

# Hepaticae collected by F. Schmid in Ceylon and Pakistan

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## Hepaticae collected by F. Schmid in Ceylon and Pakistan

SINSKE HATTORI

### RÉSUMÉ

Plusieurs des espèces énumérées sont nouvelles pour Ceylan, et une pour la science (*Calypogeia ceylanica* Hatt. et Mizut.). De plus, deux combinaisons nouvelles ont été formées (*Bazzania obtusata* (Mitt.) Hatt. et *Jungermannia leiantha* ssp. *stephanii* (Amak.) Hatt.).

### SUMMARY

Several of the species enumerated are new to Ceylon, and one is new to science (*Calypogeia ceylanica* Hatt. et Mizut.). Moreover, two new combinations have been proposed (*Bazzania obtusata* (Mitt.) Hatt. and *Jungermannia leiantha* ssp. *stephanii* (Amak.) Hatt.).

### ZUSAMMENFASSUNG

Mehrere der aufgeführten Arten sind neu für Ceylon, und eine überhaupt für die Wissenschaft (*Calypogeia ceylanica* Hatt. et Mizut.). Überdies wurden zwei neue Kombinationen gebildet (*Bazzania obtusata* (Mitt.) Hatt. und *Jungermannia leiantha* ssp. *stephanii* (Amak.) Hatt.).

The specimens mentioned in this enumeration are deposited in the Geneva Herbarium (G). They were collected by the "Mission zoologique suisse aux Indes 1953-1954" <sup>1</sup>.

For a list of the collaborators associated to the determination work on this collection, and of the abbreviations adopted for their names, see the introduction to the preceding article (p. 275 of this volume).

***Bazzania obtusata*** (Mitt.) Hatt., **comb. nova**  $\equiv$  *Mastigobryum obtusatum* Mitt., J. Proc. Linn. Soc. Bot. 5: 106. 1861.

DISTR.: Ceylon.

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<sup>1</sup> Other results of this expedition were published in Candollea 16: 211-214. 1958, and 19: 191-198. 1964.

CEYLON: Central Province, Horton Plains, alt. 2270 m, 7-8 mars 1954, *F. Schmid 10416e* (det. M.M.).

**Bazzania tridens** (Reinw., Blume et Nees) Trev., Mem. Reale Ist. Sci. Lett. Cl. Sci. Mat. Nat. ser. 3, 4: 415. 1877.

DISTR.: Ceylon, India, Nepal, Sikkim, Bhutan, Burma, Thailand, Sumatra, Java, Celebes, Borneo, Ceram, China, Formosa, Japan, Korea.

CEYLON: province de Sabaragamuwa, Carvey, alt. 290 m, 2 févr. 1954, *F. Schmid 10252* (det. M.M.); Central Province, Nuwara-Eliya, alt. 1950 m, 27-28 févr. 1954, *F. Schmid 10363* (det. M.M.).

**Blasia pusilla** L., Sp. Pl.: 1138. 1753.

DISTR.: Europe, Asia (southward to Formosa), N. America.

PAKISTAN: Cachemire, Shekh Bela (entre Shardi et Kel), alt. 2000-2100 m, 14 août 1953, *F. Schmid 10069* (det. S.H.).

**Calypogeia ceylanica** Hatt. et Mizut., sp. nova (fig. 1).

*Planta* sterilis, major, pallide olivaceo-viridis, ± flaccida; *caulis* 20-30 mm longus, 0.35-0.4 mm, i.e. c. 10 cellulas crassus, cum foliis 3-4 mm latus, parviramosus, in sectione transversâ biconvexus, cellulis corticis et medullae aequimagnis, parietibus tenuibus, trigonis nullis; *radicellae* numerosae, longae, hyalinae; *folia* imbricata, late longitudinaliter inserta, subrecte patula, ovata, 1.7-2.3 mm longa, 1.3-1.7 mm lata, apice bidentato vel rarius obtuso, sinu dentium lunato, margine dorsale ad bas im arcuato; *foliorum cellulae* apicales 37-50 × 33-45 μ, marginales 45-85 × 72-50 μ, basales 75-140 × 50-80 μ, parietibus tenuissimis, trigonis nullis, cuticulâ laevi; *amphigastria* remota, caule 2-2.5-plo latiora, ad  $\frac{2}{3}$  biloba, sinu obtuso, lobis fere bidentulis, sinuatim inserta; *gemmae* haud visae.

DISTR.: Endemic.

CEYLON: Central Province, Nuwara-Eliya, alt. 1950 m, 24-27 févr., 1954, *F. Schmid 10334* (holotypus G, isotypus NICH).

OBS.: This species seems to be closely related to *Calypogeia longifolia* Steph. (Sp. Hep. 6: 449. 1924; type: Madagascar, *Villaume*). However, according to Stephani's original description and his figures in "Icones Hepaticarum" (ined.), *C. longifolia* is different from the present new species in that (1) leaves are oblong, almost twice as long as wide, and are obliquely spreading, (2) leaf-cells are smaller (Stephani writes "cellulae superae 27 × 27 μ, inferae 27 × 45 μ, trigonis subnullis, parietibus validis"), and (3) underleaves are about thrice as wide as the stem and their lobes are mostly acute.

As for the branching-type of this new species, three branches were confirmed to be intercalary, arising in the left half of the underleaf-axils, although the branches may arise also from the right half of underleaf-axils in this species, since we observed such branches in several other species of the same genus.

**Cheilolejeunea intertexta** (Lindenb.) Steph., Bull. Herb. Boissier 5: 79. 1897.

DISTR.: Ceylon, Andaman Islands, Singapore, Java, Borneo, Philippines, New Guinea, and other Pacific Islands.

CEYLON: Central Province, Horton Plains, alt. 2270 m, 7-8 mars 1954, *F. Schmid* 10392 (det. M.M.); *F. Schmid* 10397 (det. M.M.); *F. Schmid* 10416c, with *Schistochila sciurea* and *Lejeunea wightii* (det. M.M.).

OBS.: *Cheilolejeunea serpentina* (Mitt.) Mizut. (J. Hattori Bot. Lab. 26: 171, 1963) was synonymized by Mizutani under *C. intertexta*.

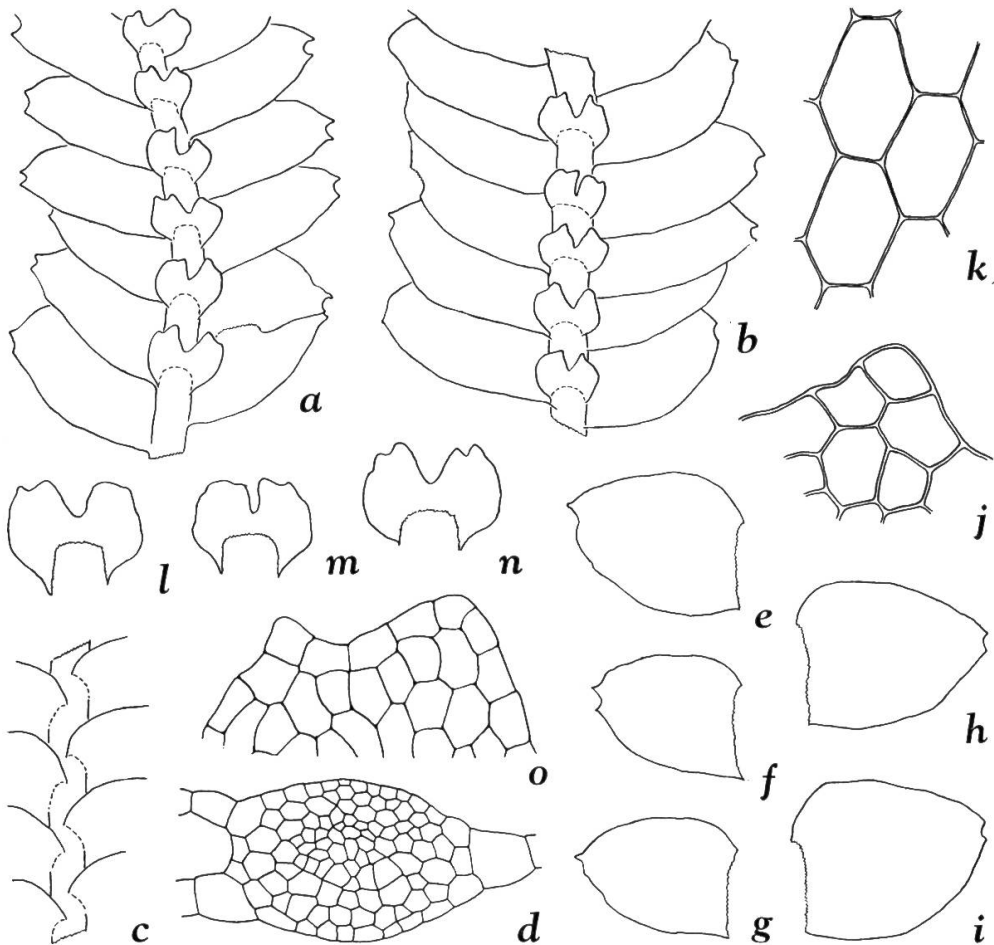


FIG. 1. — *Calypogeia ceylanica* Hatt. et Mizut.: a-b, parts of plant, ventral view,  $\times 10$ ; c, do., dorsal view,  $\times 10$ ; d, cross-section of stem,  $\times 60$ ; e-i, leaves,  $\times 10$ ; j, apical cells of leaf,  $\times 180$ ; k, median cells of leaf,  $\times 180$ ; l-n, underleaves,  $\times 180$ ; o, underleaf-lobe,  $\times 120$ . All figures were drawn from the type by M. Mizutani.

*Cheilolejeunea trifaria* (Reinw., Blume et Nees) Mizut., J. Hattori Bot. Lab. 27: 132. 1964.

DISTR.: widely distributed in tropical Asia and Oceania (including Java and New Caledonia, amongst others).

CEYLON: province de Sabaragamuwa, Carvey, alt. 290 m, 2 févr. 1954, *F. Schmid 10248* (det. M.M.); ibidem, alt. 225 m, *F. Schmid 10285 & 10288a* (det. M.M.).

**Chiloscyphus argutus** (Reinw., Blume et Nees) Nees in Gott., Lindenb. et Nees, Syn. Hep.: 183. 1845.

DISTR.: warm-temperate to tropical Asia (including Nepal and Japan amongst others) and Pacific Islands.

CEYLON: Central Province, Kandy, alt. 630 m, 16 janv. 1954, *F. Schmid 10101* (det. S.H.); Katawela, alt. ign., 18 janv. 1954, *F. Schmid 10103* (det. S.H.).

OBS.: Schiffner (Österr. Bot. Zeitschr. 60: 169-173. 1910) proposed a new genus *Heteroscyphus* for most of the tropical to subtropical taxa of *Chiloscyphus*, including the present species; but few authors have followed him.

**Conocephalum conicum** (L.) Underwood, Bot. Gaz. (Crawfordsville) 20: 67. 1895.

DISTR.: Europe, N. America, and Asia (except tropical and subtropical regions).

PAKISTAN: Cachemire, Surgun et au-dessus, alt. 3200-4000 m, 28 juillet 1953, *F. Schmid 10037 & 10038* (det. S.H.).

**Dumortiera hirsuta** (Swartz) Nees var. **nepalensis** (Tayl.) Frye et Clark, Hep. N. Amer. 1: 93. 1937.

DISTR. (of the species): Europe, Africa, Asia, Hawaii and other Pacific Islands, S. and N. America, ? New Zealand.

CEYLON: Central Province, Kandy, alt. 630 m, 12 janv. 1954, *F. Schmid 10087*; Southern Province, Deniyaya, alt. 550 m, 5 févr. 1954, *F. Schmid 10292* (det. S.H.); province de Sabaragamuwa, Pelmadulla, 19 févr. 1954, *F. Schmid 10313* (det. S.H.).

**Exormotheca ceylonensis** W. Meijer, J. Hattori Bot. Lab. 16: 72. 1956.

DISTR.: Ceylon.

CEYLON: Central Province, Galagedara, alt. 325 m, 18 janv. 1954, *F. Schmid 10108* (det. M.M.); Central Province, Urugala, alt. ign., 19 janv. 1954, *F. Schmid 10141* (det. M.M.).

**Fossombronia wondraczekii** (Corda) Dum., Rec. Obs. Jungerm.: 11. 1835.

DISTR.: Europe, N. Africa, Ceylon, Japan, Sakhalin, N. America.

CEYLON: Central Province, Urugala, alt. ign., 19 janv. 1954, *F. Schmid 10113* (det. M.M.).

**Herberta ceylanica** (Steph.) Miller, J. Hattori Bot. Lab. 28: 308. 1965.

DISTR.: Ceylon, Sikkim.

CEYLON: Central Province, Nuwara-Eliya, alt. 1950 m, 11 mars 1954, *F. Schmid 10435* (det. S.H.).

**Jungermannia (Solenostoma) clavellata** (Mitt. ex Steph.) Amak., J. Hattori Bot. Lab. 22: 69. 1960 (excl. descr.: vide Grolle, J. Jap. Bot. 40: 208-211. 1965).

DISTR.: Sikkim, Nepal.

PAKISTAN: province de la Frontière NW, alpage au-dessus de Gittidas, alt. 4300 m, 20 juillet 1953, *F. Schmid 10035* (det. T.A.).

**Jungermannia** (*Jungermannia*) **leiantha** Cf.: auteurs subsp. **stephanii** (Amak.) Hatt., **comb. nova** ≡ *Jungermannia lanceolata* Cf.: auteurs subsp. *stephanii* Amak., J. Hattori Bot. Lab. 22: 71. 1960. Syn.: *Solenostoma cylindricum* Steph., Sp. Hep. 6: 80. 1917 ≡ *Jungermannia cylindrica* (Steph.) Hatt., Bull. Tokyo Sci. Mus. 11: 32. 1944 (non Wallr. in Bluff et Fingerh., Comp. Fl. Germ. 3: 63. 1831).

DISTR.: Himalayas, Japan, Korea; subsp. *leiantha*: Europe, Siberia, N. America.

CEYLON: Central Province, Nuwara-Eliya, alt. 1950 m, 27-28 févr. 1954, *F. Schmid 10372* (det. S.H.).

**Jungermannia** (*Plectocolea*) **polyrhiza** Hook. ex Lehm., Pug. Pl. 6: 34. 1834.

DISTR.: India (including Himalayas) to Malay Peninsula, Java.

CEYLON: Central Province, Urugala, alt. ign., 19 janv. 1954, *F. Schmid 10132* (det. T.A.).

**Lejeunea** (*Microlejeunea*) **punctiformis** Tayl., London J. Bot. 5: 398. 1846.

DISTR.: Ceylon, India, Sikkim, Formosa, Ryukyu Islands, Japan.

CEYLON: Central Province, Mount Vernon, alt. ign., 24 janv. 1954, *F. Schmid 10202* (det. M.M.).

**Lejeunea wightii** Lindenb. in Gott., Lindenb. et Nees, Syn. Hep.: 379. 1845.

DISTR.: India (including NW Himalayas), Sikkim, Nepal, Formosa, Borneo, Philippines.

CEYLON: Central Province, Mount Vernon, alt. ign., 24 janv. 1954, *F. Schmid 10188* & *10196* (det. M.M.); Western Province, Labugama, alt. 60 m, 29 janv. 1954, *F. Schmid 10228* (det. M.M.); Central Province, Horton Plains, alt. 2270 m, 7-8 mars 1954, *F. Schmid 10416c* (det. M.M.).

OBS.: The record of *Lejeunea wrightii* Gottsche from Nepal (Noguchi, Takaki & Inoue, Bull. Natl. Sci. Mus. 9: 386. 1966) seems to be a misprint and to refer in fact to this species (*L. wightii*).

**Lepicolea yakusimensis** (Hatt.) Hatt., J. Hattori Bot. Lab. 10: 42. 1953.

DISTR.: Japan (Yakushima Island), Ceylon, Malay Peninsula.

CEYLON: Central Province, Horton Plains, alt. 2770 m, 7-8 mars 1954, *F. Schmid 10387a* & *10416g* (det. M.M.); Central Province, Nuwara-Eliya, alt. 1950 m, 11 févr. 1954, *F. Schmid 10424* (det. M.M.).

**Lopholejeunea subfusca** (Nees) Steph., Hedwigia 29: 16. 1890.

DISTR.: subtropical to tropical regions of Asia (northward to E. Himalayas, China and Japan, whereas southward to New Guinea), Pacific Islands, Africa, and N. America.

CEYLON: Western Province, Labugama, alt. 60 m, 29 janv. 1954, *F. Schmid 10228*, with *Lejeunea wightii* (det. M.M.).

**Marchantia paleacea** Bertol., *Opusc. Sci.* 1: 242. 1817.

DISTR.: Himalayas and other montane areas in India, China, Japan, Java, Sumatra, Africa, Europe, Azores, N. America, Guatemala, Hawaii, ? New Zealand, ? Samoa, ? Tahiti, ? Fiji.

PAKISTAN: province de la frontière NW, Mahandri, forêts et prés, alt. 1620 m, 26 juin 1953, *F. Schmid 10002* (det. T.A.).

**Marchantia palmata** Reinw., *Blume et Nees, Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur.* 12: 193. 1824.

DISTR.: Java, India, China, Tonkin, Philippines, New Guinea.

CEYLON: Central Province, Urugala, alt. ign., 19 janv. 1954, *F. Schmid 10156* (det. T.A. & S.H.).

**Marchantia polymorpha** L., *Sp. Pl.*: 1603. 1753.

DISTR.: widely distributed in boreal to warm-temperate regions of the world.

PAKISTAN: province de la frontière NW, Lulu Sar, alt. 4700 m, 10-12 juillet 1953, *F. Schmid 10008* (det. T.A.); Cachemire, Ulternullah, derrière Baltit, pâturages secs, alt. 2600-3250 m, 18 juin 1954, *F. Schmid 10464* (det. T.A.).

**Notoscyphus lutescens** (Lehm. et Lindenb.) Mitt. in *Lehmann, Fl. Vitiensis*: 407. 1871.

DISTR.: Japan, Ryukyu Islands, Formosa, China, India, and other tropical to subtropical regions of Asia and Pacific Islands (including Philippines, Borneo, Hawaii and Samoa).

CEYLON: Glenloch, alt. ign., 22 janv. 1954, *F. Schmid 10164* (det. T.A.); Western Province, Labugama, alt. 60 m, 30 janv. 1954, *F. Schmid 10239* (det. T.A.); province de Sabaragamuwa, Carvey, alt. 290 m, 2 févr. 1954, *F. Schmid 10244 & 10245* (det. T.A.).

? **Pallavicinia indica** Schiffn., *Denkschr. Kaiserl. Akad. Wiss. Math.-Naturwiss. Kl.* 67: 183. 1898.

DISTR.: Sumatra, Malacca, Singapore, Java, Borneo, China, Nepal.

CEYLON: Kotawela, alt. ign., 18 janv. 1954, *F. Schmid 10105*; province de Sabaragamuwa, Niziella, alt. 225 m, 5 févr. 1954, *F. Schmid 10278 & 10288* (det. M.M.).

**Pellia endiviifolia** (Dicks.) Dum., *Rec. Obs. Jungerm.*: 27. 1835.

DISTR.: Europe, N. America, Asia; widely distributed in boreal to warm-temperate regions.

PAKISTAN: Cachemire, Ulter Nullah, derrière Baltit, pâturages secs, alt. 2600-3250 m, 18 juin 1954, *F. Schmid 10463* (det. S.H.).

**Plagiochasma nepalense** (Lehm. et Bischoff) Steph., Sp. Hep. 1: 81. 1898.

DISTR.: Nepal; new to Ceylon !

CEYLON: Central Province, Mount Vernon, alt. ign., 24 janv. 1954, *F. Schmid 10220* (det. S.H.).

**Plagiochila belangeriana** Lindenb., Sp. Hep.: 109. 1842.

DISTR.: Japan (Yakushima Island), Ryukyu Islands, Formosa, Java, Sumatra, Philippines, New Guinea, Hawaii, New Caledonia, Tahiti, etc.

CEYLON: Central Province, Nuwara-Eliya, alt. 1950 m, 27-28 févr. 1954, *F. Schmid 10342c* (det. H.I.).

**Plagiochila flexuosa** Mitt., J. Proc. Linn. Soc. London 5: 94. 1861.

DISTR.: Sikkim, Bengal (India), Japan; new to Ceylon !

CEYLON: Central Province, Nuwara-Eliya, alt. 1950 m, 27-28 févr. 1954, *F. Schmid 10370* (det. H.I.).

**Plagiochila gracilis** Lindenb. et Gott. in Gott., Lindenb. et Nees, Syn. Hep.: 632. 1847.

DISTR.: Java, Philippines (Luzon); new to Ceylon !

CEYLON: Central Province, Nuwara-Eliya, alt. 1950 m, 27-28 févr. 1954, *F. Schmid 10379* (det. H.I.).

? **Plagiochila kurzii** Steph., Sp. Hep. 2: 292. 1903.

DISTR.: Andaman Islands, Java, Borneo.

CEYLON: Central Province: Nuwara-Eliya, alt. 1950 m, 27-28 févr. 1954, *F. Schmid 10378* (det. H.I.).

**Plagiochila lobulata** Schiffn., Denkschr. Kaiserl. Akad. Wiss. Math.-Naturwiss. Kl. 70: 191. 1900.

DISTR.: Java, Malay Peninsula, Singapore; new to Ceylon !

CEYLON: Central Province, Kandy, alt. 630 m, 16 janv. 1954, *F. Schmid 10094* (det. H.I.).

**Plagiochilion oppositus** (Reinw., Blume et Nees) Hatt., Biosphaera 1: 7. 1947.

DISTR.: Formosa, Vietnam, Burma, Ceylon, Sumatra, Java, Celebes, Borneo, Philippines, New Guinea, Pacific Islands.

CEYLON: Central Province, Horton Plains, alt. 2270 m, 7-8 mars 1954, *F. Schmid 10416d* (det. H.I.).

**Preissia quadrata** (Scop.) Nees, Naturg. Eur. Leberm. 4: 135. 1838.

DISTR.: Europe, N. America (incl. Mexico to the south, Greenland to the north), Sakhalin, Siberia, Japan, Himalayas, Kashmir.



PAKISTAN: Cachemire, Kar-Gah derrière Gilgit, pentes sèches et sources, alt. 2600-2900 m, 15 juillet 1954, *F. Schmid 10475* (det. M.M.).

**Schistochila sciurea** (Nees) Schiffn., *Nova Acta Acad. Caes. Leop.-Carol. German. Nat. Cur.* 60: 251. 1893.

DISTR.: Java, Sumatra, Celebes, Borneo, Amboina, Malay Peninsula; var. *dorsipila*: Philippines.

CEYLON: Central Province, Horton Plains, alt. 2270 m, 7-8 mars 1954, *F. Schmid 10416c*, with *Lejeunea wightii* and *Cheilolejeunea intertexta* (det. S.H.).