
Report

Taxonomical studies of mosses of Seram and Ambon (Moluccas, East Malesia) collected by Indonesian-Japanese Botanical Expeditions, X.

Bartramiaceae, Brachytheciaceae, Bryaceae, Ditrichaceae, Erpodiaceae, Hylocomiaceae, Hypnaceae (a part), Mniaceae, Orthotrichaceae, Regmatodontaceae, and Splachnaceae with corrections/additions to the previous reports.

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Abstract

The tenth and the final report of the series treating mosses of Seram and Ambon Islands includes the Bartramiaceae (four genera and eight species), Brachytheciaceae (1-1), Bryaceae (6-16), Ditrichaceae (2-3), Erpodiaceae (1-1), Hylocomiaceae (1-1), Hypnaceae (6-9; only a part), Mniaceae (3-5), Orthotrichaceae (6-24), Regmatodontaceae (1-1), Splachnaceae (1-1), and corrections/additions to the previous reports.

Key words: Ambon, flora, the Mollucas, mosses, Seram

Introduction

This is the tenth and the final report of the series, mosses from Seram and Ambon Islands based on the collections by Indonesian-Japanese Botanical Expeditions in 1984-5 and 1986. It includes the Bartramiaceae, Brachytheciaceae, Bryaceae, Ditrichaceae, Erpodiaceae, Hylocomiaceae, Hypnaceae (only a part), Mniaceae, Orthotrichaceae, Regmatodontaceae, Splachnaceae and corrections/additions to the previous reports. All the specimens cited here except the holotype of *Calomnion ceramensis* are deposited in HYO and some duplicates distributed to BO, FH, L, MO, and NY. In the citation of specimens, the collector's name (H. Akiyama) is omitted for economizing space. In addition to the references cited under each species, we used the following ones for identification; Koponen and Norris (1984, 1985, 1996), Vitt et al. (1993, 1995), and Virtanen (1996).

Bartramiaceae

Bartramia Hedw.

B. hallerana Hedw.

Central Seram: Manusela N. P., summit of O'Wae Puku, 2800-2900 m alt., C-8978.

Hab. Growing in crevice of limestone boulder at an alpine meadow.

Dist. Sulawesi and New Guinea in Malesia; widespread in northern hemisphere.

Breutelia (Bruch & Schimp.) Schimp.

B. arundinifolia (Duby) M. Fleisch.

Central Seram: Manusela N. P., Wae Huhu - O'Wae Puku, 2420 m alt., C-8899; *ibid.*, O'Wae Puku - Gunung Binaiya, 2800-2960 m alt., C-9008 & C-9024.

Hab. Growing on moist humus in upper montane forests.

Dist. Widespread in Asia and Pacific.

Leiomela (Mitt.) Broth.

L. javanica (Renauld & Cardot) Broth.

Central Seram: Tehoru, Ena Puti - Gunung Sinaunia, 2200 m alt., *C-15219*.

Hab. On trunk of a tree fern in a mossy forest.

Dist. Widespread in Malesia.

Philonotis Brid.

P. calomicra Broth.

East Ambon: Air Besar, 10 m alt., *C-2364*. Central Seram: Tehoru, Saunulu - Wae Salune, 0-140 m alt., *C-14562*; *ibid.*, Saunulu - Piliانا, 140 m alt., *C-14841*. West Seram: Taniwel - Buria, 100 m alt., *C-9953*; Kairatu, in the vicinity of Honitetu, 450 m alt., *C-16790* & *C-16797*.

Hab. Growing on mesic to wet soil or on boulder covered with humus.

Dist. Southern and eastern parts of Malesia, including Sulawesi and New Guinea (Eddy 1996).

P. hastata (Duby) Wijk & Margad.

Central Seram: Manusela N. P., Kanikeh - Wae Angsela, 790 m alt., *C-8623bis*; *ibid.*, Kanikeh - Selmena, 620-820 m alt., *C-9090a*; *ibid.*, Hatu - Piliانا, 100 m alt., *C-10195*; *ibid.*, Hatumete - Hoale Pass, 670 m alt., *C-10583*; Tehoru, Wae Nua, 110-190 m alt., *C-14657*; Tehoru, Wae Pasola Hatu - Gunung Meseleinan, 10 m alt., *C-16242*; *ibid.*, Hatumete - Losa, 370 m alt., *C-16496*; *ibid.*, Nihehata - Hatumete, 180 m alt., *C-16782*. West Seram: Taniwel - Buria, 100 m alt., *C-9946*; Tanahgoyang - Kali Ani, 5-100 m alt., *C-15677*; in the vicinity of Tihulale, 5-90 m alt., *C-15690*.

Hab. Growing on moist to wet rocks and soil in rivers and streams.

Dist. Pantropical.

P. roylei (Hook.f.) Mitt.

West Seram: Taniwel, 150 m alt., *C-9981*.

Hab. On moist soil by a stream in a secondary lowland forest.

Dist. Tropical and subtropical Asia.

P. secunda (Dozy & Molk.) Bosch & Sande Lac.

Central Seram: Manusela N. P., Kanikeh - Selmena, 620-820 m alt., *C-9090b*; Tehoru, Ena Puti - Gunung Sinaunia - Liang Pipileina, 2270 m alt., *C-15331*; *ibid.*, Ena Puti - Hau Harnoe, 1040 m alt., *C-15397*.

Hab. Growing on mesic-moist humus at open place or damp field

Dist. Tropical and subtropical Asia (Eddy 1996).

P. turneriana (Schwägr.) Mitt.

Central Seram: Manusela N. P., Gunung Uwelehu, 630-1000 m alt., *C-9250*; Tehoru, along Wae Nua,

110-190 m alt., *C-14652*. West Seram: Kairatu, in the vicinity of Honitetu, 450 m alt., *C-16805*.

Hab. On soil-bank at open and sunny places and wet limestones in a lowland forest.

Dist. Widespread in Asia.

Brachytheciaceae

Palamocladium Müll. Hal.

P. leskeoides (Hook.) Britt.

Central Seram: Manusela N. P., summit of Gunung O'Wae Puku, 2860 m alt., *C-8971* and *C-9000bis*; between Gunung O'Wae Puku and Gunung Binaiya, 2800-2960 m alt., *C-9013*.

Hab. On humus and *Cyathea* trunks in alpine meadows.

Dist. Cosmopolitan.

Note: Seram plants have distinct auriculate branch leaves with costae not reaching the apices (Hofmann 1997). Lamina cells are porose and thick-walled.

Bryaceae

Anomobryum Schimp.

A. julaceum (Schrad. ex P. Gaertn., B.Mey. & Scherb.) Schimp.

Central Seram: Manusela N. P., summit of Gunung O'Wae Puku, 2890 m alt., *C-8954bis*.

Hab. On *Cyathea* trunk in an alpine meadow.

Dist. Cosmopolitan.

Note. Forming a dense mat with *Leptodontium flexifolium* and *Pohlia elongata*.

Brachymenium Schwägr.

B. exile (Dozy & Molk.) Bosch & Sande Lac.

Central Seram: Tehoru, Hatumete - Hoale Pass, 150 m alt., *C-10465*; *ibid.*, Saunulu - Wae Salune, 0-140 m alt., *C-14567*.

Hab. On soil at sunny and open place.

Dist. East and southeast Asia and Hawaii.

B. gracile E.B. Bartram

Central Seram: Manusela N. P., summit of Gunung O'Wae Puku, 2800-2900 m alt., *C-8977b*.

Hab. Forming a thin, compact mat on limestone boulder at alpine meadow.

Dist. New Guinea.

Note. Seram plants show intermediate leaf apex morphology between *Brachymenium wabagense* E.B. Bartram and *B. gracile*, that is, costae are shortly percurrent and sometime become transparent as in the case of *Grimmia* spp. We follow here the

opinion of Eddy (1996) who regarded the two species conspecific.

B. indicum (Dozy & Molk.) Bosch & Sande Lac.

Central Seram: Tehoru, in the vicinity of Hatumete, 5 m alt., *C-10152*.

Hab. Growing on stone-wall in a field.

Dist. Tropical and subtropical Asia and Pacific Islands.

B. nepalense Hook.

Central Seram: Hatuolo, Gunung Uwelehu, 630-1000 m alt., *C-9238*; Sawai, Gunung Musisi, 1070 m alt., *C-9810*; Wolu, Wae Waya - Kokhan, 1100 m, alt., *C-10432*; Tehoru, Hatumete - Hoale Pass, 1430 m alt, *C-10671*; *ibid.*, 1050 m alt., *C-10622*; Tehoru, en route from Piliana to Gunung Watane, 1140 m alt., *C-14968*; Gunung Watane, 1860 m alt., *C-15041*; Wae Pasola Hatu - Gunung Meseleinan, 940 m alt., *C-16154*; Tehoru, Wae Pasola Hatu - Gunung Meseleinan, 1000 m alt., *C-16211*.

Hab. On trunks and branches of fallen trees

Dist. Subcosmopolitan.

Note. The following specimens are much smaller in plant size (to 8 mm long) than the typical plants of *B. nepalense*. Their leaves, however, are well-bordered at margins.

Central Seram: Manusela N. P., Gunung Uwelehu near Hatuolo, 630-1000 m alt., *C-9238*; Sawai, Gunung Musisi, 1070 m alt., *C-9810*.

Bryum Hedw.

B. apiculatum Schwägr.

Central Seram: Tehoru, Hatumete - Hoale Pass, 1690 m alt., *C-10703*; *ibid.*, Wae Nua - Saunulu, 40 m alt., *C-14751*; *ibid.* Hatumete - Losa, 320 m alt., *C-16472* & *C-16479*. West Seram: in the vicinity of Honitetu, *C-16806*.

Hab. On rock in a forest slope, on boulders beside a river at open and sunny places.

Dist. Tropical and subtropical Asia, Polynesia and Australasia.

Note. Although well-appendiculate endostome cilia indicate its affinity in *Bryum*, leaf morphologies are similar to those of *Pohlia*. Thus we tentatively named Seram plants as *B. apiculatum* in very wide sense.

B. argenteum Hedw.

Central Seram: Manusela N. P., Wae Huhu - Gunung O'Wae Puku, 2680 m alt., *C-8932*; Manusela N. P., summit of Gunung O'Wae Puku, 2890 m alt., *C-8952* & *C-8953*; Manusela N. P., summit of Gunung Binaiya, 2920 m alt., *C-9020*; Tehoru, Hatumete - Losa, 400 m alt., *C-16466*.

Hab. On soil at sunny and open places in alpine

meadows and fields in lower elevation.

Dist. Cosmopolitan.

B. billardieri Schwägr.

Central Seram: Manusela N. P., around the summit of Gunung O'Wae Puku, 2870 m alt., *C-8945* & *C-9000*; Tehoru, Nihehata - Gunung Hoale Besar, 1830 m alt., *C-16687*.

Hab. Forming a dense mat on *Cyathea* trunks at alpine meadows or limestone boulders covered with soil in upper montane forests, intermingled with *Campylopus crispifolius*, *Duthiella* sp., *Frullania* sp., *Glyphothecium sciuroides*, *Hymenodon sericeus*, *Plagiomnium integrum*, *Pohlia elongata*, and *Zygodon intermedius*.

Dist. Pantropical and subtropical.

Note. Seram plants lack rosette-like foliation at the top of upright stems and filamentous gemmae. In dry conditions, leaves are strongly contorted.

B. cf. bicolor Dicks.

Central Seram: Manusela N. P., around the summit of Gunung O'Wae Puku, 2800-2900 m alt., *C-8977a*.

Hab. On limestone boulder in an alpine meadow.

Note. Seram plants have apiculate leaves, which resemble those of the genus *Brachymenium*. In addition, laminal cells are strongly thick-walled.

B. clavatum (Schimp.) Müll. Hal.

Central Seram, Hatumete, 5 m alt., *C-10151*.

Hab. Growing on stone-wall at sunny and open place in a field.

Dist. Widespread throughout tropical to warm-temperate regions (Eddy 1996).

B. leucophyllum Dozy & Molk.

Central Seram: Manusela N. P., Wae Huhu - Gunung O'Wae Puku, 2680 m alt., *C-8931*.

Hab. on limestone boulder intermingled with *Oxstegus cuspidatus* at sunny and open place in mountain ridge.

Dist. Widespread in Malesia.

Note. Seram plants has following features; costa of leaves are strongly excurrent, pale in color and often forked above (but it is not exceptional in the genus even in the most popular species, *Brachymenium exile*); seta are 1.0-1.2 cm long; capsules are shorter than 1 mm long. Upper laminal cells are evenly thick-walled, which differ from the description given by Eddy (1996).

B. perdecurrens E.B. Bartram

Central Seram: Hatumete - Hoale Pass, 800 m alt., *C-10595*.

Hab. On boulder covered with thin humus at sunny and open place.

Dist. New Guinea.

Note. Stem are slender and to 3 cm high, bearing a number of rhizoids. Newly reported outside New Guinea.

B. tuberosum Mohamed & Damanhuri (Figures 1-9).

Central Seram: Wae Pasola Hatu - Gunung Meseleinan, 880 m alt., *C-16100*.

Hab. On soil in a lower montane forest.

Dist. India, Malaysia, Australia.

Note. Seram plants show quite similar morphologies comparing to Malaysian and Indian plants (Mohamed & Damanhuri 1990; Nair et al. 2004). Seram plants are flaccid and pale-red in color; stems are loosely foliated with obovoid leaves; leaf margins weakly bordered; costa reaching leaf apex; rhizoidal tubers, discoid in shape and reddish brown in color, are abundantly produced.

Orthodontium Schwägr.

O. inflatum Dozy & Molk.

Central Seram: Tehoru, Nihehata - Gunung Hoale Besar, 1400 m alt., *C-16642*. West Seram: Taniwel, Taniwel - Buria, 240 m alt., *C-9960*.

Hab. On soil and rotten log in forests.

Dist. Widespread in south and southeast Asia.

Rhodobryum (Schimp.) Limpr.

R. aubertii (Schwägr.) Thér.

Central Seram: Manusela N. P., Selmena - Maraina, 700-800 m alt., *C-9107*; *ibid.*, Gunung Uwelehu in the vicinity of Hatuolo, 630-1000 m alt., *C-9210*; *ibid.*, Gunung Hausane in the vicinity of Elemata-Makualaina, 400-650 m alt., *C-9389*; Sawai, low mountain beside a seacoast, 0-130 m alt., *C-9522*; *ibid.*, Wae Niniyoa - Wae Puo in the vicinity of Sawai, 320 m alt., *C-9564*; Sawai, Rumah Sokat Batu, 170 m alt., *C-9920*; Tehoru, Hatu - Piliana, 150 m alt; *ibid.*, Saunulu - Batu Kapal, 200 m alt., *C-15443*; Hatumete - Losa, 400 m alt., *C-16480*. West Seram: Taniwel, Batu Putih - Batu Soli, 350 m alt., *C-100033*.

Hab. Usually growing on limestone in lowland forests.

Dist. Tropical and subtropical regions in the Old World.

Note. This species does not have distinct umbellae as in the case of *Rhodobryum giganteum* and thus resembles *Bryum* spp., but can be distinguished by complete absence of stereids in the costa.

R. giganteum (Schwägr.) Paris

Central Seram: Manusela N. P., Kanikeh - Wae Angsela, 1060 m alt., *C-8680*; Manusela N. P.,

Gunung O'Wae Puku - Gunung Binaiya, 2800-2960 m alt., *C-9028*; Sawai, Gunung (Mt. Roihelu, 1480 m alt., *C-9855*; Tehoru, Hatumete - Hoale Pass, 1450 m alt., *C-10633*; Tehoru, Nihehata - Gunung Hoale Besar, 1790 m alt., *C-16673*.

Hab. Growing in humus and forming large populations.

Dist. Tropical to warm-temperate Asia and East Africa.

Ditrichaceae

Ditrichum Hampe

D. difficile (Duby) M. Fleisch.

Central Seram: Manusela N. P., Gunung O'Wae Puku - G. Binaiya, 2800-2960 m alt., *C-9027*.

Hab. On soil in sparse thicket.

Dist. Pantropical.

D. aff. colijnii Dixon

Central Seram: Manusela N. P., Kanikeh - Selmena, 620-820 m alt., *C-9077*; Tehoru, Hatu - Piliana, 100 m alt., *C-10193*.

Hab. On moist sandy soil and limestone crevice along a river at open and sunny places.

Note. Seram plants bear sporophytes freely: Setae are to 2 cm in length, brownish yellow, capsules are straight, not furrowed at all in dry conditions, and peristome are linear and papillose. Short triangular-lanceolate leaves with short-rectangular to quadrate lamina cell throughout and revolute margins differ from typical *D. colijnii* reported from New Guinea (Eddy 1988).

Garckea Müll. Hal.

Garckea flexuosa (Griff.) Margad. & Nork.

West Seram: Taniwel - Buria, 140 m alt., *C-9956* & *C-9958*; *ibid.*, 200 m alt., *C-10114*; Tihulale, 5-90 m alt., *C-15693*; Kairatu, in the vicinity of Honitetu, 450 m alt., *C-16800*; Kairatu, Gunung Okale - Air Nuij, 450 m alt., *C-16871*.

Hab. On exposed soil and clay, especially road and roadside bank.

Dist. Subcosmopolitan.

Erpodiaceae

Solmsiella Müll. Hal.

S. biseriata (Austin) Steere

West Seram: Taniwel, 280 m alt., *C-9973bis*.

Hab. On tree trunk in a secondary lowland forest beside a river.

Dist. Asia and North America.
Note. Seram plants bear sporophytes.

Hylocomiaceae

Macrothamnium M. Fleisch.

M. javense M. Fleisch.

Central Seram: Manusela N. P., Wae Huhu -
Gunung O'Wae Puku, 2000-2860 m alt., C-8869.

Hab. On soil in an upper montane forest.

Dist. Warm-temperate regions in Asia.

Hypnaceae (excluding *Ectropothecium*)

Ctenidiadelphus M. Fleisch.

C. spinulosus M. Fleisch.

Central Seram: Wahai, Roho - Kanikeh, 60-600 m
alt., C-8461.

Hab. On tree branch in a secondary forest.

Dist. Borneo, Sri Lanka.

Ctenidium (Schimp.) Mitt.

C. malacobolum (Müll. Hal.) Broth.

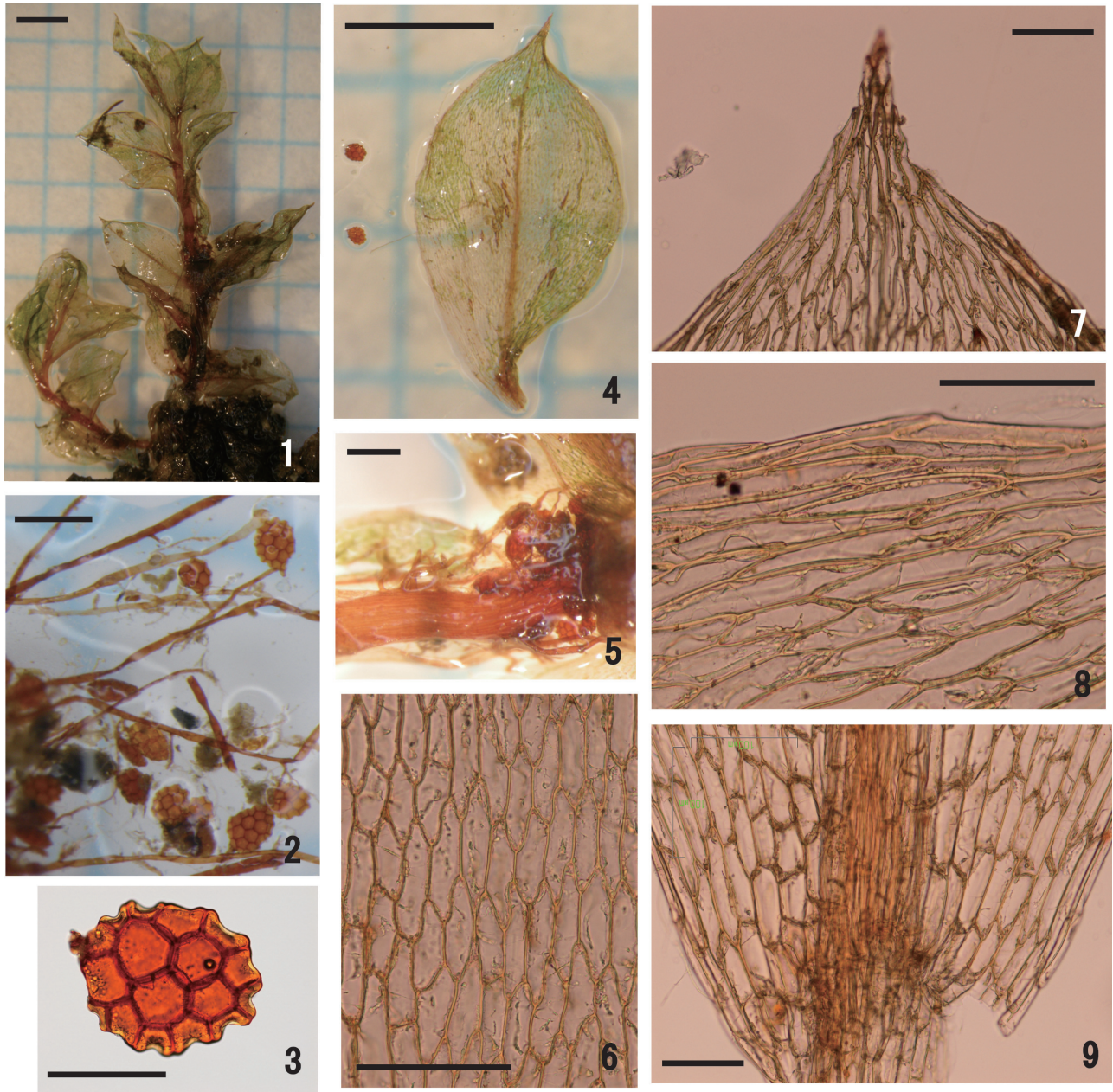


Figure 1-9. *Bryum tuberosum* (Akiyama C-16100, HYO). 1. Wet plant. 2. Rhizoids and rhizoidal tubers. 3. Close-up of a rhizoidal tuber. 4. Stem leaf and two rhizoidal tubers. 5. Rhizoidal tubers in leaf axils. 6. Median lamina cells. 7. Apex of a stem leaf. 8. Border of median part of a stem leaf. 9. Stem leaf base.

Use scale bars as 1 mm for 1 & 4; 0.25 mm for 2 & 5; 0.1 mm for the others.

Central Seram: Manusela N. P., Wae Angsela - Wae Huhu, 1290-2000 m alt., *C-8763* & *C-8844*.

Hab. On soil and rocks in montane forests.

Dist. East and Southeast Asia and Melanesia.

C. polychaetum (Bosch & Sande Lac.) Broth.

Central Seram: Manusela N. P., Wae Angsela - Wae Huhu, 1290-2000 m alt., *C-8767*; *ibid.*, Sawai, Wae Puo - Wae Ili, 800-1230 m alt., *C-9670* & *C-9880*; Manusela N. P., Tehoru, Wae Waya - Kokhan, 900-1230 m alt., *C-10420*; *ibid.*, Hatumete - Hoale pass, 1160-1760 m alt., *C-10695* & *C-10696*.

Hab. On soil and rock in montane forests.

Dist. Malesia (Java, Borneo, Philippines), New Hebrides (Nishimura 1985).

Ectropotheciella M. Fleisch.

E. distichophylla (Hampe) M. Fleisch.

Central Seram: Wahai, Wasa - Roho, 60 m alt., *C-2468*; Selmena - Maraina, 700-800 m alt., *C-9106*; Manusela N. P., Gunung Uwelehu near Hatuolo, 630-1000 m alt., *C-9217*; Hatuolo - Elemata-Makualaina, 100-600 m alt., *C-9228* & *C-9231*; Gunung Hausane near Elemata-Makualaina, *C-9394*; Kaloa - Pasahari, 20-120 m alt., *C-9431*.

Hab. On the base of tree trunks in disturbed lowland forests.

Dist. Widespread in Malesia.

Isopterygium Mitt.

I. cf. pohliaecarpum (Sull. & Lesq.) A. Jaeger

West Seram: Gunung Nakaela in the vicinity of Buria, 300-400 m alt., *C-10142*.

Hab. On soil in a disturbed forest.

Dist. Tropical to warm-temperate regions in Asia.

Stereodontopsis R.S. Williams

S. excavata (Broth.) Ando

Central Seram: Wahai, Elemata-Makualaina, ca. 100 m alt., *C-9307*.

Hab. On fallen tree branch in a lowland forest.

Dist. Philippines, Sulawesi, New Guinea.

Note. Seram plants bear a number of asexual propagules in leaf axils.

Vesicularia (Müll. Hal.) Müll. Hal.

V. dubyana (Müll. Hal.) Broth.

Central Seram: Maraina - Hatuolo, 600-700 m alt., *C-9140*; *ibid.*, Hatuolo - Elemata-Makualaina, 100-600 m alt., *C-9295* & *C-9296*.

Hab. On rocks submerged in streams.

Dist. Tropical and subtropical Asia.

V. montagnei (Bel.) M. Fleisch.

Central Seram: Wahai - Wasa, 70-160 m alt., *C-2419*; *ibid.*, Wahai, Roho - Kanikeh, 60-600 m alt., *C-8462*; *ibid.*, in the vicinity of Elemata-Makualaina, ca. 100 m alt., *C-9322*; *ibid.*, Gunung Hausane in the vicinity of Elemata-Makualaina, 400-650 m alt., *C-9382*.

Hab. On rocks submerged in streams.

Dist. Tropical and subtropical Asia.

Note. Complanate and pinnately branching pattern and widely ovate leaves with suddenly acuminate short apex are characteristic to the species.

V. reticulata (Dozy & Molk.) Broth.

Central Seram: Hatuolo - Elemata-Makualaina, 100-600 m alt., *C-9270*; Sawai - Wae Niniyoa, 0-60 m alt., *C-9536*.

Hab. On rocks submerged in streams.

Dist. Tropical and subtropical Asia.

Note. Shrunk leaves with gradually acuminate apex and wider and short-rhomboid laminal cells are diagnostic features of this species.

Mniaceae

Mnium Hedw.

M. lycopodioides Schwägr.

Central Seram: Tehoru, Gunung Sinaunia - Liang Pipileina, 2070 m alt., *C-15324*.

Hab. On limestone boulder in a mossy forest.

Dist. Widely distributed in East Asia and disjunctly distributed in New Guinea (Koponen and Norris 1983: 33).

Note. Seram plants show similar morphologies found in New Guinean plants, such as weak leaf border and smooth costa. This is a second report of the species from Malesia region.

Plagiomnium T.J. Kop.

P. integrum (Bosch & Sande Lac.) T.J. Kop.

Central Seram: Manusela National Park, Kanikeh - Wae Angsela, 750 m alt., *C-8624*; *ibid.*, 1100-1160 m alt., *C-8696* and *C-9047*; *ibid.* Wae Angsela - Wae Huhu, 1810 m alt., *C-8828*; *ibid.*, Gunung O'Wae Puku - Gunung Binaiya, 2900 m alt., *C-9021*; Maraina - Hatuolo, 600-700 m alt., *C-9150*; Gunung Uwelehu near Hatuolo, 630-1000 m alt., *C-9248*; Sawai, Wae Niniyoa - Wae Puo, 200-1000 m alt., *C-9561*; *ibid.*, Wae Puo - Wae Ili, 1080 m alt., *C-9694* and *C-9753*; Tehoru, Wolu - Wae Waya, 910 m alt., *C-10362*; *ibid.*, Hatumete - Hoale Pass, 960

m alt., *C-10620*; *ibid.*, 1660 m alt., *C-10701*; *ibid.*, Wae Nua - Gunung Mapahue, 990 m alt., *C-14767*; *ibid.*, Piliana - Gunung Watane, 650 m alt., *C-14865*; *ibid.*, Hau Harnoe - Ena Puti, 2080 m alt., *C-15127*; *ibid.*, Gunung Sinaunia - Liang Pipileina, 2150 m alt., *C-15279*; *ibid.*, Wae Pasola Hatu - Gunung Meseleinan, 700 m alt., *C-16088*; *ibid.*, Losa - Nihehata, 1110 m alt., *C-16584*.

Hab. On decaying, rotten logs, soils, humus, and boulders covered with soils in lower and upper montane forests and subalpine meadows.

Dist. Widely distributed in East and Southeast Asia and Oceania.

Note. For distinguishing features from *P. rhynchophorum*, see a note under the species.

P. rhynchophorum (Harv.) T.J. Kop.

Central Seram: Manusela National Park, Wae Huhu - Gunung O'Wae Puku, 2520 m alt., *C-8923*.

Hab. On humus at rather sunny place at mountain steep slopes covered with *Cyathea* and *Rhododendron* vegetation.

Dist. Pantropical.

Note. Plants of the above specimen are synoicous (antheridia and archegonia in the same inflorescence) and have well-differentiated juxtacostal cells much larger than median laminal cells. On the other hand, specimens listed below show "intermediate" features between *P. rhynchophorum* and *P. integrum*; juxtacostal lamina cells are larger than median lamina cells as in the case of *P. rhynchophorum*, while dioicous sexuality and well-deccurent leaf bases suggest affinity to *P. integrum*. They are tentatively identified as *P. rhynchophorum* here, but further studies are needed to know their real identity. According to Koponen and Norris (1981, 1983), *P. rhynchophorum* does not occur in New Guinea.

Central Seram: Kanikeh - Wae Angsela, 600-750 m alt., *C-8671*; Tehoru, Wae Waya - Kokan in the vicinity of Wolu, 1090 m alt., *C-10427*; *ibid.*, Piliana - Hau Harnoe, 1250 m alt., *C-15086*; *ibid.*, Gunung Sinaunia - Liang Pipileina, 2200 m alt., *C-15251-b* (forming a compact mat on a tree branch with *Camptochaete excavata*); *ibid.*, Nihehata - Hoale Besar, 1830 m alt., *C-16675*.

P. succulentum (Mitt.) T.J. Kop.

Central Seram: Manusela National Park, Wae Angsela - Wae Huhu, 1290-2000 m alt., *C-8729*; Gunung Hausane, near Elemata-Makualaina, 400-650 m alt., *C-9422*; Tehoru, Hatumete - Hoale Pass, 550-660 m alt., *C-10498* and *C-10573*; *ibid.*, along Wae Nua, 110-190 m alt., *C-14629*; *ibid.*, Gunung

Sinaunia - Liang Pipileina, 2200 m alt., *C-15295*.

Hab. On humus and soil usually beside streams.

Dist. Widely distributed in East and Southeast Asia.

Pohlia Hedw.

P. elongata Hedw.

Central Seram: Manusela N. P., Wae Huhu - Gunung O'Wae Puku, 2620 m alt., *C-8927*; summit of Gunung O'Wae Puku, 2890 m alt., *C-8954 p.p.*

Hab. Growing on mesic soils and *Cyathea* trunk in an alpine meadow.

Dist. Subcosmopolitan.

Note: Forming a dense mat with *Anomobryum julaceum* and *Leptodontium flexifolium*.

Orthotrichaceae

Desmotheca Lindb.

D. apiculata (Dozy & Molk.) Lindb.

Central Seram: Wahi, Elemata-Makualaina, 100 m alt., *C-9290*.

Dist. Widespread in tropical and subtropical Asia and Polynesia.

Hab. On shrub branches at partially shaded and moist site beside a stream at the edge of secondary lowland forest.

Groutiella Steere ex Crum & Steere

G. tomentosa (Hornsch.) Wijk & Marg.

Central Seram: Tehoru, Hatumete - Hoale Pass, 150 m alt., *C-10466*; *ibid.*, 160 m alt., *C-10468* & *C-10469*; *ibid.* 200 m alt., *C-10568*; Tehoru, Maneuratu - Gunung Musamutua, 550 m alt., *C-16405*. West Seram: in the vicinity of Taniwel, 500 m alt., *C-10147*.

Hab. Forming dense mats on substrates at rather sunny and open places at low altitudes.

Dist. Widespread in tropical America and tropical Asia.

Note. Vitt et al. (1995) reported this species from New Guinea and wrote that "Only female plants with archegonia observed in New Guinea". In Seram, total six specimens were collected and two of them born sporophytes abundantly. Duplicates with sporophytes (*Akiyama C-10563*) had been distributed as a part of exsiccata [Bryophytes of Asia, Fasc. 19, No. 382 (2009) distributed from HIRO].

Leptodontiopsis Broth.

L. orientalis Dixon

Central Seram: around the summit of Gunung O'

Wae Puku, 2800-2900 m alt., *C-8986*.

Hab. On trunk of *Cyathea* sp. in alpine meadow.

Dist. Borneo, Sulawesi, New Guinea.

Macromitrium Brid. [identification mostly based on Vitt et al. (1995) otherwise noted].

M. acuminatum (Reinw. & Hornsch.) Müll. Hal.

Central Seram: Tehoru, Hatumete - Hoale Pass, 1050 m alt., *C-10634*; Tehoru, Nihehata - Gunung Hoale Besar, 1730 m alt., *C-16691*.

Hab. On tree branches in a montane forests.

Dist. Java, New Guinea, The Solomon Island.

M. angustifolium Dozy & Molk.

Central Seram: Manusela N. P., Gunung Musisi near Sawai, 1290 m alt., *C-9787*; Tehoru, Wolu, Wae Waya - Kokan, 1000 m alt., *C-10385* & 950 m alt., *C-10453*; *ibid.*, Hatumete - Hoale Pass, 750 m alt., *C-10587*; *ibid.*, 870 m alt., *C-10601*; *ibid.*, 910 m alt., *C-10606*; Tehoru, Hatu - Piliانا, 5 m alt., *C-10171*. West Seram: Kairatu, Tihulale - upper elevation of Gunung Totaniwel, 600 m alt., *C-15749*.

Hab. On tree branches in lowland thicket and lower montane forests.

Dist. Sumatra, Java, Borneo, Sulawesi, Luzon, New Guinea, The Solomon Islands.

Note. Slender plants with the short (ca. 4 mm long), smooth setae, the sigmoid, smooth basal laminal cells, and the pluripapillose, short-rhomboidal upper laminal cells are characteristic to this species.

M. archboldii E.B. Bartram

Central Seram: Manusela N. P., Wae Angsela - Wae Huhu, 1880 m alt., *C-8836*; Tehoru, Ena Puti - Gunung Sinaunia, 2200 m alt., *C-15269a*.

Hab. On branches of trees.

Dist. New Guinea.

M. crinale Broth. & Geh.

Central Seram: Manusela N. P., around the summit of Gunung O'Wae Puku, 2800-2900 m alt., *C-8965*; Sawai, Gunung Roihelu, 1540 m alt., *C-9872*; Tehoru, Wae Nua - Gunung Mapahue, 850 m alt., *C-14798*; *ibid.*, Hau Harnoe - Ena Puti, 1860 m alt., *C-15137*; *ibid.*, Ena Puti - Gunung Sinaunia, 2100 m alt., *C-15217*; Nihehata - Gunung Hoale Besar, 1770 m alt., *C-16664*.

Hab. On tree trunks and branches in upper montane forests.

Dist. New Guinea, The Solomon Islands.

M. cuspidatum Hampe

Central Seram: Manusela N. P., Gunung Musisi near Sawai, 1220 m alt., *C-9782*.

Hab. On trunk of a fallen tree.

Dist. Widespread in Malesia.

Note. Long upper laminal cells, smooth, curved to sigmoid basal laminal cells, smooth and shorter (to 9 mm long) setae, and totally naked calyptrae are good features for this species.

M. erubescens E.B. Bartram

Central Seram: Manusela N. P., Wae Huhu - Gunung 'Wae Puku, 2870 m alt., *C-8949*; around the peak of Gunung O'Wae Puku, 2890 m alt., *C-8963*.

Hab. On limestones gravels and boulders covered with soil at sunny and open places in alpine meadows.

Dist. New Guinea.

Note. None of the three specimens from Seram bears sporophytes.

M. falcatum Müll. Hal.

Central Seram: Tehoru, Saunulu - Wae Salune, 0-140 m alt., *C-14557*. West Seram: Taniwel, Gunung Nakaela, 400 m alt., *C-10134*.

Hab. On tree trunks in lowland.

Dist. Widespread in Malesia.

Note. Small plant size, short, smooth setae with densely haired calyptra and more or less cucullate leaf apex, as well as its lowland habitats, can be good distinguishing features of this species.

M. fuscescens Schwägr.

Central Seram: Kanikeh - Selmena, 730 m alt., *C-9089*; Gunung Uwelehu near Hatuolo, 630-1000 m alt., *C-9216*, *C-9221* & *C-9236*; around Elemata-Makualaina, 100 m alt., *C-9293*, *C-9289*, *C-9308*; *ibid.*, Elemata-Makualaina - Kaloa, 80-150 m alt., *C-9430*; Kaloa - small village near Wae Isal, 20-120 m alt., *C-9473*; Sawai, low hill beside a sea-coast, 0-130 m alt., *C-9497*; Sawai - Wae Niniyoa, 70-210 m alt., *C-9551* & *C-9552*; Sawai, Wae Niniyoa - Wae Puo, 200-1000 m alt., *C-9575*; *ibid.*, Wae Niniyoa - Wae Puo, 800 m alt., *C-9591*; Tehoru, Hatu - Piliانا, 310 m alt., *C-10204*; *ibid.*, Wae Waya - 1000 m alt. camp site, 910 m alt., *C-10360*; *ibid.*, Wae Waya - Kokhan, 1230 m alt., *C-10440*; *ibid.*, Hatumete - Hoale Pass, 610 m alt., *C-10547* & *C-10572*; *ibid.*, 1070 m alt., *C-10640*; *ibid.*, Saunulu - Wae Salune, 0-140 m alt., *C-14556* & *C-14561*; *ibid.* along Wae Nua, 110-190 m alt., *C-14649*; *ibid.*, Piliانا - Gunung Watane, 800 m alt., *C-14861*; *ibid.*, Piliانا - Gunung Harnoe, 800 m alt., *C-15100*; *ibid.*, 500 m alt., *C-15101* & *C-15407*; *ibid.*, Saunulu - Batu Kapal, 5-100 m alt., *C-15464* & *C-15473*; *ibid.*, Hunisi - Wae Heka Heka, 200 m alt., *C-15997*; *ibid.*, Wae Heka Heka - Wae Pasola Hatu, 430 m alt., *C-16028*; *ibid.*, Wae Pasola Hatu - Gunung Meseleinan, 740 m alt., *C-16097*; *ibid.*, Hunisi - Gunung Salela, 350 m alt., *C-16334*; *ibid.*, Hatumete

- Losa, 400 m alt., *C-16471*; *ibid.*, Losa - Nihehata, 1110 m alt., *C-16585*; *ibid.*, 1250 m alt., *C-16758*. East Seram: Bula, Gunung Simfakan, 10-150 m alt., *C-10834*. West Seram: Taniwel, in the vicinity of Buria, 200 m alt., *C-9978* & *C-10109*; *ibid.*, 300-400 m alt., *C-9998*; Tanahgoyang - Kali Ani, 5-100 m alt., *C-15631*; Kairatu, in the vicinity of Tihulale, 5-90 m alt., *C-15715*.

Hab. On tree trunks and branches at rather lower altitudes, often at sunny and open places.

Dist. Widespread in Malesia and Pacific Islands.

Note. Most common species in the genus *Macromitrium* in Seram, mostly growing at lower altitudes. Whitish-green plant color can be a good key to know its identity even in the fields.

M. incurvifolium (Hook.f. & Grev.) Schwägr.

Central Seram: Tehoru, Hatumete - Hoale Pass, 250 m alt., *C-10475*, and 620 m alt., *C-10516*. West Seram: Kairatu, Kamarian - upper elevation of Gunung Totaniwel, 350 m alt., *C-15945*.

Hab. On tree trunk and branch at rather sunny and open places in lowland forests.

Dist. Java, Ternate, New Guinea; Australia, Pacific Islands.

M. longicaule Müll. Hal.

Central Seram: Manusela N. P., Wae Huhu - Gunung O'Wae Puku, 2480 m alt., *C-8915*; *ibid.*, Selmena - Maraina, 700-800 m alt., *C-9110*; *ibid.*, Maraina - Hatuolo, 600-700 m alt., *C-9149*.

Hab. Growing on tree trunks and branches in montane forests.

Dist. Java, New Guinea.

M. noguchianum Schultz-Motel

Central Seram: Manusela N. P., Wae Angsela - Wae Huhu, 1880 m alt., *C-8837* & *C-8838*; *ibid.*, 1970 m alt., *C-8849*; Tehoru, Hatumete - Hoale Pass, 1430 m alt., *C-10681*; *ibid.*, Gunung Sinaunia - Liang Pipileina, 2070 m alt., *C-15307*.

Hab. Growing on branches and tree trunks in primeval montane forests.

Dist. New Guinea.

M. norrisianum Vitt.

Central Seram: Manusela N. P., Wae Angsela - Wae Huhu, 1800 m alt., *C-8829*; Tehoru, between Hatumete - Hoale Pass, 1050 m alt., *C-10663* and 1430 m alt. *C-10672*; *ibid.*, Piliana - Gunung Watane, 1390 m alt., *C-14960*; *ibid.*, Nihehata - top of Gunung Hoale Besar, 1420 m alt., *C-16660*.

Hab. Growing on tree trunks and branches in montane forests.

Dist. New Guinea.

M. ochraceum (Dozy & Molk.) Müll. Hal.

Central Seram: Sawai, Gunung Musisi, 1120 m alt., *C-9767*; *ibid.*, Gunung Roihelu, 1080 m alt., *C-9816* and 1540 m alt. *C-9869*.

Hab. Growing on tree trunks and branches in montane forests.

Dist. Widespread in Malesia.

Note. Among the *Macromitrium* species found in Seram and Ambon islands, *M. ochraceum*, *M. yuleanum*, and *M. norrisianum* share unique characteristic in lamina cell feature, that is, conspicuous "intercellular spaces ('dots')" (Vitt et al. 1995).

M. orthostichum Nees ex Schwägr.

Central Seram: Manusela N. P., Wae Angsela - Wae Huhu, 1480 m alt., *C-8762*; *ibid.*, 1880 m alt., *C-8839*; *ibid.*, 1970 m alt., *C-8848*; Gunung Uwelehu near Hatuolo, 630-1000 m alt., *C-9235*; Wae Niniyoa - Wae Puo near Sawai, 1000 m alt., *C-9633*; Gunung Musisi, near Sawai, 1200 m alt., *C-9778* & *C-9784*; Gunung (Mt.) Musisi near Sawai, 1070 m alt., *C-9809*; Gunung Roihelu, near Sawai, 1540 m alt., *C-9866*; Tehoru, Wae Waya - Kokhan, 1230 m alt., *C-10438* & *C-10439*; Tehoru, Hatumete - Hoale Pass, 910 m alt., *C-10605*; *ibid.*, 1160-1760 m alt., *C-10645*; *ibid.*, Piliana - Gunung Watane, 800 m alt., *C-14865* & *C-14866*; *ibid.*, 1160 m alt., *C-14966*; *ibid.*, Hau Harnoe - Ena Puti, 1680 m alt., *C-15200*; *ibid.*, 1930 m alt., *C-15152*; *ibid.*, Losa - Nihehata, 1300 m alt., *C-16603*; *ibid.*, Ena Puti - Gunung Sinaunia, 2200 m alt., *C-15269-b*; *ibid.*, Nihehata - Hatumete, 1250 m alt., *C-16765*. West Seram: Kairatu, Tihulale - upper elevation of Gunung Totaniwel, 600 m alt., *C-15750*.

Hab. On tree trunk and branches in montane forests.

Dist. Widespread in Malesia; Australia, Samoa.

Note. We followed Eddy (1996) to recognize *Macromitrium angulataum* as a synonym of *M. orthostichum*.

M. parvifolium Dixon

Central Seram: Manusela N. P., Wae Huhu - Gunung O'Wae Puku, 2040 m alt., *C-8857*; *ibid.*, 2080 m alt., *C-8862*; Tehoru, Hatumete - Hoale Pass, 1050 m alt., *C-10635*; *ibid.*, Hau Harnoe - Ena Puti, 1530 m alt., *C-15171*; *ibid.*, 1250 m alt., *C-15360*; *ibid.*, 2150 m alt., *C-15373*; *ibid.*, Nihehata to Gunung Hale Besar, 1770 m alt., *C-16682*. West Seram: Kairatu, upper elevation of Gunung Totaniwel, 1000 m alt., *C-15822*; *ibid.*, 1100 m alt., *C-15834*.

Hab. On tree branches and trunks and sometimes on humus in montane forests.

Dist. New Guinea.

Note. Smaller plant size for the genus and strongly coiled leaves in dry conditions are characteristic for the species. *Macromitrium parvifolium* resembles *M. bulmei* Nees ex Schwägr. in these features, but the latter has not been reported from East Malesia (Vitt et al. 1995).

M. yuleanum Broth. & Geh.

Central Seram: Manusela N. P., Wae Huhu - G O' Wae Puku, 2470 m alt., C-8909 and 2400 m alt., C-8896; Tehoru, Sinaunia - Liang Pipileina, 2270 m alt., C-15305; *ibid.*, Ena Puti - Gunung. Sinaunia, 2240 m alt., C-15211.

Hab. Growing on tree branches in upper montane forests.

Dist. New Guinea, The Solomon Islands.

Schlotheimia Brid.

S. emarginato-pilosa Herzog

Central Seram: Sawai, Gunung Musisi, 1220 m alt., C-9780; *ibid.*, 1330 m alt., C-9792; *ibid.*, 1210 m alt., C-9806.

Hab. All the three specimens were collected from fallen large branches of tall trees at forest floors.

Dist. Sulawesi, New Guinea.

Note. *Schlotheimia emarginato-pilosa* Herz. is originally described based on the plants collected in Seram Island (coll. *Streese* 40, holotype in JE).

S. macgregorii Broth. & Geh.

Central Seram: Manusela N. P., Wae Huhu - Gunung O'Wae Puku, 2080 m alt., C-8861 & C-8867; *ibid.*, 2500 m alt., C-8904; Sawai, Gunung Musisi, 1300 m alt., C-9798; *ibid.*, Gunung Roihelu, 1340 m alt., C-9850 & C-9860; Hatumete, Hatumete - Hoale Pass, 1430 m alt., C-10674 & C-10677; Tehoru, Piliana - Gunung Watane, 1350 m alt., C-14949; Manusela N. P., Losa - Nihehata, 1280 m alt., C-16626.

Hab. Growing on tree trunks and branches in montane forests.

Dist. Sulawesi, New Guinea.

S. wallisii Müll. Hal.

Central Seram: Manusela N. P., Wae Angsela - Wae Huhu, 1880 m alt., C-8840; *ibid.*, Wae Huhu - Gunung O'Wae Puku, 2080 m alt., C-8864 & C-8866; *ibid.*, summit of Gunung O'Wae Puku, 2800-2900 m alt., C-8989.

Hab. All the specimens were collected from fallen branches and trunks of tall tree except for C-8989 (lower part of tree trunk) and C-8904 (*Cyathea* trunk).

Dist. Widespread in Malesia and adjacent regions.

Zygodon Hook. & Taylor

Z. intermedius Bruch & Schimp.

Central Seram: Manusela N. P., summit of Gunung O'Wae Puku, 2890 m alt., C-8962, & C-8971bis.

Hab. Forming dense, compact and low mats on and in crevice of limestone boulders or on the base of *Cyathea* trunk in alpine meadows.

Dist. Temperate to tropical southern hemisphere.

Z. novoguineensis E.B. Bartram

Central Seram: Manusela N. P., summit of Gunung O'Wae Puku, ca. 2900 m alt., C-8977c; *ibid.*, Gunung (Mt.) O'Wae Puku - Gunung Binaiya, 2920 m alt., C-9019.

Hab. On limestone boulder or in shallow crevice of limestone cliff in alpine meadows.

Dist. New Guinea.

Note. *Zygodon novoguineensis* has been known only from high altitudes of New Guinea. This species can be distinguished from congeneric members by reddish-brown costa and totally smooth lamina cells. Both of the specimens collected in Seram Island differ from the typical plants in much smaller (up to 0.5 cm in high) plant size. In addition, one of the Seram plants (C-8977c) has scarcely differentiated basal lamina cells. In both specimens, septate gemmae are abundantly present in leaf axils.

Regmatodontaceae

Regmatodon Brid.

R. cf. polycarpus (Griffith) Mitt.

Central Seram: Manusela N. P., around the summit of Gunung O'Wae Puku, 2860 m alt., C-8977a-bis.

Hab. On limestone boulder at sunny and open place in the alpine meadow.

Dist. Cosmopolitan.

Note. Seram plants are without sporophytes and thus cannot be identified to the species. Judging from taxonomical notes given by O'Shea (1997), that is, "A sterile specimen is effectively unidentifiable. However, no specimens of *R. polycarpus* with serrate leaf tips have been collected, although this character is exhibited by a large majority of *R. declinatus* specimens", Seram plants agree better with *R. polycarpus*.

Splachnaceae

Tayloria Hook.

T. indica Mitt.

Central Seram: Manusela N. P., G. O'Wae Puku -

G. Binaiya, ca. 2900 m alt., *C-8951* & *C-9005*.

Hab. On bare soil in alpine meadows.

Dist. Widespread in temperate to subtropical Asia.

Note. Based on the same specimen, Akiyama (1986: 47) reported *Tayloria* aff. *longiseta* E.B.Bartr. from Seram Island.

Additions and Corrections of Species to the Previous Reports

Calomniaceae

Calomnion Hook. f. & Wilson

C. seramensis Vitt

Central Seram: Tehoru, Nihehata - Gunung Hoale Besar, 1280-1850 m alt., *C-16703*.

Hab. On *Cyathea* trunk in montane forests.

Dist. Endemic to Seram.

Note. *Calomnion seramensis* was described based on the single collection from Seram Island, which was previously reported as *Calomnion* cf. *complanata* (Akiyama 1990). For more discussion on this species especially on its extraordinary distribution for the genus, see Vitt (1995).

Dicranaceae

Brotherobryum M. Fleisch.

B. sleumeri B. Allen

Central Seram: Manusela N. P., Wae Huhu - Gunung O'Wae Puku, 2100 m alt. *C-8871*.

Hab. Forming a dense, compact patch with *Macromitrium blumei* on fallen branches in an upper montane forest.

Dist. Previously known as endemic to Papua New Guinea (Allen 1984, Norris and Koponen 1990).

Note. Seram plants bear only young perichaetia, which differ from ordinal leaves in sheathing base. This is not the first report of the genus outside New Guinea: Tan (1989) reported *B. undulatifolium* from Borneo. Here we follow traditional sense of the Dicranaceae; for updated circumscription of the family, see La Farge et al. (2002).

Dicranoloma (Renauld) Renauld

D. cutlackii (Norris & T.J. Kop.) Klazenga

Central Seram: Manusela N. P., Gunung O'Wae Puku - Gunung Binaiya, 2900 m alt., *C-9015*.

Hab. On tree fern trunk in alpine meadow.

Dist. New Guinea.

Note. Akiyama (1990) reported *Dicranoloma*

dymannianum from Seram Island, but it was based on misidentification. For more detail, see Klazenga (1999, p. 87).

Pottiaceae

Leptodontium (Müll. Hal.) Hampe ex Lindb.

L. flexifolium (With.) Hampe

Central Seram: Manusela N. P., summit of Gunung O'Wae Puku, 2890 m alt., *C-8954bis* & *C-8993*.

Hab. On *Cyathea* trunk in an alpine meadow.

Dist. Cosmopolitan.

Note. Forming a dense mat with *Anomobryum julaceum* and *Pohlia elongata*.

Splachnobryum Müll. Hal.

S. limbatum Norris & Zander

Central Seram: Tehoru, Makaliki spring in the vicinity of Piliana, 400 m alt., *C-14825*; *ibid.*, Hatumete - Losa, 250 m alt., *C-16478*.

Hab. On silted limestone rock in a stream and limestone boulder in lowland secondary forests.

Dist. New Ireland and The Solomon Islands.

Note. This species has been known from two localities in Western Melanesia (Papua New Guinea and Solomon Islands, see Arts 2001). In Makaliki spring, we found both *S. limbatum* and *S. obtusum* growing side-by-side. They are, however, different in the shape of laminal cells at leaf border and can be distinguished with ease under a microscope.

S. obtusum (Brid.) Müll. Hal.

Central Seram: Tehoru, Makaliki spring in the vicinity of Piliana, 400 m alt., *C-14824*.

Hab. Submerged in a stream, on silted limestone rock.

Dist. Subcosmopolitan.

Note. We followed Arts (2001), who treated the species concept of *S. obtusum* much wider than those of Eddy (1996).

Racopilaceae

Powellia Mitt.

P. parvula (E.B.Bartr.) Norris & T.J. Kop.

Central Seram: Manusela N. P., Wae Huhu - Gunung O'Wae Puku, 2820 m alt., *C-8934*; *ibid.*, summit of Gunung O'Wae Puku, 2800-2900 m alt., *C-8969*.

Hab. In shallow crevices of limestone boulders at sunny and open slope.

Dist. New Guinea.

Sematophyllaceae

Taxithelium Spruce ex Mitt. (det. by Câmara)

T. isocladum (Bosch & Sande Lac.) Renaud & Cardot

Central Seram: Tehoru, Hunisi - Wae Heka Heka, 350 m alt., C-15956.

Hab. On shrub leaves in a lower montane forest.

Dist. Widely distributed in Melesia.

T. damanhurianum P.S. Câmara

Central Seram: Manusela N. P., Rumah Sokat Batu in the vicinity of Sawai, 100 m alt., C-9923; in the vicinity of Elemata-Makualaina, 400-650 m alt., C-9329.

Hab. On shrub branches in lowland and lower montane forests along rivers and streams.

Dist. Endemic to Seram.

Note. *Taxithelium kamanhurianum* was described by Câmara (2009) based on Seram collections.

Additional Specimens to the Previous Reports

Lembophyllaceae

Camptochaete Reichardt

C. excavata (Taylor) A. Jaeger

Central Seram: Tehoru, Gunung Sinaunia - Liang Pipileina, 2200 m alt., C-15251a.

Hab. On a tree branch in a montane forest developed on steep slope.

Dist. New Guinea, Australia.

Note. Akiyama (1993) reported this species as *C. vaga* (Müll. Hal.) Broth., which has been synonymized to *C. excavata* by Tangney (1997: 102).

Pottiaceae

Barbula Hedw.

B. pachyloma Broth.

Central Seram: Manusela N. P., Roho - Kanikeh, 60-600 m alt., C-8502; Tehoru, Hatu - Piliانا, 370 m alt., C-10210.

Hab. Usually growing on rocks, submerged in streams, rarely on limestone rock at forest floor (Akiyama 1996).

Dist. New Guinea.

Sematophyllaceae

Pseudohypnella (Broth.) M. Fleisch.

P. verrucosa (Dozy & Molk.) M. Fleisch.

Central Seram: Tehoru, Gunung Watane, 1650 m alt., C-15013; *ibid.*, Hau Harnoe - Ena Puti, 2080 m alt., C-15128-b; *ibid.*, Piliانا - Gunung Watane, 1180 m alt., C-14970.

Hab. On soil and often intermingled with other mosses in montane forests.

Note. Akiyama (1993) listed a single specimen of *Pseudohypnella verrucosa*, however, after examining additional ones collected from Seram in 1996, it reveals that the species is not rare in the island. It is often intermingled with other mosses.

Dist. Flores, Java, Mindanao, New Guinea, Sri Lanka.

Meiothecium Mitt.

M. aff. bogoriense M. Fleisch.

West Seram: Taniwel, Buria, 280 m alt., C-9973.

Hab. Growing on tree trunk in a lowland forest.

Note: Seram plants are similar to *M. bogoriense*, but leaf margins are revolute and each laminal cell has single papillae at the center of a lumen.

M. hamatum (Müll. Hal.) Broth.

Central Seram: Manusela N. P., near Wolu, Wae Waya - Kokhan, 970 m alt., C-10397.

Hab. On fallen trunk at sunny and open place in rather mossy montane forest.

Dist. Sumatra, Java, Philippines, Fiji.

M. microcarpum (Harv.) Mitt.

Central Seram: Manusela N. P., Gunung Musisi near Sawai, 1300 m alt., C-9802.

Hab. On fallen trunk in a well-preserved montane forest.

Dist. Widely distributed in Malesia and Pacific Islands.

Macrohymenium Müll. Hal.

M. rufum (Reinw. & Hornsch.) Müll. Hal.

Central Seram: Manusela N. P., near Sawai, Wae Ili - Wae Pulo, 1060 m alt., C-9657.

Hab. On rotten log in a lower montane forest.

Dist. Java, Sumatra, Borneo, New Guinea, Sri Lanka, Madagascar.

Sorapillaceae

Sorapilla Spruce & Mitt.

S. papuana Broth. & Geh.

Central Seram: Tehoru, Hatumete - Hoale Pass, 1530 m alt., C-10693.

Hab. This species forms a pure mat on a tree trunk.

Dist. New Guinea, Australia.

Symphiodontaceae

Dimorphocladon Dixon

D. borneense Dixon

Central Seram: Manusela N. P., Kanikeh - Wae Angsela, 760 m alt., *C-8632*; *ibid.*, Selmena - Maraina, 700-800 m alt., *C-9114*; *ibid.*, Elemata-Makualaina, ca. 100 m alt., *C-9310*.

Hab. On living leaves of tree and shrubs beside a river in well-preserved lowland and lower montane forests. All the specimens listed above bear sporophytes.

Note. Akiyama (1993) reported this species as *Aptychella* sp.

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セラム・アンボン島（マレーシア東部）の蘚類フロラ X. タマゴケ科, アオギヌゴケ科, ハリガネゴケ科, キンシゴケ科, ヒナノハイゴケ科, イワダレゴケ科, ハイゴケ科（一部）, チョウチンゴケ科, タチヒダゴケ科, ニセウスグロゴケ科, オオツボゴケ科ならびに既報への修正と追加.

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セラム・アンボン島から採集された蘚類の報告シリーズの10番目となるもので、本報告において、タマゴケ科（4属8種）、アオギヌゴケ科（1属1種）、ハリガネゴケ科（6属16種）、キンシゴケ科（2属3種）、ヒナノハイゴケ科（1属1種）、イワダレゴケ科（1属1種）、ハイゴケ科（一部；6属9種）、チョウチンゴケ科（3属5種）、タチヒダゴケ科（6属24種）、ニセウスグロゴケ科（1属1種）、オオツボゴケ科（1属1種）ならびにこれまでの報告への修正と追加を行った。

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