3 cm. longis, 6—8 cm. distantibus. *Venis tertiariis* distinctis, in pinnis lobatis indivisis, ca. 5-jugis, ad dentes intrantibus, basali posteriore saepe e costa pinnae excurrente, anteriore e costula curvatim ad sinum inter lobos excurrente; venis tertiariis in pinnis pinnatifidis furcatis vel bifurcatis, soriferis. *Soris* parvis, medialibus; receptaculo globoso, parvo.

Klong Munsé, river bed in the jungle (no. 720).

It is possible that this fern may be a very small form of *A. glabra*; the upper part of the leaf resembles very much the outer part of a pinna of that species, still I believe that it is specifically distinct. I am convinced that it is not identical with the South Chinese *A. podophylla* Hook., as Christ suggested. This is said to have black basal scales and a muricate stem. The rows of sori in *A. kohchangensis* are not shaped like an inverted V as in *A. glabra*, and its much-reduced lower pinnae and pinnulae are a character not mentioned in the descriptions of *A. glabra* and *A. podophylla* to which I have access. *A. dubia* Bedd. is an allied species, but according to description and figure rather different. *Cyathea Bonii* Christ, referred by Christ himself to *A. podophylla*, is according to the description very near to our species, but Christ describes the pinnae: e basi *dilatata* late lanceolatis.

9. ***Dryopteris sagenioides*** (Mett.) O. Ktze.; C. Chr. Ind. 290; *Aspidium sagenioides* Christ, l. c. 108, — (no. 228).

10. ***D. setigera*** (Bl.) O. Ktze.; C. Chr. Ind. 292; *Aspidium setigerum* Christ, l. c. 108 (no. 775).

This species, common from Japan through tropical Asia and Polynesia, has been collected fairly frequently in later years in South Brazil and adjacent countries. Probably it has been introduced there and escaped from gardens.

11. ***D. latipinna*** (Hook.) O. Ktze.; C. Chr. Ind. Suppl. 108. — *Aspidium pennigerum* Christ, l. c. 109 (non Bl. nec Bedd.).

Klong Sarlakpet, — (no. 745 b).

The form collected is larger than the Chinese type (pinnæ 6 cm. long by 2 cm. broad), but in technical and minute characters not very different. From the following species it differs by its short but broad, little incised pinnæ, the lamina with a long pinnatifid apex, and the very short pubescence of both surfaces. *Nephrodium pennigerum* Bedd., now called *D. indica* v. A. v. R., to a variety of which: *malayense* Bedd. Christ referred our specimens, differs by having 5—8 pairs of anastomosing veins.

Another specimen collected at Klong Son (no. 771) I provisionally also refer to *D. latipinna*. It looks very different, in general habit much more like *D. parasitica*, from which it differs by its less cut pinnæ; in this character as in others (pubescence and the long pinnatifid apex of the lamina) it agrees with no. 745 b, but its pinnæ are narrower (1 cm. by 6 cm. long), more acuminate, and the under-surface is dotted with large red glands. It is not unlikely an undescribed species.

Area: China, Java(?).

12. ***D. parasitica*** (L.) O. Ktze.; C. Chr. Ind. 282 ex parte; *Aspidium parasiticum* Christ, l. c. 109. (no. 771 bis).

The form collected certainly belongs to the collective species *D. parasitica*. It is a very hairy, didymosorous form that with approximate certainty can be identified with *Nephrodium tectum* (Wall.) Bedd. Handb. Suppl. 79, although the rhizome is short-creeping. Beddome refers to *N. tectum* his *N. didymosorum* Parish, Ferns br. Ind. t. 200 from Burma, which I have shown is apparently exactly the same form as the true *D. parasitica* from China (Arkiv för Bot. 9 no. 11: 26—28). I am not nearly so convinced that the Koh Chang form, like *A. tectum* Wall. from Singapore and Perak, is typical *D. parasitica*.

13. ***D. extensa*** (Bl.) O. Ktze.; C. Chr. Ind. 264; *Aspidium extensum* Christ, l. c. 109, — (no. 627).

14. ***D. (Meniscium) triphylla*** (Sw.) C. Chr. Ind. 298; *Meniscium triphyllum* Christ, l. c. 109, — (no. 650, 777 part.).

15. ***Aspidium variolosum*** Wall.; Christ, l. c. 108, — (no. 626 a, 772).

16. ***Polybotrya appendiculata*** (Willd.) J. Sm.; C. Chr. Ind. 503. var. *marginata* (Bl.). — *P. marginata* Bl. Fl. Javae t. 3.; *P. appendiculata* Christ, l. c. 109 cum var. *Helferiana* (Ktze.) Christ, l. c.

Differs from the varieties recognized by Beddome by its naked rachis, which (in the sterile leaves) is margined on both sides by a green wing about 1 mm. broad. Some of the sterile leaves have a prolonged, rooting apex.

Area (of variety): Java (Malaya?).

17. ***Leptochilus heteroclitus*** (Pr.) C. Chr. Ind. 385.

Klong Sarlakpet (no. 777 part; mixed with *Dryopteris triphylla*).

Area: Tropical and subtropical Asia; Melanesia.

18. **L. scalpturatus** (Fée) C. Chr. Ind. 387 (excl. syn. offinibus, *Heteroneuron scalpturatum* Fée exceptum), var. *undulatus* var. nov. *Gymnopteris costata* var. *undulata* Christ, l. c. 109, — (no. 891).

The nomenclature of certain species of *Leptochilus* § *Heteroneuron* (Fée) is confused. In Ind. Fil. 387 I have identified *Acrostichum costatum* Wall. = *Gymnopteris costata* Bedd. with *Heteroneuron scalpturatum* Fée, Acrost. 95 t. 56, because Fée himself, although with doubt, referred *A. costatum* Wall. to his described and well illustrated species. A comparison of Fée's illustration (Acrost. t. 56) with specimens of *A. costatum* Wall. from Assam, leg. G. Mann, shows at once that we have here two widely different forms. The form illustrated by Fée is, according to authentic specimens examined by me, collected near Manila by Gaudichaud; it is in venation not materially different from *Acr. contaminans* Wall. = *Leptochilus virens* C. Chr. Ind. 388, but it has broader and shorter sterile pinnæ with red veins, and much broader fertile pinnæ. *Acrost. virens* Hook. et Grev. Ic. t. 221 has similar pinnæ, but the venation is very different, about as in *A. costatum* Wall.; *A. crispatum* Wall., Clarke, Ferns of N. India t. 84 B, D, has often red veins, but its pinnæ are much narrower. I am inclined to believe that the following three species may be maintained.

Leptochilus costatus (Wall.) C. Chr. comb. nov.; *Acrostichum costatum* Wall.; *Gymnopteris costata* Bedd. etc. (see Ind. Fil. under *L. scalpturatus*), with var. *Meniscium deltigerum* Wall. —? *Nothochlaena undulata* Wall.

North India.

L. virens C. Chr. Ind. 388. *A. contaminans* Wall.; *Gymnopteris contaminans* Bedd.; *A. crispatum* Clarke, Ferns N. Ind. 580 (an Wall. ?; includes both *A. contaminans* Wall. and *A. crispatum* Wall.).

South India, Ceylon, Birma.

var. **crispatula** (Wall.) Clarke l. c.; Bedd. Handb. Suppl. 105.

Khasia Hills.

The specific name of this species I have not changed, although it is an open question, what *A. virens* Hook. et Grev. may be; probably it is a form allied to *L. costatus*. The proper name of the species is perhaps *contaminans*; still some other forms now referred to the present species have been described and illustrated before *contaminans*.

L. scalpturatus (Fée) C. Chr. Ind. 17, 387 part.; *Heteroneuron scalpturatum* Fée, Acrost. 95 t. 94.

Philippines, Malaya, Siam.

In all three species a form occurs, which is marked by its fertile pinnæ being sporangiferous along the margins only, leaving a broad disk in the centre of the pinnæ free of sporangia. The first of these forms was named *Nothochlaena undulata* by Wallich, and

cāme probably from Burma; it is by Beddome referred as a variety to *L. costatus*; it is, however, possible, that it should rightly be referred to *L. scalpturatus*. It was figured by Beddome, F. Br. Ind. t. 115.

A similar form of what I name *L. virens* is called var. *pseud-undulata* Clarke, Ferns N. Ind. 581.

The third form is that which Dr. Schmidt has collected in Siam and which beyond doubt is the same species as I here name *L. scalpturatus*. In all characters, the marginal soriferation excepted, it closely agrees with specimens from Manila, leg. Gaudichaud.

19. ***Nephrolepis exaltata*** (L.) Schott, C. Chr. Ind. 454. *N. acutifolia* Christ, l. c. 110, — (no. 627 a).

Although sterile the specimen may with approximate certainty be referred to *N. exaltata*; certainly it is not *N. acutifolia*. Christ has also (l. c. 109) *N. exaltata* in his list; no specimens so named by him are to be found in the collection.

20. ***Humata repens*** (L. fil.) Diels; C. Chr. Ind. 754; *Davallia repens* Christ, l. c. 111.

Klong Majum (no. 102); Nipple (no. 679 a).

21. ***Davallia denticulata*** (Burm.) Mett.; C. Chr. Ind. 209; *D. elegans* Sw.; Christ, l. c. 110, — (no. 766).

22. ***D. solida*** (Forst.) Sw.; Christ, l. c. 110, — (no. 783).

23. ***Odontosoria chinensis*** (L.) J. Sm.; C. Chr. Ind. 464; *Stenoloma tenuifolia* Christ, l. c. 110, — (no. 649).

24. ***Tapcinidium pinnatum*** (Cav.) C. Chr. Ind. 631; *Microlepia pinnata* Christ, l. c. 111, — (no. 272, 764, 780).

25. ***Schizoloma Griffithianum*** (Hook.) Fée; *Lindsaya Griffithiana* Hook. sp. 1. 219 t. 68 B. *Diplazium Bantamense* (sic!) Christ, l. c., 108, — (no. 782).

Commonly referred to *S. ensifolium* (Sw.) as a variety; still it seems essentially different from the typical form of that species and may as well as many others be dealt with as a distinct species.

Area: Burma.

S. ensifolium (Sw.) J. Sm. is in Christ's list (under *Lindsaya*, l. c. 110); no specimens so named are, however, in the collection.

26. ***S. heterophyllum*** (Dry.) J. Sm.; C. Chr. Ind. 618; *Lindsaya heterophylla* Dry.; Christ, l. c. 110, — (no. 666).

27. ***Lindsaya cultrata*** Sw.; Christ, l. c. 110, — (no. 779).

28. ***L. orbiculata*** (Lam.) Mett.; Christ, l. c. 110, — (no. 283).

Small but fertile plants, with pinnate leaves not more than 4—5 cm. long.

29. **Diplacium silvaticum** (Bory) Sw.; Christ, l. c. 108, — (no. 781).

30. **Asplenium Schmidtii** n. sp.

Aspl. vulcanicum Christ, l. c. 108 (non Bl.).

Rhizomate? *c* *Stipite* subquadrangulari, superne tricanaliculato, fusco-stramineo vel viridi-stramineo ad basin nigricante, glabro, versus basin squamis lanceolatis, opaco-brunneis sparse oblecto, 35 cm. longo, 3 mm. crasso. *Lamina* ambitu ovata vel ovato-oblongo, 50 cm. longa, 25—30 cm. infra medium lata, pinnata cum impari, in siccitate brunneo-viridi, firmo-herbacea vel submembranacea, glaberrima. *Pinnis* 14-jugis, alternis, 3 cm. distantibus, lineari-oblongis, e medio versus apicem acuminatum serratum sensim attenuatis, marginibus obscure repandulo serrulatis, inferioribus petiolulatis (petiolo 2—3 mm. longo), superioribus sessilibus (rachi non alata), basi inaequalibus — superiore truncata rachi parallela, inferiore rotundato-truncata vel rotundato-cuneata --, maximis 15 cm. longis, 2 cm. latis, terminali conformi sed profundius serrulata. *Venis* sub angulo 55° excurrentibus, 4 mm. distantibus, ad basin furcatis; ramo anteriore semper indiviso, sorifero, posteriore furcato vel bifurcato, omnibus marginem attingentibus. Soris utrinque ad 30, partem tertiam rami anterioris occupantibus, costam plerumque attingentibus. Indusio angusto (vix 1 mm. lato), integro, pallide brunneo.

Koh Chang, jungle near Lem Dan. Johs. Schmidt no. 776.

Closely allied to the Malayan *A. persicifolium* J. Sm., and perhaps not specifically different from that species; it differs by its nearly entire and longer pinnæ, its short sori and its very regular venation. The lateral veins are nearly always in groups of four: from a very short secondary vein or, more often, from the costa of the pinnæ itself, spring out two veins, of which the upper is always simple and soriferous, while the lower is forked 2—5 mm. above the costa; the lower fork of these is simple, while the anterior one is forked again once or twice.

Christ has referred the specimen to *A. vulcanicum* Bl., which differs from our new species by its coriaceous texture, pale colour, and equally cuneate base of the pinnæ.

31. **A. pellucidum** Lam.; Christ l. c. 108, — (no. 78).
32. **A. laserpitiifolium** Lam.; Christ, l. c. 107, — (no. 566).
33. **A. Grevillei** Wall.; Christ, l. c. 108. Not found in the collection. Probably *A. nidus* L.
34. **Blechnum orientale** L.; Christ, l. c. 107, — (no. 65, 480).
35. **Brainea insignis** (Hook.) J. Sm.; Christ, l. c. 107, — (no. 663 a).
36. **Stenochlaena palustris** (Burm.) Bedd.; Christ, l. c. 107, — (no. 162, 718, 773).
37. **S. aculeata** (Bl.) Ktze.; C. Chr. Ind. 624. *Lomariopsis sorbifolia* Christ, l. c. 107, — (no. 402).

Although the specimen is sterile it doubtless belongs to this species, that is distinguished by a spiny rhizome and the pinnæ articulated to the rachis. The specimen differs from the typical form by having the pinnæ irregularly toothed. Some authors consider *S. aculeata* an abnormal form of *S. sorbifolia* sp. coll., others of *S. palustris*.

Area: Tropical Asia.

38. ***Onychium siliculosum*** (Desv.) C. Chr. Ind. 469; *O. auratum* Klf.; Christ, l. c. 106 (no. 68).

39. ***Adiantum flabellulatum*** L.; C. Chr. Ind. 26; *A. Bonii* ex parte Christ, l. c. 106.

Nipple, 2000 ft., on rocks in open jungle (no. 678).

Area: Tropical Asia and northwards to Japan.

40. ***Adiantum fragiliforme*** n. sp.

A. Bonii ex parte Christ, l. c. 106 (non Journ. de Bot. 8: 150).

Although I have not seen the original *A. Bonii* from Tonkin I am convinced, after a close comparison of the Koh Chang plant with Christ's original description, that our plant can not be *A. Bonii*. It belongs to a group of which several species have been described in recent years, but as it differs from all these in some points I propose it as new.

Rhizomate breve, erecto, dense radicante. *Stipitibus* atro-castaneis, nitidis, strictis, ad 10 cm. longis. *Lamina* ambitu late ovata, 10—13 cm. longa et lata, tripinnata, glaberrima, rigida, infra paulo glaucescente. Pinnis primariis utrinque 3—4, 4—8 cm. distantibus, infimis maximis, longe petiolatis (petiolo 3—4 cm. longo), 6—8 cm. longis. Pinnis secundariis in pinna infima 2-jugis, in pinna sequente unijugis; pinnis superioribus atque terminali simpliciter pinnata. Segmentis breve petiolulatis (petiolo 1½ mm. longis), ad petiolum distincte articulatis et facile decedentibus, 5—8 mm. longis et latis, basi aequaliter cuneatis vel saepe utrinque rotundatis, margine exteriori integro vel obsolete dentato indivisis vel plus minusve profunde bi- (raro tri-) lobatis, segmento terminali vix majore. Soris in segmento uno vel binis, rarissime ternis; margine segmenti sorifero paulo emarginato. Indusio atro-brunneo, subquadrangularem vel saepe semicirculari, 1—1½ mm. lato.

Koh Chang, Klong Son, 1000 ft., on rocks in the jungle (no. 677).

This species seems to differ from all species of *Adiantum* from tropical Asia by its distinctly articulated segments, which in the dried specimens are very apt to fall off as in the West Indian *A. fragile* Sw., a species with different sori. In general habit, branching and shape of segment our new species is very similar to *A. Wattii* Bak., which species Beddome (Suppl. 18) has referred to *A. capillus veneris* as a variety. If he is right in this our species is not *A. Wattii*. *A. Bonii* is described as having the stipe scarcely glossy, segments not articulated to the petiole, the terminal larger than the lateral ones, sori reniform and 3—5 to a segment. By these characters and in others *A. Bonii* is certainly widely different from *A. fragiliforme*.

41. *Pteris longifolia* L.; Christ, l. c. 106 (no. 549 e).
Hieronymus has recently (Hedwigia 54: 290—294, 1914) separated out from the true *P. longifolia* L., which is American, the Old Worlds forms of *P. longifolia* as a distinct species *P. vittata* L., to which the Koh Chang specimens consequently belong.
42. *P. biaurita* L. *P. quadriaurita* var. *biaurita* Christ et var. *Grevilleana* Christ, l. c. 106 (non *P. Grevilleana* Wall.), — (no. 19 and 254).
43. *P. quadriaurita* Retz.; Christ, l. c. 106 (excl. var.).
Hieronymus has recently (Hedwigia 55: 325—375, 1915) elaborately dealt with the Asiatic forms of the cosmopolitic collective species *P. quadriaurita*. He gives very long and detailed descriptions of no fewer than 20 Asiatic species, the majority of them founded on a single or a couple of specimens. I have tried to determine the two forms collected in Koh Chang after the descriptions of Hieronymus. As could be expected, the specimens do not agree in all details with so detailed descriptions, and I cannot, therefore, with certainty determine the two forms.
The first of these is possibly *P. Blumeana* Ag.; Hieron., l. c. 360, with which it agrees in its obtuse, submarginate segments. It is a form with a whitish band along the midrib of the pinnæ, a peculiarity found in several of the species (no. 785).
The second form is probably identical with
44. *P. aspericaulis* Wall.; Hieron. l. c. 348. *P. asperula* Christ, l. c. 107 (non J. Sm.), — (no. 632). Known from N. India only.
45. *P. tripartita* Sw.; Christ, l. c. 107, — (no. 578).
46. *Vittaria elongata* Sw.; Christ, l. c. 104, — (no. 76 and 722).
47. *Antrophyum reticulatum* (Forst.) Klf.; Christ, l. c. 104, — (no. 745).
48. *Drymoglossum heterophyllum* (L.) C. Chr. Ind. 246; *D. piloselloides* (L.) Pr.; Christ, l. c. 105, — (no. 128, 179, 416, 660 a).
49. *Taenitis blechnoides* Sw.; Christ, l. c. 104, — (no. 400).
50. *Polypodium punctatum* L.; Christ, l. c. 105, — (no. 234, 358, 745c).
51. *P. nigrescens* Bl.; Christ, l. c. 105, — (no. 765).
52. *P. sinuosum* Wall.; Christ, l. c. 105, — (no. 97).
53. *Cyclophorus adnascens* (Sw.) Desv.; C. Chr. Ind. 197; *Niphobolus adnascens* Klf.; Christ, l. c. 105, — (no. 806).
54. *C. acrostichoides* (Forst.) Pr.; C. Chr. Ind. 197; *Niphobolus acrostichoides* Rich.; Christ, l. c. 105, — (no. 476).

55. *Drynaria sparsisora* (Desv.) Moore; C. Chr. Ind. 249; *D. Linnaei* (Bory) Bedd.; Christ, l. c. 106, — (no. 227, 726).

Differs from *D. quercifolia* mainly by the scales of the rhizome being peltately fixed.

56. *Acrostichum aureum* L. var. *Schmidtii* Christ; *Chrysodium aureum* var. *Schmidtii* Christ, l. c. 104, — (no. 718 h).

57. *Platyserium coronarium* (König) Desv.; C. Chr. Ind. 664; *P. biforme* Sw.; Schmidt, Bot. Tidsskr. 24: 105. (Specimens not seen.)

58. *Ceratopteris thalictroides* (L.) Brongn.; Christ, l. c. 113, — (no. 226).

59. *Gleichenia linearis* (Burm.) Clarke; Christ, l. c. 111, — (no. 770).

var. *subpectinata* (Christ); *G. subpectinata* Christ, l. c. (no. 619 f).

Christ's new species can hardly be other than a local form of the variable *G. linearis*. The reduction of the lower segments of the pinnæ, believed by Christ to be a characteristic feature of *G. subpectinata*, is not rarely seen in *G. linearis* and is, moreover, not found in all pinnæ of the type-specimens.

60. *G. laevigata* (Willd.) Hook.; Christ, l. c. 111, — (no. 770 bis).

Area: Malaya. Specifically different from the Mascarene *G. flagellaris* Spr.

61. *Schizaea digitata* (L.) Sw.; Christ, l. c. 112, — (no. 679).

62. *S. dichotoma* (L.) Sm.; Christ, l. c. 112, — (no. 710).

63. *Lygodium circinnatum* (Burm.) Sw.; Christ, l. c. 112, — (no. 269).

64. *L. scandens* (L.) Sw.; *L. microphyllum* Christ, l. c. 112, — (no. 153).

65. *L. salicifolium* Pr.; C. Chr. Ind. 413. *L. flexuosum* Christ, l. c. 112 (non Sw.), — (no. 11 [Lem Ngob], 830 [Koh Chang Noi]).

Area: India, Malaya.

66. *Angiopteris evecta* (Forst.) Hoffm. sp. coll.; Christ, l. c. 112, — (no. 767).

The form collected is abundantly different from the true *A. evecta* from Tahiti. It belongs to the section *Pseudangiopteris* Pr. to which de Vriese referred about 30 "species", most of them from India. I have tried to determine the Siamese form after de Vriese's monograph; it does not agree exactly with any of the forms described by de Vriese, but it comes very near to *A. repandula* de Vriese, Mon. 30 t. 3, f. 4, t. 4, f. 4, differing from that form by the presence of very short recurrent veinlets and fewer sporangia in the sori. The pinnæ are remarkably long-stalked (petiole 10 cm. l. by a blade about 30 cm. l.); pinnules 5—7 jugate

below the terminal one, 12—15 cm. long by $3\frac{1}{2}$ cm. broad at the middle, pale yellowish-green beneath, the margins dentate throughout, the abruptly acuminate apex serrulate, unequally cuneate at base, the upper (inner) side nearly parallel to rachis, the lower cuneate; some minute scales on the flattened midrib beneath. Veins simple or more often once or twice furcate; short recurrent veins present. Sori well within the margin with 13—16 sporangia. By its long-stalked pinnae with few but proportionally very broad pinnae of a yellowish-green colour it seems to deserve a name of its own; I propose to name it **A. siamensis** n. sp.

Additamenta.

Supplement to some families dealt with in earlier parts of the "Flora of Koh Chang".

Leguminosae.

Conf. Bot. Tidsskr. 24: 264—267 (Fl. of Koh Chang, part V).

Parkia R. Br. (det. Craib).

4. **P. streptocarpa** Hance, Journ. of Bot. XIV. 259.
Jungle near Lem Dan (no. 470).

Area: Siam.

Cassia L.

8. **C. occidentalis** L. (see part V) (det. Craib).
Plains at Lem Dan (no. 452).

Saraca L. (det. H. Harms).

25. **S. minor** Miq. Fl. Ind. Bat. I. 84; *S. indica* part. Baker in Hook. Fl. Br. Ind. II. 271.
River-bank at Klong Prao no. 705).

Area: Java.

Derris Lour. (det. Craib).

26. **D. uliginosa** (D. C.) Benth.; Fl. Br. Ind. II. 241.
Rayong (no. 878).

Area: From China through tropical Asia, Australia, Polynesia and East Africa.

Combretaceae, det. C. H. Ostenfeld.

Conf. Bot. Tidsskr. 26: 168 (Fl. of Koh Chang, part VIII).

Terminalia Linné.

7. **T. citrina** Roxb.; Clarke in Hook. Fl. Br. Ind. II. 446.
Klong Son (no. 657).

Area: N. India, Assam, Burma, Malacca.

Combretum Linné.

8. **C. extensum** Roxb.; Clarke in Hook. Fl. Br. Ind. II. 458; Craib, Contr. Fl. Siam 83.

Rocks at sea-shore (no. 629).

Area: India, Indo-China, Malaya, Philippines.

Melastomaceae.

Conf. Bot. Tidsskr. **24**: 344—345 (Fl. of Koh Chang, part VI).

Memecylon L. (det. Craib).

7. *M. costatum* Miq. Clarke in Hook. Fl. Br. Ind. II. 558.
Jungle at Klong Munsé, river-bank (no. 532).

Area: Malacca, Java, Sumatra, Borneo.

8. *M.* sp. near *M. coeruleum* Jack; Clarke in Hook. Fl. Br. Ind. II. 559.
A small tree growing at Klong Majum, alt. ca. 700 ft. (no. 613 a);
Koh Saket, inside littoral zone (no. 341).

Area of *M. coeruleum*: Malay Peninsula, Philippines.

An indeterminable species of *Memecylon* was collected at Klong Majum (no. 598).

Convolvulaceae.

Conf. Bot. Tidsskr. **26**: 170 (Fl. of Koh Chang, part VIII).

Erycibe Roxb.

E. Schmidtii Craib, sp. n., ramulis lenticellatis, inflorescentia terminali brevi racemiformi cognoscenda.

Ramuli graciles, cortice primo fusciscente mox brunnescente lenticellato obtecti. *Folia* saepius oblango-elliptica angustave elliptica, apice obtuse acuminata, basi cuneata, 6—8,5 cm. longa, 2—3,5 cm. lata, subcoriacea, pagina utraque glabra, nervis lateralibus utrinque circiter 8 pagina utraque subconspicuis et inferiore vix subprominulis, nervis transversis sparsis sub oculo armato tantum visis, integra, petiolo ad 1,3 cm. longo supra canaliculato puberulo fusco suffulta. *Inflorescentia* terminalis, racemiformis, 3 cm. longa, pedunculo communi circiter 1 cm. longo simul ac rhachi sparse ferrugineo-puberulo suffulta; pedicelli fusci, 5 mm. longi. *Sepala* 2,75 mm. longa, ciliolata. *Corolla* generis, tubo circiter 3 mm. longo, lobis quam tubo saltem duplo longioribus. *Fructus* haud maturus, ellipsoideus, apiculatus, circiter 10 mm. longus et 7 mm. diametro, ater, glaber.

River-bank at Klong Son, a shrub, perhaps a liana (no. 686 b).

Rubiaceae.

Conf. Bot. Tidsskr. **24**: 329—341 (Fl. of Koh Chang, part VI).

Psychotria sp. verisimiliter *P. angulata* Korth.; Hook. Fl. Br. Ind. III. 172.

Jungle at Klong Munsé (no. 394) det. Craib).

Area of *P. angulata*: Burma to Malacca, Java, Borneo.

An indeterminable specimen of *Diplospora* was collected in the jungle at Klong Munsé (no. 590), and another of *Coffea* at Koh Kahdat (no. 554); a shrub with white fruits.

Gentianaceae.

Conf. Bot. Tidsskr. **24**: 263 (Fl. of Koh Chang, part V).

Canscora Lam. (det. C. B. Clarke).

C. ? diffusa (Vahl) R. Br.; Clarke in Hook. Fl. Br. Ind. IV. 107;
Craib, Contr. Fl. Siam 138.

On rocks in jungle (no. 284).

Area: Tropical Asia, Australia, Africa.

Loranthaceae.

Conf. Bot. Tidsskr. **24**: 256—257 (Fl. of Koh Chang, part V).

7. **Loranthus** sp. near *L. ampullaceus*.

Koh Sabket, at the sea (no. 332 a).

Urticaceae, det. Craib.

(Incl. *Moraceae* et *Ulmaceae*.)

Conf. Bot. Tidsskr. **24**: 352—354 (Fl. of Koh Chang, part VI).

1. **Artocarpus lakoocha** Roxb.; Hook. Fl. Br. Ind. V. 543.

Koh Kahdat (no. 556).

Area: From Himalaya through Burma to Malacca.

Streblus Loureiro (Moraceae).

2. **S. asper** Lour.; Fl. Br. Ind. V. 489; Craib, Contr. Fl. Siam 196.

Plains at Lem Dan (no. 431).

Area: E. Asia.

Trema Loureiro (Ulmaceae).

3. **T. amboinensis** Bl.; Fl. Br. Ind. V. 484; Craib, Contr. Fl. Siam 195.

T. velutina Planch. in Ann. sc. nat. ser. 3. X. 327.

Near Lem Dan, river-bank (no. 243), dry river-bed (no. 447), plains
(no. 301).

Area: Sikkim, Assam to Malaya.

4. **T. virgata** Bl., Mus. Bot. II. 60. *T. timorensis* Hook. f., Fl. Br.
Ind. V. 483, an *Dene*?

Plains N. of Lem Dan (no. 303).

Area: China, Indo-China, Malaya.

Fagaceae.

Conf. Bot. Tidsskr. **24**: 255 (Fl. of Koh Chang, part V).

4. **Quercus? Reinwardtii** Korth.; Miquel, Fl. Ind. Bat. I, 1, p. 859;
Wenzig, Die Eichen Ost- und Südasiens; Jahrb. Bot. Garten Berlin IV

1886, p. 234; Geo King: The Indomalayan Sp. of *Quercus* and *Castanopsis*. Ann. roy. bot. Garden Calcutta II. 1889 p. 63, tab. 57 A.

The material is not sufficient for a sure identification, ripe fruits being absent. The late Mr. Otto v. Seemen, of Berlin, to whom I had sent the material, remarked that in *Q. Reinwardtii* the young fruits are more narrowed towards the base than in No. 586. Besides, the leaves should be grey beneath, but, they are glabrous, brownish and dim. According to Mr. v. Seemen, the young fruits and the leaves of No. 586 show some features calling to mind *Q. costata* Bl., whose catkins are however much longer than those of No. 586. (O. Paulsen.)

A tall tree in the jungle on river-bank (no. 586).

Araceae.

Conf. Bot. Tidsskr. 24: 272—276 (Fl. of Koh Chang, part V).

Colocasia L. (det. Craib).

16. *C. antiquorum* Schott; Hook Fl. Br. Ind. VI. 523.
Koh Kahdat in the jungle (no. 808).

Area: Cultivated in all hot countries.

Orchidaceae.

Conf. Bot. Tidsskr. 24: 6—13 (Fl. of Koh Chang, part I).

Aerides Lour. (det. Craib).

31. *A.* sp. probably *A. falcatum* Lindl., Hook. Fl. Br. Ind. VI. 46.
Koh Kahdat, epiphytic in the littoral jungle (no. 577).

Area of *A. falcatum*: Burma.

Podochilus Bl.

32. *P. sciuroides* Rehb. f. in Bonplandia V. 41. (det. Warburg).
Klong Majum, epiphytic on *Boea* sp. (no. 823).

Area: Java.

Adactylus Rolfe.

33. *A. nudus* (R. Br.) Rolfe, Orch. Rev. IV. 329; *Apostasia nuda* R. Br.; Hook. Fl. Br. Ind. VI. 175.? (material inadequate).
Nipple (no. 881).

Area: From Assam to Malacca, Sumatra, Java.

Microstylis Nutt.

34. *M. congesta* Reichb. f., Hook, Fl. Br. Ind. V. 689.? Islet n. of Koh Chang (no. 698 e).

Area: Tropical Asia and Australia.

Concluding remarks.

The "Flora of Koh Chang", publication of which was commenced in the year 1900 (with Part I), is now, with the present issue of Part X, brought to a close.

The first eight parts appeared in the course of a few years (1900—1904), after which, however, five years elapsed before the issue of Part IX, and a further period of years before the present concluding part was ready for print. This delay, due to circumstances beyond my control, I very much regret.

Of the botanical collections brought home, all, save for a single group, have now been worked up. The exception is that of the perforating algæ, the investigation of which, entrusted to the care of M. Maurice Gomont of Paris, was brought to a standstill upon his decease.

The following botanists have taken part in the work of dealing with the collections:

O. Beccari, Firenze.	O. Nordstedt, Lund.
F. Brotherus, Helsingfors.	C. H. Ostenfeld, Copenhagen.
H. Christ, Båle.	Ove Paulsen, Copenhagen.
Carl Christensen, Copenhagen.	F. Pax, Breslau.
† C. B. Clarke, Kew.	V. A. Poulsen, Copenhagen.
W. G. Craib, Kew.	L. Radlkofer, Munich.
U. Dammer, Berlin.	F. Kölpin Ravn, Copenhagen.
A. Engler, Berlin.	Th. Reinbold, Itzehoe.
† M. Foslie, Trondhjem.	† E. Rostrup, Copenhagen.
E. Gilg, Berlin.	R. Schlechter, Berlin.
† M. Gomont, Paris.	† K. Schumann, Berlin.
E. Hackel, St. Pölten.	O. Stapf, Kew.
H. Hallier, Leiden.	F. Stephani, Leipzig.
H. Harms, Berlin.	Edw. A. Wainio, Helsingfors.
F. Heim, Paris.	O. Warburg, Berlin.
F. Kränzlin, Berlin.	Eug. Warming, Copenhagen.
G. Masee, Kew.	G. S. West, Birmingham.
Carl Mez, Halle.	† W. West, Bradford.
	E. Ostrup, Copenhagen.

It is now my pleasant duty to express my hearty thanks to each of the gentlemen above mentioned, for their obliging readiness in undertaking the work, as well as for the care with which they have carried it out.

The ten parts of which the "Flora of Koh Chang" consists, includes in all 1513 plants determined as to species, of which 194 were new to science. These species may be systematically divided as follows:

Phanerogams 521 of which 57 new; pteridophyta 72, of which 6 new; mosses (Bryales and Hepaticæ) 61, of which 23 new; algæ 669, of which 38 new; lichens 95, of which 39 new, and fungi 95, of which 31 new.

In addition, a number of species are noted under the different genera as not identified with certainty.

The material having been distributed among numerous specialists, the work upon the different sections naturally could not progress at a uniform rate, in consequence of which it was impossible to let the various groups appear in systematic order, and again, I have not always succeeded in placing all the species belonging to one family in the same part of the publication. To the present Part X is therefore appended an index, drawn up by Carl Christensen, M. Sc., which will, it is hoped, in some degree obviate the difficulties thus arising.

Especial thanks are due to my friend Dr. C. H. Ostenfeld, Inspector of the University Botanical Museum at Copenhagen, for the valuable assistance which he has afforded me in the placing and treatment of the material.

Finally, I beg to thank the Danish Botanical Society for according space to the "Flora of Koh Chang" in their Journal, and also the Carlsberg Fund, who have, besides granting me financial support towards my stay in Siam 15 years ago, and during the subsequent treatment of the material, also borne the printing expenses.

Carlsberg Laboratory, Copenhagen,
December 14, 1915.

Johs. Schmidt.