

New bryophyte taxon records for tropical countries III

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MUSCI

Ivory Coast (Cote d'Ivoire)*Brachymerium capitulatum* (Mitt.) Kindb.

Man: Mt. Tonkoui 10 km NW Man (1223 m), epiphytic; 7°27'N, 7°38'W; 25.8.1997, herb. *F. Müller E 34*.

Widely distributed in tropical Africa.

Campylopus hildebrandtii (C. Müll.) Jaeg.

Man: Mt. Tonkoui 10 km NW Man (1223 m), embankment of a path; 7°27'N, 7°38'W; 25.8.1997, herb. *F. Müller E 124*, conf. J.P. Frahm.

In West Africa the species was known only from Cameroun and Bioko, but it is widely distributed in Central and East Africa from Abyssinia to South Africa.

Campylopus obrutus Ther. & P. Varde

Man: surroundings of the village Gouedie (=

Gouele) 24 km NW Man, embankment of a path; 7°32'N, 7°45'W; 18.-21.8.1997, herb. *F. Müller E 120, E 129*, conf. J.P. Frahm.

Man: Mt. Tonkoui 10 km NW Man (1223 m NN), embankment of a path; 7°27'N, 7°38'W; 25.8.1997, herb. *F. Müller E 133*, conf. J.P. Frahm.

Common element of the flora of the West African lowland rainforest area.

Campylopus pilifer Brid.

Ferkessedougou: c. 4 km south of the town along the street to Koumbala, savanna of trees mixed with cultivated areas, on open soil embankment; 9°34'N, 5°12'W; herb. *F. Müller E 126*, conf. J.P. Frahm.

Widely distributed in tropical Africa.

Fissidens flaccidus Mitt.

Man: Cascade de Man 4 km W Man (c. 400 m), on wet rocks near a waterfall; 7°25'N, 7°35'W; 23.8.1997, herb. *F. Müller E 201*, det. I.

Bruggeman-Nannenga.

Distribution in Africa: Nigeria, Rodrigues, Zimbabwe.

Fissidens gardneri Mitt.

Ferkessedougou: in urban area near hotel Auberge de la Reserve, on open soil; 9°36'N, 5°12'W; 29.8.1997, herb. *F. Müller E 208*, det. I. Bruggeman-Nannenga.

Distribution in Africa: Central African Republic, Guinea, Nigeria, Senegal, Tanzania.

Fissidens grandifolius Broth. & P. Varde

Man: surroundings of the village Gouedie (= Gouele) 24 km NW Man, on boulders; 7°32'N, 7°45'W; 18.-21.8.1997, herb. *F. Müller E 194*, det. I. Bruggeman-Nannenga.

Guinea element, which is probably restricted to the West African lowland rainforest area.

Fissidens intramarginatus (Hampe) Mitt.

Man: rock La Dent de Man 5 km NNO Man (881 m); in rock cracks and on wet rocks; 7°27'N, 7°33'W; 23.8.1997, herb. *F. Müller E 190, E 198* (cf.), det. I. Bruggeman-Nannenga.

Ferkessedougou: street c. 7 km north of the town, on soil on the embankment of a path; 9°40'N, 5°11'W; 30.8.1997, herb. *F. Müller E 202* (cf.), det. I. Bruggeman-Nannenga.

Widely distributed in tropical Africa, also known from the Neotropis.

Fissidens microcarpus Mitt.

Man: surroundings of the village Gouedie (= Gouele) 24 km NW Man, embankment of a path; 7°32'N, 7°45'W; 18.-21.8.1997, herb. *F. Müller E 205*, det. I. Bruggeman-Nannenga.

Man: Mt. Tonkoui 10 km NW Man (1223 m), epiphytic and on rocks; 7°27'N, 7°38'W; 25.8.1997, herb. *F. Müller E 200, E 195*, det. I. Bruggeman-Nannenga

Guinea element, probably restricted to the West African lowland rainforest area.

Fissidens pellucidus Hornsch.

Man: surroundings of the village Gouedie (= Gouele) 24 km NW Man, embankment of a path; 7°32'N, 7°45'W; 18.-21.8.1997, herb. *F. Müller E 207*, det. I. Bruggeman-Nannenga.

Man: Mt. Tonkoui 10 km NW Man (1223 m),

embankment of a path; 7°27'N, 7°38'W; 25.8.1997, herb. *F. Müller E 196*, det. I. Bruggeman-Nannenga.

Man: Cascade de Man 4 km W Man (c. 400 m), on soil on the embankment of a path; 7°25'N, 7°35'W; 23.8.1997, herb. *F. Müller E 199*, det. I. Bruggeman-Nannenga.

Pantropical species which is not mentioned for Africa in the checklist of O'Shea (1995), but recently reported from here for Bioko (Müller 1996) and the continental Equatorial Guinea (Infante & Heras 1998).

Fissidens cf. pocsii Bizot & Dury ex Pocs

Abidjan: hotel Ivoire, on soil on embankment near the port; 5°20'N, 4°1'W; 4.9.1997, herb. *F. Müller E 398*, det. I. Bruggeman-Nannenga.

Hitherto known only from Tanzania.

Fissidens cf. ramulosus Mitt.

Man: surroundings of the village Gouedie (= Gouele) 24 km NW Man, on soil over rocks on the edge of a maize field; 7°32'N, 7°45'W; 18.-21.8.1997, herb. *F. Müller E 192*, det. I. Bruggeman-Nannenga.

Distribution in Africa: Central African Republic, Nigeria.

Fissidens serratus C. Müll.

Man: Mt. Tonkoui 10 km NW Man (1223 m), epiphytic; 7°27'N, 7°38'W; 25.8.1997, herb. *F. Müller E 191*, det. I. Bruggeman-Nannenga.

Not included in the checklist of O'Shea (1995).

Fissidens submarginatus Bruch ex Krauss

Man: surroundings of the village Gouedie (= Gouele) 24 km NW Man, on a termites' nest; 7°32'N, 7°45'W; 18.-21.8.1997, herb. *F. Müller E 210*, det. I. Bruggeman-Nannenga.

Hitherto known only from South and East Africa. First record for West Africa.

Fissidens weirii Mitt.

Man: surroundings of the village Gouedie (= Gouele) 24 km NW Man, on a termites' nest; 7°32'N, 7°45'W; 18.-21.8.1997, herb. *F. Müller E 206*, det. I. Bruggeman-Nannenga.

Not included in the checklist of O'Shea (1995), but from Africa recently reported for Bioko (Müller 1996) and continental Equatorial Guinea

(Infante & Heras 1998).

Porotrichum quintasii Broth.

Man: Mt. Tonkoui 10 km NW Man (1223 m), epiphytic; 7°27'N, 7°38'W; 25.8.1997, herb. *F. Müller E 143, E 155*.

Guinea element, restricted to the West African lowland rainforest area.

Schoenobryum tisserantii (Ther. & P. Varde) Manuel

Man: surroundings of the village Gouedie (= Gouele) 24 km NW Man.; 7°32'N, 7°45'W; 18.-21.8.1997, epiphytic on coffee tree, herb. *F. Müller E 26*, hill north of Gouedie, epiphytic, c. 700 m, herb. *F. Müller E 25*.

Only known from Central African Republic.

Splachnobryum gracile Besch.

Man: surroundings of the village Gouedie (= Gouele) 24 km NW Man, rut; 7°32'N, 7°45'W; 18.-21.8.1997, herb. *F. Müller E 29*.

Ferkessedougou: street c. 7 km north of the town, on soil along the embankment of the street; 9°40'N, 5°11'W; 30.8.1997, herb. *F. Müller E 27, E 211*.

Endemic to Africa, in Africa probably widely distributed (Arts 1996).

Splachnobryum obtusum (Brid.) C. Müll.

Ferkessedougou, town centre, urban area, between concrete slabs; 9°36', 5°12'W; 29.8.1997, herb. *F. Müller E 28*.

Widespread in the tropics and subtropics, for further details see Arts (1996).

Syrrhopodon gardneri (Hook.) Schwaegr.

Man: Mt. Tonkoui 10 km NW Man (1223 m), epiphytic; 7°27'N, 7°38'W; 25.8.1997, herb. *F. Müller E 224*, conf. S. Orban.

Widespread in tropical Africa.

Syrrhopodon gaudichaudii Mont.

Man: Mt. Tonkoui 10 km NW Man (1223 m NN), epiphytic; 7°27'N, 7°38'W; 25.8.1997, herb. *F. Müller E 230*, conf. S. Orban.

Widespread in tropical Africa.

Reunion

Amphidium tortuosum (Hornsch.) Cufodontis
Hell-Bourg SW: near Gite de la Caverne Defour below Piton des Neiges, subalpine area with many rocks and boulders and with fragmentary *Philippia* brushes, in cleft of rocks, c. 2450 m; 22.9.1998, herb. *F. Müller R 686*.

Primarily a southern hemisphere species, which is known not uncommon at higher altitudes in continental Africa.

Philonotis scabrifolia (Hook.f. & Wils.) Braithw.
Hell-Bourg SW: near Gite de la Caverne Defour below Piton des Neiges and along the path from the Gite to the Piton des Neiges, subalpine area with many rocks and boulders and with fragmentary *Philippia* brushes, in cleft of rocks, c. 2450-2900 m; 22.9.1998, herb. *F. Müller R 664, R 667, 23.9.1998, herb. F. Müller R 472*.

Widespread in the Southern Hemisphere. In Africa hitherto known only from the Republic of South Africa and Lesotho.

Polytrichum piliferum Hedw.

Piton des Neiges: on the top, subalpine-alpine talus, on rocks, c. 3060 m; 23.9.1998, herb. *F. Müller R 513*.

Cosmopolitan species.

Tortella humilis (Hedw.) Jenn.

Hell-Bourg NW: Piton d'Enchaing, along the path to the top, on rocks, c. 900 m; 21.9.1998, herb. *F. Müller R 322*.

Hell-Bourg: west edge of the village near the thermal springs, epiphytic in a park, c. 900 m; 21.9.1998, herb. *F. Müller R 429*.

Widespread species; known from Africa, America and parts of Europe and Asia.

Indonesia: Sulawesi (Celebes)

Campylopus japonicus Broth.

Malino (= 60 km OSO of Ujung Pandang): south of the village on the path to Sapaya, cultivated area with small rests of wood, on boulders of volcanic origin, c. sporog.; 5°20'S, 119°44'O; 11.1993, herb. *F. Müller S 46*, det. J.P. Frahm. Known from Queensland, Japan, Tahiti, Hong-kong, British Columbia, Mexico. Hitherto not

known from Malasia.

Malaysia (mainland)

Chenia leptophylla (Müll. Hal.) Zand. – Pahang, Cameron Highlands, Tanah Rata, ruderal in Aberginen-Plantage beim Kraftwerk unterhalb der Robinson-Fälle, 1170 m, 25.5.1997, leg. Schäfer-Verwimp & Verwimp (G, STU, herb. Schäfer-Verwimp Nr. 18952). -, Cameron Highlands, Brinchang, ruderal in Gärtnerei wenig oberhalb des Sam Poh Tempels, 1570 m, 26.5.1997, leg. Schäfer-Verwimp & Verwimp (EGR, herb. Schäfer-Verwimp Nr. 18967). Distrib.: Nearly cosmopolitan, distr. map in Arts & Sollman (1992). New generic record for Malaysia. [ASV]
Entosthodon buseanus Dozy & Molk. – Pahang, Cameron Highlands, Tanah Rata, Regenwald am Gunung Beremban, auf übererdetem Felsblock, c. spor., 1420 m, 23.5.1997, leg. Schäfer-Verwimp & Verwimp (herb. Schäfer-Verwimp Nr. 18789). Distrib.: Widespread throughout tropical and subtropical Indo-Malaya (Eddy 1996), fide Mohamed & Tan (1988), *Entosthodon* is a new generic record for Peninsular Malaya and Singapore. [ASV]

Plagiomnium elimbatum (Fleisch.) T. Kop. – Pahang, Cameron Highlands, Nebelwald im Gipfelbereich des Gunung Brinchang, auf waagrechttem Ast eines Baumes, 2000 m, 22.5.1997, leg. Schäfer-Verwimp & Verwimp (EGR, G, KRAM-B, STU, herb. Schäfer-Verwimp Nr. 18717). Distrib.: Hitherto known only from Sumatra and Java (Koponen 1981, with figs. 22-25). [ASV]

Schoenobryum concavifolium (Griff.) Gangulee – Pahang, Cameron Highlands, Tanah Rata, epiphytisch in Sekundärvegetation bei Gemüseplantagen beim Kraftwerk unterhalb der Robinson-Fälle, c. spor., 1150 m, 25.5.1997, leg. Schäfer-Verwimp & Verwimp (STU, herb. Schäfer-Verwimp). Distrib.: Widespread in Indomalaya from Sri Lanka to Vietnam and New Guinea, hitherto not reported from Malaysia. Widespread, too, in the Neotropics where it is known as *Schoenobryum gardneri*. Fide Mohamed & Tan (1988) *Schoenobryum* is a new generic record and the first one of the family

Cryphaeaceae for Peninsular Malaya and Singapore. [ASV]

Tonga

Meiothecium microcarpum (Harv.) Mitt. – Late, dichter Buschwald, an Wurzeläusläufer von *Casuarina equisetifolia*, 10-60 m, 6.10.1996, leg. Chr. Schäfer (herb. Schäfer-Verwimp Nr. 19733). Distrib.: Samoa, Fiji, New Caledonia, Marianas, New Guinea, Java, Sumatra, Celebes, Amboina, Borneo, Malaysia, Singapore, Sri Lanka, Nepal. New generic record for Tonga. [ASV]

Syrhophodon fimbriatulus Müll. Hal. – Late, an Kokospalme in Buschwald, schattig, 10 m, 5.10.1996, leg. Chr. Schäfer, det. Schäfer-Verwimp, conf. Ellis (herb. Schäfer-Verwimp Nr. 18349). Distrib.: Africa (Gabon), Japan, China, Taiwan, India, Bangladesh, Tahiland, Vietnam, Malaya, Singapore, Philippines, Sumatra, Java, Borneo, New Guinea, New Caledonia, Hawaii Islands, Australia, New Zealand (Menzel & Schultze-Motel 1990). [ASV]

Venezuela

Aloinella catenula Card. – Edo. Mérida, Aguila-Pass, Páramos im Bereich der Passhöhe, auf Erde; 3900 m, 15.1.1990, leg. Schäfer-Verwimp & Verwimp, conf. Delgadillo (MEXU, herb. Schäfer-Verwimp Nr. 12130). Distrib.: Hitherto known only from Mexico and Ecuador. [ASV]

Aongstroemia orientalis Mitt. – Edo. Mérida, Nationalpark Sierra Nevada bei Mérida, Seilbahn zum Pico Espejo, Páramo in der Umgebung der Estacion La Aguada, auf Erde, 3450 m, 20.1.1990, leg. Schäfer-Verwimp & Verwimp, det. Delgadillo (MEXU, herb. Schäfer-Verwimp Nr. 12309). Distrib.: Mexico, Guatemala, Brazil, China, Taiwan, Japan, Borneo, Philippine Islands, Burma, India. [ASV]

Philonotis scabrifolia (Hook. f. & Wils.) Braithw. – Edo. Mérida, Straße Valera – Aguila-Pass, Felshang mit Blockhalden in Páramo unterhalb der Passhöhe (km 401,5), an schattigem Gestein, 3800 m, 15.1.1990, leg. Schäfer-Verwimp &

Verwimp, det. D. Griffin, III (FLAS, herb. Schäfer-Verwimp Nr. 12136/B). Distrib.: Mexico, Colombia, Brazil, Chile, Argentina, subantarctic islands, South Africa, SE Australia, New Zealand, Tasmania, and Oceania. [ASV]

HEPATICAE

Ivory Coast (Cote d'Ivoire)

Bazzania decrescens (Lehm. & Lindenb.) Trev. ssp. *molleri* (Steph.) E.W. Jones
Man: Mt. Tonkoui 10 km NW Man (1223 m), epiphytic and on fallen trunk; 7°27'N, 7°38'W; 25.8.1997, herb. *F. Müller E 248, E 307*.
Widely distributed in tropical Africa, already known from the neighboring countries Ghana and Sierra Leone.

Cylindrocolea atroviridis (Sim) Vaxa
Man: surroundings of the village Gouedie (= Gouele) 24 km NW Man, on dead wood; 7°32'N, 7°45'W; 18.-21.8.1997, herb. *F. Müller E 251, E 330, E 349, E 351*, det. J. Vaxa.
Widely distributed in tropical Africa, especially in lowland areas.

Frullania ericoides (Nees) Mont.
Man: surroundings of the village Gouedie (= Gouele) 24 km NW Man, epiphytic; 7°32'N, 7°45'W; 18.-21.8.1997, herb. *F. Müller E 252, E 333, E 344, E 345, E 344*.
Widely distributed in tropical Africa, known from always all countries in West Africa.

Lophocolea difformis Nees
Man: surroundings of the village Gouedie (= Gouele) 24 km NW Man, on dead wood; 7°32'N, 7°45'W; 18.-21.8.1997, herb. *F. Müller E 259, E 261, E 267, E 328*.
Widely distributed throughout tropical Africa.

Porella subdentata (Mitten) Steph. var. *subdentata*
Man: surroundings of the village Gouedie (= Gouele) 24 km NW Man, on boulders; 7°32'N, 7°45'W; 18.-21.8.1997, herb. *F. Müller E 262, E 263*.
Man: Mt. Tonkoui 10 km NW Man (1223 m),

epiphytic; 7°27'N, 7°38'W; 25.8.1997, herb. *F. Müller E 361*.

Man: Cascade de Man 4 km W Man (ca. 400 m), epiphytic; 7°25'N, 7°35'W; 23.8.1997, herb. *F. Müller E 264*.

Man: rock La Dent de Man 5 km NNO Man (881 m), on boulders on the top; 7°27'N, 7°33'W; 23.8.1997, herb. *F. Müller E 356*.

The only one *Porella* species known from West Africa; widely distributed in tropical Africa.

Ptychanthus striatus (Lehm. & Lindenb.) Nees
Man: Mt. Tonkoui 10 km NW Man (1223 m), epiphytic; 7°27'N, 7°38'W; 25.8.1997, herb. *F. Müller E 244*.

Widely distributed in tropical Africa, however uncommon in West Africa, where it is always known only from Cameroun and Sierra Leone. Tendentially more restricted to submontane and montane altitudes.

Riccardia amazonica (Spruce) Schiffner ex Gradstein & Hekking

Man: Mt. Tonkoui 10 km NW Man (1223 m), of soil on an embankment of a path; 7°27'N, 7°38'W; 25.8.1997, herb. *F. Müller E 265*.

Man: Cascade de Man 4 km W Man (c. 400 m), on dead wood; 7°25'N, 7°35'W; 23.8.1997, herb. *F. Müller E 266*.

Widely distributed throughout tropical Africa.

Madeira

Calypogeia azorica Bischl. – Ribeiro Frio, Levadaweg zum Portelapaß, an schattiger Tuffwand; 850 m, 30.7.1984, leg. Schäfer-Verwimp & Verwimp, conf. Grolle & Bischler 1985 (PC, herb. Schäfer-Verwimp Nr. 4941). Distrib.: Hitherto considered as endemic to the Azores from where it was known only from 5 localities (Geissler et al. 1997). [ASV]

Cephaloziella rubella (Nees) Warnst. – Ribeiro Frio, an schattiger Tuffwand an der Levada nach Portela, mit *Cephaloziella turneri* (Hook.) K. Müll., 870 m, 30.7.1984, leg. Schäfer-Verwimp & Verwimp, det. Vána (PRC, herb. Schäfer-Verwimp Nr. 5722/I). Distrib.: Europe, Canary Islands (Fuerteventura, Gomera, Tenerife), Japan,

Siberia, North America. [ASV]

Malaysia (mainland)

Cephalozia hamatiloba Steph. – Pahang, Frasers Hill, Weg zum Jerian-Wasserfall, auf Sand über Fels an Bachufer, bei Hochwasser submers, 1020 m, 20.5.1997, leg. Schäfer-Verwimp & Verwimp, det. Vána (PRC, STU, herb. Schäfer-Verwimp). Distrib.: Nepal, Bhutan, India, Thailand, Sumatra, Java, Borneo, Taiwan, China, Korea, Japan, Sakhalin Peninsula (Russia) (Vána 1993). [ASV]

Colura inflata Goebel – Perak, Taiping, Bukit Larut (Maxwells Hill), Regenwald an der Straße zur Sendestation, epiphyll auf Palmwedel, c. per., 1080 m and 1120 m, 27.5.1997, leg. Schäfer-Verwimp & Verwimp (EGR, JE, STU, herb. Schäfer-Verwimp Nr. 19010/A, 19051/B). Distrib.: Sumatra, South Vietnam. [ASV]

Diplophyllum nanum Herz. – Pahang, Frasers Hill, Weg zum Jerian-Wasserfall, an schattigem Felsblock, c. per., 1050 m, 20.5.1997, leg. Schäfer-Verwimp & Verwimp (G, STU, herb. Schäfer-Verwimp Nr. 18533); - , Cameron Highlands, Nebelwald im Gipfelbereich des Gunung Brinchang, an Fels, c. per., 2000 m, 22.5.1997, leg. Schäfer-Verwimp & Verwimp (EGR, herb. Schäfer-Verwimp Nr. 18730). Distrib.: Java, Sri Lanka, Papua New Guinea (Piippo 1985); Himalaya (Bhutan), Borneo (Long & Grolle 1990); new generic record for Malaysia. [ASV]

Heteroscyphus wettsteinii (Schiffn.) Schiffn. – Perak, Taiping, Bukit Larut (Maxwells Hill), in Regenwald auf Felsblock, 1180 m, 27.5.1997, leg. Schäfer-Verwimp & Verwimp (STU, herb. Schäfer-Verwimp Nr. 19023/A). Distrib.: Borneo, Java, West Irian, Papua New Guinea (Piippo 1989). [ASV]

Lophocolea muricata (Lehm.) Nees in Gott. et al. [= *Chiloscyphus muricatus* (Lehm.) Engel & Schust.] – Pahang, Frasers Hill, im Regenwald beim Golfplatz auf morschem Holz, c. per., mit *Lejeunea exilis* und *Drepanolejeunea* spec., 1300 m, 20.5.1997, leg. Schäfer-Verwimp &

Verwimp (STU, herb. Schäfer-Verwimp Nr. 18632); - , Cameron Highlands, Tanah Rata, Regenwald am Weg über die Robinsonfälle zum Gunung Beremban, epiphytisch, c. per., mit *Lejeunea exilis*, *Lejeunea flava* agg., *Bazzania* spec., 1420 m, 23.5.1997, leg. Schäfer-Verwimp & Verwimp (herb. Schäfer-Verwimp Nr. 18783/B). Distrib.: Nearly pantropical, to the detailed distribution list in Miller et al. (1983) China (Piippo 1990) and Himalaya, Bhutan (Long & Grolle 1990) can be added. [ASV]

Plagiochila sandei Dozy ex Sande-Lac. – Pahang, Frasers Hill, Primär-Regenwald am Bishopstrail, epiphytisch, 1280-1350 m, 21.5.1997, leg. Schäfer-Verwimp & Verwimp (STU, herb. Schäfer-Verwimp Nr. 18637); - , Cameron Highlands, Tanah Rata, epiphytisch im Bergregenwald unterhalb der Robinson-Fälle, c. per. & c. andr., 1370 m, 25.5.1997, leg. Schäfer-Verwimp & Verwimp (EGR, G, JE, STU, herb. Schäfer-Verwimp Nr. 18924). Distrib.: Java, Sumatra, Borneo, Philippines, Seram Island (Inoue 1989). [ASV]

Tonga

Cololejeunea pakseana Tix. – Tongatapu, Südostküste unweit des Flughafens, epiphytisch an der Wurzel eines Baumes, Waldrand, mit *Lejeunea anisophylla* Mont; 0-10 m, 15.9.1996, leg. Chr. Schäfer, det. H. Hürlimann, as *C. cf. pakseana* (herb. Schäfer-Verwimp Nr. 18280). Note: the lobules are much more variable than the figures by Tixier (1985: 105, fig. 52: 5-7) may indicate, only some being as figured, others having one lobe of the lobule in two cell rows, the other lobe in one cell row. Distrib.: Malaysia, southern Indochina (Tixier 1985). [ASV]

Venezuela

Colura naumannii (Schiffn.) Steph. (syn. *Colura patagonica* Jov.-Ast). – Edo. Mérida, Sierra Nevada, Páramos bei der Laguna Mucubaji zwischen Santo Domingo und Apartaderos, einzelne Pflanzen zwischen *Plagiochila* sp. an Ericaceae, 3550 m, 16.1.1990, leg. Schäfer-Verwimp & Verwimp (herb. Schäfer-Verwimp

Nr. 12192/A). Distrib.: Argentina, Chile, Colombia, Ecuador. [ASV]

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References

- Arts, T. & Sollman, P.** Remarks on *Phascum leptophyllum* C. Müll., an earlier name for *Tortula rhizophylla* (Sak.) Iwats. & K. Saito. *Lindbergia* 17: 20-27.
- Arts, T., 1996.** The genus *Splachnobryum* in Africa, with new combinations in *Bryum* and *Gymnostomiella*. *Journal of Bryology* 19: 65-77.
- Deguchi, H. & Oginuma, K. 1989.** Cytological studies on some Chilean mosses. *Lindbergia* 15: 87-90.
- Eddy, A. 1996.** A Handbook of Malesian Mosses. Vol. 3. 277 pp. The Natural History Museum, London.
- Geissler, P., Tan, B. & Hallingbäck, T. 1997.** Additions to the World Red List of Bryophytes. *The Bryological Times* 93: 1-7.
- Grolle, R. 1960.** Über *Saccogyna* Dum und *Saccogynidium*, eine neue Lebermoosgattung. *J. Hattori Bot. Lab.* 23: 41-67.
- Infante Sanchez, M. & Heras Perez, P., 1998.** Bryophytes from the Republic of Equatorial Guinea (West Central Africa). III. Contribution to the bryoflora of Rio Muni (Continental Region). *Tropical Bryology* 15: 1-13.
- Inoue, H. 1989.** The bryophytes of Sabah (North Borneo) with special reference to the BRYOTROP transect of Mount Kinabalu. V. *Plagiochila* (Plagiochilaceae, Hepaticae). *Willdenowia* 18: 555-567.
- Koponen, T. 1981.** A synopsis of Mniaceae (Bryophyta). VI. Southeast Asian taxa. *Acta Bot. Fennica* 117: 1-34.
- Long, D. G. & Grolle, R. 1990.** Hepaticae of Bhutan II. *J. Hattori Bot. Lab.* 69: 381-440.
- Menzel, M. & Schultze-Motel, W. 1990.** The bryophytes of Sabah (North Borneo) with special reference to the BRYOTROP transect of Mount Kinabalu. XI. Calymperaceae (Bryopsida). *Willdenowia* 19: 475-542.
- Miller, H. A., Whittier, H. O. & Whittier, B. A. 1983.** *Prodromus Florae Hepaticarum Polynesiae*. *Bryophytorum Bibliotheca* 25: 1-423.
- Mohamed, H. & Tan, B. C. 1988.** A Checklist of Mosses of Peninsular Malaya and Singapore. *The Bryologist* 91: 24-44.
- Müller, F., 1996.** Beitrag zur Moosflora der Insel Bioko (= Fernando Poo), Äquatorial-Guinea. *Tropical Bryology* 12: 75-96.
- O'Shea, B.J., 1995.** Checklist of the Mosses of Sub-Saharan Africa. *Tropical Bryology* 10: 91-198.
- Piippo, S. 1985.** Bryophyte flora of the Huon Peninsula, Papua New Guinea. X. Jackiellaceae, Scapaniaceae, Arnelliaceae and Acrobolbaceae (Hepaticae). *Acta Bot. Fennica* 131: 89-97.
- Piippo, S. 1989.** The bryophytes of Sabah (North Borneo) with special reference to the BRYOTROP transect of Mount Kinabalu. III. Geocalycaceae (Hepaticae). *Willdenowia* 18: 513-527.
- Piippo, S. 1990.** Annotated catalogue of Chinese Hepaticae and Anthocerotae. *J. Hattori Bot. Lab.* 68: 1-192.
- Tixier, P. 1985.** Contribution à la Connaissance des Cololejeunoideae. *Bryophytorum Bibliotheca* 27: 1-439. Cramer, Vaduz.
- Vána, J. 1993.** The bryophytes of Sabah (North Borneo) with special reference to the BRYOPTROP transect of Mount Kinabalu. XVIII. Cephaloziaceae (Hepaticopsida, Jungermanniales). *Willdenowia* 23: 245-255.

