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Notes on Early Land Plants Today. 38. New combinations and synonyms in Lepidoziaceae (Marchantiophyta)

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Cooper (2013) summarizes the current status of the family Lepidoziaceae and presents a new classification based on recent phylogenetic studies (Cooper *et al.* 2011, 2012). The classification requires many transfers of taxa and the new combinations and a new synonym are reported here. *Ceramanus gen. nov.* is newly described and *Tricholepidozia comb. et stat. nov.* elevated to generic rank. Several of the species require lectotypification, but this is beyond the scope of this nomenclatural note and lectotypes are designated only in two unambiguous cases.

Formal treatment

The format of this note follows Söderström *et al.* (2012) except that we use the Melbourne code of nomenclature (ICN; McNeill *et al.* 2012) instead of the Vienna code (ICBN; McNeill *et al.* 2006)

Bazzania menzelii E.D.Cooper, *nom. nov. pro Acromastigum emarginatum* Herzog, *Trans. Brit. Bryol. Soc.* 1: 309, 1950 (Herzog 1950).

Type:—BORNEO. Sarawak: Dulit, 1932, *P.W. Richards* 2189 (holotype JE).

Blocking name:—*Bazzania emarginata* (Steph.) C.M.Cooke, *Trans. Connecticut Acad. Arts* 12: 17, 1904 (Cooke 1904).

Note:—Menzel (1988) noted that *Acromastigum emarginatum* was a *Bazzania* sp. without transferring it. Future studies will determine whether it is a good species or a synonym to some other species.

Kurzia nivicola (R.M.Schust.) E.D.Cooper, *comb. nov.*

Basionym:—*Telaranea nivicola* R.M.Schust., *Nova Hedwigia* 15: 460, 1968 (Schuster 1968).

Type:—NEW ZEALAND. South Island: in snow tussock zone, above Sealy Lakes, Sealy Range, Mt. Cook Natl. Park, ca. 5,500 ft, *R.M. Schuster 67-491b* (holotype F).

Kurzia tasmanica (Steph.) E.D.Cooper, *comb. nov.*

Basionym:—*Lepidozia tasmanica* Steph., *Sp. Hepat. (Stephani)* 3: 580, 1909 (Stephani 1909).

Type:—AUSTRALIA. Tasmania: Tasman peninsula, *Moore s.n.* (G-113397 [=G-391][1]).

≡ *Telaranea tasmanica* (Steph.) J.J.Engel et G.L.Merr., *Phytologia* 79: 106, 1996 (Engel & Smith Merrill 1996).

1. References to specimens in G should preferably be given to the barcode used (M. Price, pers. comm.) but for comparability the number printed on the specimen, and often referred to in the past, is also given in square brackets. In case the barcode number is missing, the older number is still given within square brackets.

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Ceramanus E.D.*Cooper, gen. nov.*

Description:—Plants soft textured[1], flexuous, prostrate in loose to dense mats; usually complanate[2], glaucous to strongly ceraceous, whitish green to bluish green or pale green to yellowish green, dull and water repellent. Plants medium to large, to ca. 1 cm wide including branches[3]. Branching loosely, ± regularly, l(2)-pinnate, the branches predominantly of *Frullania*-type, often elongating and becoming leading shoots or becoming flagelliform. *Acromastigum*-type branches rarely present[4]. Ventral-intercalary branches present, leafy or stoloniform. Lateral-intercalary branches absent. Stems radially symmetrical to slightly smaller ventrally[5] with cortical cells moderately to distinctly differentiated, typically in 12-14 rows[6] of larger, thinner walled cells. Medullary cells in stem cross section numerous (ca. 25-90). Leaves on main shoot usually rigid and fragile. Lobes and lobe tips often caducous. Leaves strongly incubously to almost longitudinally inserted, horizontally oriented (in the same plane as the stem) at ± right angles to the stem, typically contiguous to loosely imbricate, becoming tightly shingled in dry or exposed conditions. Leaves small (ca. 200 m wide, 400 µm long) to large (ca. 1600 µm wide, 1600 µm long) sub-symmetric, to moderately asymmetric[7], 4-lobed rarely 5,6-lobed in larger species usually divided to 0.3-0.5. Lobes parallel with disc margins, to slightly divergent or weakly convergent in some species[8]. Lobes caudate-setaceous[9], 2-4 cells broad at the very base[10] tapering to, or abruptly terminated by, a uniseriate row of 2-8 cells. Cells of the uniseriate row short to markedly elongated. Septa constricted, straight or slightly swollen. Disc usually symmetrically quadrate to rectangular, occasionally weakly cuneate[11] or with a gently curved and weakly subcordate dorsal margin[12], typically 5-8 cells high[13] and 8 cells broad throughout[14]. Cells of disc typically in longitudinal rows and ± obvious tiers[15], near isodiametric to short rectangular, large, ca. 25-60 µm wide and 35-100 µm long. The basal row of cells weakly to distinctly larger than median disc cells. Branch leaves resembling those of the main shoots, smaller than stem leaves, often with three rather than four lobes, typically more tightly shingled and less deeply lobed. Underleaves highly reduced with respect to lateral leaves[16]. Disc abbreviated to as few as 1 tier of cells. Lobes usually uniseriate throughout, short to somewhat elongated and terminated by an apical slime papilla. Rhizoids from the distal cells of the underleaf disc. *Frullania*-type branch half-leaf bifid (very occasionally trifid), linear, obliquely inserted and bisecting the angle between the branch and main axis[17]. First branch underleaf undivided, rarely bi- or tri-lobed in some species, ciliate to subulate, inserted on stem, at branch base or at junction. Oil-bodies always present in living material, translucent, grayish, botryoidal, typically 4 or more per cell. Asexual reproduction present in most species, commonly by fragmenting leaf lobes, rarely by tubers terminating stoloniferous branches. Plants dioicous. Androecia either on short Frullania-type branches with a few to several cycles of normal vegetative leaves prior to androecial formation, or on short, abbreviated, ventral-intercalary branches lacking normal vegetative leaves. Bracts rather closely imbricate, strongly dorsally assurgent, and deeply concave; 2,3,4-lobed with each lobe terminating in a uniseriate row of (2)3 cells; lamina margins with a few slime papillae. Bracts monandrous with large antheridia for bract size, the stalk 6-8 cells high, biseriate. Bracteolar antheridia absent. Gynoecia feebly to strongly dorsally assurgent, weakly swollen and sparsely to densely rhizoidous at base. Bracts small for perianth size, those of innermost series usually closely ensheathing the perianth, occasionally erect. Bract apices ciliate to lobulate, margins with few to several slime papillae. Bracteoles of innermost series smaller than or similar in size to bracts, similar to identical in form. Perianth emergent, cylindrical to fusiform, terete in basal sector, the distal sector trigonous, with 3 to 8 distinct plicae, narrowing toward the contracted mouth. Mouth shortly denticulate, ciliate to lobulate. Perianth 2-5 stratose at the base, 1-2 stratose in the median portion and 1 stratose apically. Sporophyte with seta having 5-8 rows of outer cells and approx. 10-20 rows of inner cells. Capsule short elliptic with wall of 3 layers. Outer layer of cells in tiers, ± regularly short-rectangular, with 2-phase development. The longitudinal walls with well-defined sheet-like and nodular thickenings alternating with walls that are devoid of thickenings (or with

1. Except *C. grossiseta* which is firm textured.
2. Except *C. grossiseta* which is subisophyllous.
3. *C. elegans* and *C. pruinosus* are smaller.
4. Known in *C. grossiseta* and *C. clatritexta*.
5. Distinctly so and somewhat dorso-ventrally flattened in *C. perfragilis*.
6. But as few as 9 rows in *C. perfragilis* up to 26 rows in *C. clatritexta*.
7. Asymmetry more pronounced in species with larger leaves *C. clatritexta* and *C. grossiseta.*
8. Exceptional in *C. grossiseta* are the dorsal-most lobes which are strongly, often perpendicularly, divergent and oriented towards the shoot apex.
9. Unusually, attenuate in *C. clatritexta*.
10. Up to 7 cells broad in *C. clatritexta.*
11. In *C. centipes* and *C. grossiseta.*
12. In *C. clatritexta*.
13. As few as 2-3 in *C. pruinosus* and up to 14 in *C clatritexta.*
14. Broader, to ca. 20 cells broad distally, in *C. grossiseta* and *C. clatritexta*.
15. Tiers of cells becoming indistinct in larger leaves of *C. clatritexta*.
16. *C. grossiseta* exceptional in having large underleaves, smaller than, but resembling the lateral leaves.
17. Halfleaf narrowly rectangular to elliptic in *C. clatritexta*. Halfleaf lobes divergent in *C. grossiseta*.

sporadic, local, nonpigmented to pigmented, nodular swellings). The transverse walls devoid of thickenings, or rarely with a few nodular swellings. Innermost layer of cells tiered, irregularly narrowly rectangular, with semiannular bands common. Spores areolate. Elaters rigid, nontortuous only slightly tapering toward tips; bispiral to tips.

Type:—*Ceramanus centipes* (Taylor ex Gottsche, Lindenb. et Nees) E.D.Cooper.

Etymology:—From the Latin *cera* meaning wax and *manus* meaning hand. The name refers to the hand-like appearance of the typically glaucous leaves of species belonging to the genus.

Ceramanus centipes (Taylor ex Gottsche, Lindenb. et Nees) E.D.Cooper, *comb. nov.*

Basionym:—*Lepidozia centipes* Taylor ex Gottsche, Lindenb. et Nees, *Syn. Hepat.* 2: 204, 1845 (Gottsche et al. 1845).

Type:—AUSTRALIA. Tasmania: Terra Van Diemen, 1824, *Spence* (FH).

≡ *Telaranea centipes* (Taylor ex Gottsche, Lindenb. et Nees) R.M.Schust., *J. Hattori Bot. Club.* 26: 256, 1963 (Schuster 1963).

Ceramanus clatritexta (Steph.) E.D.Cooper, *comb. nov.*

Basionym:—*Lepidozia clatritexta* Steph., *Sp. Hepat. (Stephani)* 3: 583, 1909 (Stephani 1909).

Type:—AUSTRALIA. Western Australia: Swan River, *Drummond s.n., ex Herb. Kew* (G-113427 [=G-10726]).

≡ *Telaranea clatritexta* (Steph.) J.J.Engel et G.L.Merr., *Novon* 9: 339, 1999 (Engel & Smith Merrill 1999).

Ceramanus elegans (Colenso) E.D.Cooper, *comb. nov.*

Basionym:—*Lepidozia elegans* Colenso, *Trans. & Proc. New Zealand Inst*. 21: 65, 1888 [1889] (Colenso 1889).

Type:—NEW ZEALAND. Great Barrier Is., Firth of Thames, 1888, *Winkelmann s.n.* (*Colenso a.1355*) (BM, WELT).

≡ *Telaranea elegans* (Colenso) J.J.Engel et G.L.Merr., *Phytologia* 79: 251, 1996 (Engel & Smith Merrill 1996).

Ceramanus grossiseta (Steph.) E.D.Cooper, *comb. nov.*

Basionym:—*Lepidozia grossiseta* Steph., *Sp. Hepat. (Stephani)* 3: 584, 1909 (Stephani 1909).

Type:—AUSTRALIA. Tasmania: West Coast, near Moore's Lookout, March 1900, *T. B. Moore 5794* (G-69952).

≡ *Telaranea grossiseta* (Steph.) J.J.Engel et R.M.Schust., *Fieldiana, Bot. n.s.* 14: 3, 1983 (Engel & Schuster 1983).

Ceramanus perfragilis (J.J.Engel et G.L.Merr.) E.D.Cooper, *comb. nov.*

Basionym:—*Telaranea perfragilis* J.J.Engel et G.L.Merr., *Fieldiana, Bot. n.s.* 44: 72, 2004 (Engel & Smith Merrill 2004).

Type:—NEW ZEALAND. North Island: North Auckland Prov., NE Waitakere Ranges, Swanson University Reserve, Tram valley Road, 95 m, *Engel 20465* (holotype F, isotype CHR).

Ceramanus pruinosa (Herzog) E.D.Cooper, *comb. nov.*

Basionym:—*Lepidozia pruinosa* Herzog, *Memoranda Soc. Fauna Fl. Fenn*. 27: 93, 1952 [1951] (Herzog 1951).

Type:—FIJI. Koro: eastern slope of Maine Ridge, 300-500 m, *A. C. Smith 966* (holotype BISH).

≡ *Telaranea pruinosa* (Herzog) J.J.Engel et G.L.Merr., *Fieldiana, Bot. n.s.* 44: 184 (Engel & Smith Merrill 2004).

Ceramanus tuberifera (J.J.Engel et R.M.Schust.) E.D.Cooper, *comb. nov.*

Basionym:—*Telaranea tuberifera* J.J.Engel et R.M.Schust., *Fieldiana, Bot. n.s.* 14: 2, 1983 (Engel & Schuster 1983).

Type:—NEW ZEALAND. South Island: Fiordland Natl. Park, Falls Creek, Upper Hollyford River Valley, along Milford Road, *Schuster 48773* (holotype F).

Lepidozia septemfida Steph., *Sp. Hepat.* (*Stephani*) 3: 588, 1909 (Stephani 1909).

Type:—AUSTRALIA. New South Wales: Katumba Falls, *Watts 574* (G-69681).

= *Lepidozia multifida* Steph., *J. & Proc. Roy. Soc. New South Wales* 48: 114, 1914 (Stephani & Watts 1914), ***syn. nov.***

Type:—AUSTRALIA. New South Wales: Blue Mountains, Valley Glacier, Sept. 1912, *Watts* (G-43694 [=G-100]).

Note:—Australian *Lepidozia* with dorsal margins having spines or accessory lobes are frequently incorrectly assigned to *Lepidozia ulothrix*. The senior author has not seen any specimens from mainland Australia attributable to *Lepidozia ulothrix*. Rather, the majority of specimens are consistent with *Lepidozia septemfida* and *Lepidozia multifida* and a division of this taxon on the basis of the number of accessory lobes is impossible to maintain.

Unfortunately, the name *Lepidozia septemfida* (having seven lobes) has priority over the more accurate and flexible name *Lepidozia multifida* (having multiple lobes).

Neolepidozia aubertii (Ast) E.D.Cooper, *comb. nov.*
Basionym:—*Lepidozia aubertii* Ast, *Candollea* 11: 35, 1947 (Jovet-Ast 1947).
Type:—NEW CALEDONIA. *Franc 13* (PC, G)
≡ *Telaranea aubertii* (Ast) J.J.Engel et G.L.Merr., *Fieldiana, Bot. n.s.* 44: 124, 2004 (Engel & Smith Merrill 2004).

Neolepidozia autoica (J.J.Engel et G.L.Merr.) E.D.Cooper, *comb. nov.*
Basionym:—*Telaranea autoica* J.J.Engel et G.L.Merr., *Fieldiana, Bot., n.s.* 44: 124, 2004 (Engel & Smith Merrill 2004).
Type:—CHILE. Juan Fernández: Más a Tierra, on the ridge leading to Cerro Damajuana, ca. 500 m, on branches, *G. Kunkel H290* (holotype S-B108039).

Neolepidozia consobrina (J.J.Engel et G.L.Merr.) E.D.Cooper, *comb. nov.*
Basionym:—*Telaranea consobrina* J.J.Engel et G.L.Merr., *Novon* 9: 339, 1999 (Engel & Smith Merrill 1999).
Type:—AUSTRALIA. Tasmania: eastern slope of Black Bluff just below summit, S of Burnie, 1250 m, 21 March 1977, *Engel 15799* (holotype F, isotype HO).

Neolepidozia cuneifolia (Steph.) Fulford et J.Taylor, *Brittonia* 11: 85, 1959 (Fulford & Taylor 1959).
Basionym:—*Lepidozia cuneifolia* Steph., *Sp. Hepat. (Stephani)* 3: 612, 1909 (Stephani 1909).
Type:—PAPUA NEW GUINEA. Moresby: in montosis Moroka, 1300 m, 1893, *Loria, Hb. Levier* (lectotype [**here designated**] G-69618 [=G-11916], isolectotypes G-60917 [=G-12264], G-60918 [=G-12264a], G-60919 [=G-12265]).
Note:—There are four isotypes in G but only this one is marked as original in the writing of Stephani.
≡ *Telaranea cuneifolia* (Steph.) J.J.Engel et G.L.Merr., *Fieldiana, Bot., n.s.* 44: 145, 2004 (Engel & Smith Merrill 2004).

Neolepidozia disparata (J.J.Engel et G.L.Merr.) E.D.Cooper, *comb. nov.*
Basionym:—*Telaranea disparata* J.J.Engel et G.L.Merr., *Fieldiana, Bot., n.s.* 44: 147, 2004 (Engel & Smith Merrill 2004).
Type:—AUSTRALIA. Queensland: Daintree Region, Noah Creek, 23 July 1991, *Stone s.n.* (holotype MELU-1431, isotype F-1172744).

Neolepidozia gibbsiana (Steph.) E.D.Cooper, *comb. nov.*
Basionym:—*Lepidozia gibbsiana* Steph., *Sp. Hepat. (Stephani)* 6: 328, 1922 (Stephani 1922).
Type:—NEW ZEALAND. North Island: without specific loc., *Gibbs 1041* (G-69953).
Note:—Fulford annotated the type specimen as a *Neolepidozia* in 1959 but we have not found that she ever published it.
≡ *Telaranea gibbsiana* (Steph.) E.A.Hodgs., *Trans. & Proc. Roy. Soc. New Zealand, Bot.* 3: 70, 1965 (Hodgson 1965).

Neolepidozia heterotexta (Steph.) E.D.Cooper, *comb. nov.*
Basionym:—*Lepidozia heterotexta* Steph., *Sp. Hepat. (Stephani)* 6: 329, 1922 (Stephani 1922).
Type:—NEW CALEDONIA. in jugo Dogny, 1050 m, July 1909, *Lerat s.n.* (G-128745 [=G-346], G-128746 [=G-371]).
≡ *Telaranea heterotexta* (Steph.) J.J.Engel et G.L.Merr., *Fieldiana, Bot., n.s.* 44: 160, 2004 (Engel & Smith Merrill 2004).

Neolepidozia hodgsoniae (J.J.Engel et G.L.Merr.) E.D.Cooper, *comb. nov.*
Basionym:—*Telaranea hodgsoniae* J.J.Engel et G.L.Merr., *Phytologia* 79: 250, 1996 (Engel & Smith Merrill 1996).
Type:—NEW ZEALAND. South Island: Canterbury Prov., Peel Forest, ca. 1500 ft., *Child H2084* (holotype F, isotype CHR).

Neolepidozia leratii (Steph.) E.D.Cooper, *comb. nov.*
Basionym:—*Lepidozia leratii* Steph., *Sp. Hepat. (Stephani)* 6: 333, 1922 (Stephani 1922).
Type:—NEW CALEDONIA. Summit of Mont Mou, July 1909, *Lerat s.n., sub Paris no 89* (G).
≡ *Telaranea leratii* (Steph.) J.J.Engel et G.L.Merr., *Fieldiana, Bot., n.s.* 44: 162 (Engel & Smith Merrill 2004).

Neolepidozia longitudinalis (Herzog) E.D.Cooper, *comb. nov.*
Basionym:—*Lepidozia longitudinalis* Herzog, *Trans. Brit. Bryol. Soc*. 1: 312, 1950 (Herzog 1950).
Type:—BORNEO. Sarawak: L. C. Dulit, under 300 m, *Richards 2548* (syntype BM).
≡ *Telaranea longitudinalis* (Herzog) R.M.Schust., *Hepat. Anthocerotae N. Amer.* 2: 30, 1969 (Schuster 1969).

Neolepidozia mamillosa (Schiffn.) E.D.Cooper, *comb. nov.*
Basionym:—*Lepidozia mamillosa* Schiffn., *Nova Acta. Acad. Caes. Leop.-Carol. German. Nat. Cur.* 60: 254, 1893 (Schiffner 1893).
Type:—NEW GUINEA. s.loc., June 1875, *leg. Dr. Naumann in Expeditione navis "Gazelle"* (holotype FH).
≡ *Telaranea mamillosa* (Schiffn.) J.J.Engel et G.L.Merr., *Fieldiana, Bot., n.s.* 44: 166, 2004 (Engel & Smith Merrill 2004).

Neolepidozia meridiana (E.A.Hodgs.) E.D.Cooper, *comb. nov.*
Basionym:—*Lepidozia meridiana* E.A.Hodgs., *Trans. Roy. Soc. New Zealand* 83: 611, 1956 (Hodgson 1956).
Type:—NEW ZEALAND. Auckland Island: "Cape Expedition", No., 2 Camp. 31 October 1944, *Turbott s.n.* (holotype CHR).
≡ *Telaranea meridiana* (E.A.Hodgs.) E.A.Hodgs., *Rec. Domin. Mus.* 4: 107, 1962 (Hodgson 1962).

Neolepidozia ophiria (Gottsche ex Steph.) E.D.Cooper, *comb. nov.*
Basionym:—*Lepidozia ophiria* Gottsche ex Steph., *Sp. Hepat. (Stephani)* 3: 611, 1909 (Stephani 1909).
Type:—MALAYSIA. Johor: Mt. Ophir, *Mixon 972c* (G).
≡ *Telaranea ophiria* (Gottsche ex Steph.) J.J.Engel et G.L.Merr., *Fieldiana, Bot., n.s.* 44: 176, 2004 (Engel & Smith Merrill 2004).

Neolepidozia palmata (J.J.Engel et G.L.Merr.) E.D.Cooper, *comb. nov.*
Basionym:—*Telaranea palmata* J.J.Engel et G.L.Merr., *Novon* 9: 344, 1999 (Engel & Smith Merrill 1999b).
Type:—AUSTRALIA. Tasmania: ridge SE of Black Bluff near junction of access road to plateau area and road to Devonport gold mines, S facing slope, S of Burnie, 1000 m, *Engel 16251* (holotype F, isotype HO).

Neolepidozia paludicola (E.A.Hodgs.) E.D.Cooper, *comb. nov.*
Basionym:—*Lepidozia meridiana* var. *paludicola* E.A.Hodgs., *Trans. & Proc. Roy. Soc. New Zealand, Bot.* 3: 69, 1965 (Hodgson 1965).
Type:—NEW ZEALAND. North Island: Tararuas, Oriwa Lake Hollow, bog, 3300 ft., 15 April 1933, *Zotov s.n.* (holotype CHR "No. 6619 in Bot. Divn. Herb.").
≡ *Telaranea paludicola* (E.A.Hodgs.) E.A.Hodgs., *Trans. & Proc. Roy. Soc. New Zealand, Bot.* 3: 69, 1965 (Hodgson 1965).

Neolepidozia patentissima (Hook.f. et Taylor) E.D.Cooper, *comb. nov.*
Basionym:—*Jungermannia patentissima* Hook.f. et Taylor, *London J. Bot.* 3: 386, 1844 (Hooker & Taylor 1844).
Type:—NEW ZEALAND. Auckland Island, *Hooker s.n.* (BM, FH).

—var. *ampliata* (J.J.Engel et G.L.Merr.) E.D.Cooper, *comb. nov.*
Basionym:—*Telaranea patentissima* var. *ampliata* J.J.Engel et G.L.Merr., *Fieldiana, Bot., n.s.* 44: 48, 2004 (Engel & Smith Merrill 2004).
Type:—NEW ZEALAND. Otago Prov.: Mt. Maungatua, W of Mosgiel, 500 m, *Engel 17777* (holotype F, isotype CHR).

—var. *zebrina* (J.J.Engel et G.L.Merr.) E.D.Cooper, *comb. nov.*

Basionym:—*Telaranea patentissima* var. *zebrina* J.J.Engel et G.L.Merr., *Fieldiana, Bot., n.s.* 44: 48, 2004 (Engel & Smith Merrill 2004).

Type:—NEW ZEALAND. North Island: Puketi Forest, 6 December 1993, *Braggins 93/172* (holotype AKU, isotype F).

Note:—The varieties above will also create the autonym.

Neolepidozia pennata (J.J.Engel et G.L.Merr.) E.D.Cooper, *comb. nov.*

Basionym:—*Telaranea pennata* J.J.Engel et G.L.Merr., *Phytologia* 79: 252, 1996 (Engel & Smith Merrill 1996).

Type:—NEW ZEALAND. South Island: Westland Prov., Route 73, 8 miles W of Turiwhate, *Engel 6754* (holotype F, isotype CHR).

Neolepidozia planifolia (Steph.) E.D.Cooper, *comb. nov.*

Basionym:—*Lepidozia planifolia* Steph., *Sp. Hepat. (Stephani)* 3: 629, 1909 (Stephani 1909).

Type:—JAPAN. Chiba: Mt. Tsurugisan in Prov. Awa, June 1900, *U. Faurie 654* (G-69689 [=G-244]).

Neolepidozia praenitens (Lehm. et Lindenb.) E.D.Cooper, *comb. nov.*

Basionym:—*Jungermannia praenitens* Lehm. et Lindenb., *Nov. Stirp. Pug.* 6: 27, 1834 (Lehmann 1834).

Type:—NEW ZEALAND. South Island: Dusky Bay, *Menzies s.n.* (G, S).

≡ *Telaranea praenitens* (Lehm. et Lindenb.) E.A.Hodgs., *Rec. Dom. Mus*. 4: 107, 1962 (Hodgson 1962).

—var. *dentifolia* (J.J.Engel et G.L.Merr.) E.D.Cooper, *comb. nov.*

Basionym:—*Telaranea praenitens* var. *dentifolia* J.J.Engel et G.L.Merr., *Phytologia* 79: 253, 1996 (Engel & Smith Merrill 1996).

Type:—NEW ZEALAND. South Island: Fiordland, Dusky Sound, Supper Cove, 11 February 1946, *Allan s.n.* (holotype CHR, isotype F).

Note:—This variety also creates the autonym.

Neolepidozia quadristipula (Steph.) E.D.Cooper, *comb. nov.*

Basionym:—*Lepidozia quadristipula* Steph., *J. & Proc. Roy. Soc. New South Wales* 48: 115, 1914 (Stephani & Watts 1914).

Type:—AUSTRALIA. New South Wales: Rotunda, Neate's Glen, Blackheath, 4 Jan. 1911, *Watts 1009* (G-128051 [=G-276]).

≡ *Telaranea quadristipula* (Steph.) J.J.Engel et G.L.Merr., *Fieldiana, Bot. n.s.* 44: 20, 2004 (Engel & Smith Merrill 2004).

Neolepidozia rectangularis (R.M.Schust.) E.D.Cooper, *comb. nov.*

Basionym:—*Telaranea rectangularis* R.M.Schust., *Phytologia* 39: 241, 1978 (Schuster 1978).

Type:—VENEZUELA. Mérida: above Río Frías, Sierra Nevada de Mérida, *Schuster & Ruiz-Teran 76-1480* (holotype F).

Neolepidozia tetrapila (Hook.f. et Taylor) E.D.Cooper, *comb. nov.*

Basionym:—*Lepidozia tetrapila* Hook.f. et Taylor, *London J. Bot.* 5: 370, 1846 (Taylor 1846b).

Type:—NEW ZEALAND. s.loc., 1844, *Hooker 119* (lectotype [Engel & Smith Merrill 2004] FH, isolectotype W-Lindenb. Hep. no. 4739).

≡ *Telaranea tetrapila* (Hook.f. et Taylor) J.J.Engel et G.L.Merr., *Phytologia* 79: 253, 1996 (Engel & Smith Merrill 1996).

—var. *cancellata* (Colenso) E.D.Cooper, *comb. nov.*

Basionym:—*Lepidozia cancellata* Colenso, *Trans. & Proc. New Zealand Inst.* 18: 244, 1886 (Colenso 1886).

Type:—NEW ZEALAND. Waipawa Co.: near Norsewood, edge of Bartramia Creek, 1885, *Colenso a.1418* (BM, WELT).

—var. *roseana* (Steph.) E.D.Cooper, *comb. nov.*
Basionym:—*Lepidozia roseana* Steph., *Sp. Hepat. (Stephani)* 3: 590, 1909 (Stephani 1909).
Type:—NEW ZEALAND. Without specific loc., 1898, *Petrie s.n.*, "com. Rose" (G-43811).
Note:—The varieties above will also create the autonym.

Neolepidozia tridactylis (Lehm. et Lindenb.) E.D.Cooper, *comb. nov.*
Basionym:—*Jungermannia tridactylis* Lehm. et Lindenb., *Nov. Stirp. Pug.* 4: 41, 1832 (Lehmann 1832).
Type:—AUSTRALIA. "Nova Hollandia", s.loc., *s. coll*., *Hb. Berol[inensis] 46* (syntypes W Lindenb. Hep. no. 4636, S-B29322).
≡ *Telaranea tridactylis* (Lehm. et Lindenb.) J.J.Engel et G.L.Merr., *Phytologia* 79: 253, 1996 (Engel & Smith Merrill 1996).

Neolepidozia trifida (Steph.) E.D.Cooper, *comb. nov.*
Basionym:—*Lepidozia trifida* Steph., *Mildbraed, Wiss. Ergebn. Deut. Zentr.-Afr. Exped. (1907-08), Bot.* 2: 120, 1910 (Stephani 1910).
Type:—RWANDA. "Rugege-Wald: Waldmoor, 1800 m, *sin. coll.* (n. 813 ex parte) (G-113394 [=G-440]).
≡ *Telaranea trifida* (Steph.) R.M.Schust., *Hepat. Anthocerotae N. Amer.* 1:105, 1966 (Schuster 1966).

Neolepidozia verruculosa (J.J.Engel et G.L.Merr.) E.D.Cooper, *comb. nov.*
Basionym:—*Telaranea verruculosa* J.J.Engel et G.L.Merr., *Fieldiana, Bot. n.s.* 44: 197, 2004 (Engel & Smith Merrill 2004).
Type:—AUSTRALIA. Queensland: Kuranda, Wright's Lookout Surprise to Creek Track, 9 July 1994, *Scott s.n*. (holotype MELU, isotype F).

Tricholepidozia (R.M.Schust.) E.D.Cooper, *comb. et stat. nov.*
Basionym:—*Telaranea* subgen. *Tricholepidozia* R.M.Schust., *J. Hattori Bot. Lab*. 26: 256, 1963 (Schuster 1963).
Type:—*Telaranea mooreana* (Steph.) R.M.Schust.

Tricholepidozia chaetocarpa (Pearson) E.D.Cooper, *comb. nov.*
Basionym:—*Lepidozia chaetocarpa* Pearson, *J. Linn. Soc., Bot*. 46: 27, 1922 (Pearson 1922).
Type:—NEW CALEDONIA. Hab. Mont Koghi. On upper surface of fallen log. Forest, 3000 ft. *Compton 740*.

Tricholepidozia fernandeziensis (Steph.) E.D.Cooper, *comb. nov.*
Basionym:—*Lepidozia fernandeziensis* Steph., *Kungl. Svenska Vetenskapsakad. Handl.* 46 (9): 46, 1911 (Stephani 1911).
Type:—CHILE. Juan Fernandez: Más a Tierra, El Yunque, 24 August 1908, *Skottsberg 18* (Lectotype [Solari 1987] S-B108021).
≡ *Telaranea fernandeziensis* (Steph.) J.J.Engel et G.L.Merr., *Novon* 9: 341, 1999 (Engel & Smith Merrill 1999).

Tricholepidozia ferruginea (J.J.Engel et G.L.Merr.) E.D.Cooper, *comb. nov.*
Basionym:—*Telaranea ferruginea* J.J.Engel et G.L.Merr., *Fieldiana, Bot. n.s.* 44: 159, 2004 (Engel & Smith Merrill 2004).
Type:—CHILE. Magellanes: Isla Desolación, Bahía Tuesday, head of inner harbour, *Engel 5649* (holotype MSC, isotype F).

Tricholepidozia fissifolia (Steph.) E.D.Cooper, *comb. nov.*
Basionym:—*Lepidozia fissifolia* Steph., *Sp. Hepat. (Stephani)* 3: 610, 1909 (Stephani 1909).
Type:—NEW CALEDONIA. Mt. Koghi, June 1905, *Etesse s.n.* (G-113322).
≡ *Telaranea fissifolia* (Steph.) Hürl., *Bauhinia* 8: 105, 1985 (Hürlimann 1985).

Tricholepidozia jowettiana (H.A.Mill.) E.D.Cooper, *comb. nov.*
Basionym:—*Telaranea jowettiana* H.A.Mill., *J. Bryol.* 14: 235, 1986 (Miller 1986).
Type:—AUSTRALIA. Norfolk Island: SE slopes of Mt. Pitt, 250-300 m, on tree fern, *Jowett 16* (holotype MU).

Tricholepidozia kaindina (Grolle) E.D.Cooper, *comb. nov.*
Basionym:—*Telaranea kaindina* Grolle, *J. Hattori Bot. Lab.* 31: 9, 1968 (Grolle 1968).
Type:—PAPUA NEW GUINEA. Morobe: Mt. Kaindi, 2650 m, *Hewson 467* (holotype L, isotypes JE, NICH).

Tricholepidozia kogiana (Steph.) E.D.Cooper, *comb. nov.*
Basionym:—*Lepidozia kogiana* Steph., *Sp. Hepat. (Stephani)* 6: 332, 1922 (Stephani 1922).
Type:—NEW CALEDONIA. Mt. Koghis, 1 November 09, *Franc s.n., ex hb. Thériot* (G-69951 [=G-32]).
≡ *Telaranea kogiana* (Steph.) Grolle, *J. Hattori Bot. Lab.* 29: 284, 1966 (Grolle 1966).

Tricholepidozia lawesii (Steph.) E.D.Cooper, *comb. nov.*
Basionym:—*Lepidozia lawesii* Steph., *Hedwigia* 28: 264, 1889 (Stephani 1889d).
Type:—PAPUA NEW GUINEA. Astrolabe Range, 1885, *Lawes s.n.* (G-69950 [=G-44], isotype M).
≡ *Telaranea lawesii* (Steph.) Grolle, *J. Hattori Bot. Lab.* 28: 53, 1965 (Grolle 1965).

Tricholepidozia lindenbergii (Gottsche) E.D.Cooper, *comb. nov.*
Basionym:—*Lepidozia lindenbergii* Gottsche, *Syn. Hepat.* 2: 213 1845 (Gottsche *et al.* 1845).
Type:—NEW ZEALAND. Nova Zeelandia inter *L. praenitentem* (Hb. Hk.) (syntype W-Lindenb. Hep. no. 4849).
≡ *Telaranea lindenbergii* (Gottsche) J.J.Engel et G.L.Merr., *Phytologia* 79: 252, 1996 (Engel & Smith Merrill 1996).

—var. *complanata* (J.J.Engel et G.L.Merr.) E.D.Cooper, *comb. nov.*
Basionym:—*Telaranea lindenbergii* var. *complanata* J.J.Engel et G.L.Merr., *Phytologia* 79: 252, 1996 (Engel & Smith Merrill 1996).
Type:—NEW ZEALAND. South Island: Otago Prov., Whare Flat, W of Dunedin, 70 m, *Engel 17641* (holotype F).

—var. *mellea* (J.J.Engel et G.L.Merr.) E.D.Cooper, *comb. nov.*
Basionym:—*Telaranea lindenbergii* var. *mellea* J.J.Engel et G.L.Merr., *Phytologia* 79: 252, 1996 (Engel & Smith Merrill 1996).
Type:—NEW ZEALAND. South Island: Otago Prov., near Herbert, *Allison H5684* (holotype CHR, isotype F).

—var. *papillata* (J.J.Engel et G.L.Merr.) E.D.Cooper, *comb. nov.*
Basionym:—*Telaranea lindenbergii* var. *papillata* J.J.Engel et G.L.Merr., *Fieldiana, Bot., n.s.* 44: 83, 2004 (Engel & Smith Merrill 2004).
Type:—NEW ZEALAND. North Island: South Auckland Prov., Whareorino Forest, track to Leitch's Hut, 280 m, *Engel 23773* (holotype F, isotype AK).
Note:—The varieties above will also create the autonym.

Tricholepidozia marginata (J.J.Engel et G.L.Merr.) E.D.Cooper, *comb. nov.*
Basionym:—*Telaranea marginata* J.J.Engel et G.L.Merr., *Fieldiana, Bot. n.s.* 44: 166, (Engel & Smith Merrill 2004).
Type:—CHILE. Valdivia: near Río Futa in vicinity of Futa, 10 m, *Engel 11035* (holotype F).

Tricholepidozia martinii (E.A.Hodgs.) E.D.Cooper, *comb. nov.*
Basionym:—*Lepidozia martinii* E.A.Hodgs., *Trans. Roy. Soc. New Zealand* 83: 256, 1956 (Hodgson 1956), "*martini*".
Type:—NEW ZEALAND. North Island: road to Dawson Falls, Mt. Egmont, 2000-3000 ft., January 1955, *Hodgson 10220* (holotype MPN).
≡ *Telaranea martinii* (E.A.Hodgs.) R.M.Schust., *J. Hattori Bot. Lab.* 26: 256, 1963 (Schuster 1963).

Tricholepidozia melanesica (H.A.Mill.) E.D.Cooper, *comb. nov.*
Basionym:—*Telaranea melanesica* H.A.Mill., *J. Bryol.* 14, 237, 1986 (Miller 1986).
Type: — VANUATU. Erromango: Mt. Fedmoghum, ca. 630 m, *Miller 15157* (holotype MU)

Tricholepidozia murphyae (Paton) E.D.Cooper, *comb. nov.*
Basionym:—*Telaranea murphyae* Paton, *Trans. Brit. Bryol. Soc.* 4: 776, 1965 (Paton 1965).
Type:—UNITED KINGDOM. Cornwall: Scilly Isle, near the Abbey Gardens, Mai 1962, *leg. Paton* (holotype OXF, isotype JE)

Tricholepidozia neesii (Lindenb.) E.D.Cooper, *comb. nov.*
Basionym:—*Lepidozia neesii* Lindenb., *Syn. Hepat*. 2: 212, 1845 (Gottsche *et al*. 1845).
Type:—INDONESIA. Java: in montibus provinciae Bantam, ad Rawayan, in tumulis Baduorum aliisque locis Javae insulae, *Blume s.n., in Hb. N*. (Lectotype [**here designated**] STR).
Note:—There are two possible syntypes in the original description. Fulford (1963) did not designate the type but she did clearly indicate that she considered the d'Urville specimen (in Hb. M) as something other than this taxon.
≡ *Telaranea neesii* (Lindenb.) Fulford, *Brittonia* 15: 80, 1963 (Fulford 1963).

Tricholepidozia octoloba (Del Ros.) E.D.Cooper, *comb. nov.*
Basionym:—*Telaranea octoloba* Del Ros., *Philipp. J. Sci*. 100, 1971 (Del Rosario 1971).
Type:—PHILIPPINES. Mindanao: Davao, Mt. McKinley, *Edamo 605* (holotype PNH, reportedly lost fide Engel & Smith Merrill 2004).

Tricholepidozia plumulosa (Lehm. et Lindenb.) E.D.Cooper, *comb. nov.*
Basionym:—*Jungermannia plumulosa* Lehm. et Lindenb., *Nov. Stirp. Pug.* 6: 30, 1834 (Lehmann 1834).
Type:—ARGENTINA. Tierra del Fuego: I. de los Estados, *Menzies s.n.* (isotype G ex hb. K).
≡ *Telaranea plumulosa* (Lehm. et Lindenb.) Fulford, *Brittonia* 11: 77, 1959 (Fulford & Taylor 1959).

Tricholepidozia pulcherrima (Steph.) E.D.Cooper, *comb. nov.*
Basionym:—*Lepidozia pulcherrima* Steph., *Sp. Hepat. (Stephani)* 3: 600, 1909 (Stephani 1909).
Type:—NEW ZEALAND. Okarito, *Kirk 588* (G-47486 [=G-274]).
≡ *Telaranea pulcherrima* (Steph.) R.M.Schust., *J. Hattori Bot. Lab.* 26: 256, 1963 (Schuster 1963).

—var. *mooreana* (Steph.) E.D.Cooper, *comb. nov.*
Basionym:—*Lepidozia mooreana* Steph., *Sp. Hepat. (Stephani)* 3: 585, 1909 (Stephani 1909).
Type:—AUSTRALIA. Tasmania: West Coast, King River, *T. B. Moore s.n.* (G-47487).
Note:—The variety will also create the autonym.
≡ *Telaranea mooreana* (Steph.) R.M.Schust., *J. Hattori Bot. Lab.* 26: 256, 1963 (Schuster 1963).

Tricholepidozia quadriseta (Steph.) E.D.Cooper, *comb. nov.*
Basionym:—*Lepidozia quadriseta* Steph., *Sp. Hepat. (Stephani)* 3: 582, 1909 (Stephani 1909).
Type:—AUSTRALIA. New South Wales: East Ballina, *Watts 433* (G-128052 [=G-10729]).
≡ *Telaranea quadriseta* (Steph.) J.J.Engel et G.L.Merr., *Fieldiana, Bot. n.s.* 44: 95 (Engel & Smith Merrill 2004).

Tricholepidozia remotifolia (E.A.Hodgs.) E.D.Cooper, *comb. nov.*
Basionym:—*Telaranea remotifolia* E.A.Hodgs., *Rec. Domin. Mus.* 4: 107, 1962. (Hodgson 1962).
Type:—NEW ZEALAND. North Island: Tararuas, Ruamahanga V., 3 Dec. 1933, *Zotov 9275* (holotype MPN, isotype CHR).

Tricholepidozia semperiana (Del Ros.) E.D.Cooper, *comb. nov.*
Basionym:—*Lepidozia semperiana* Steph., *Sp. Hepat. (Stephani)* 3: 612, 1909 (Stephani 1909).
Type:—PHILIPPINES, Luzon, *Semper s.n.* (lectotype [Engel & Smith Merrill 2004] G-113501 [=G-12707]).

Tricholepidozia tetradactyla (Hook.f. et Taylor) E.D.Cooper, *comb. nov.*

Basionym:—*Jungermannia tetradactyla* Hook.f. et Taylor, *London J. Bot.* 3: 386, 1844 (Hooker & Taylor 1844).

Type:—NEW ZEALAND. Auckland Island: November 1840, *Hooker s.n.* (lectotype [Engel & Smith Merrill 2004] FH, isolectotype BM).

≡ *Telaranea tetradactyla* (Hook.f. et Taylor) E.A.Hodgs., *Rec. Domin. Mus.* 4: 106, 1962 (Hodgson 1962).

Tricholepidozia trichocoleoides (Herzog) E.D.Cooper, *comb. nov.*

Basionym:—*Lepidozia trichocoleoides* Herzog, *Trans. Brit. Bryol. Soc*. 1: 314, 1950 (Herzog 1950).

Type:—MALAYSIA. Sarawak: Dulit Trail, ca. 750 m, *Richards 2576* (JE).

≡ *Telaranea trichocoleoides* (Herzog) R.M.Schust., *J. Hattori Bot. Lab.* 26: 256, 1963 (Schuster 1963).

Paracromastigum denticulatum (Steph.) E.D.Cooper, *comb. nov.*

Basionym:—*Lembidium denticulatum* Steph., *Sp. Hepat. (Stephani)* 6: 444 (Stephani 1924).

Type:—NEW CALEDONIA. Plaine des Lacs, June 1911, *Franc s.n.* (G-69408 [=G-11031]).

Paracromastigum microphyllum (R.M.Schust. ex J.J.Engel) E.D.Cooper, *comb. nov.*

Basionym:—*Hyalolepidozia microphylla* R.M.Schust. ex J.J.Engel, *Novon* 17: 310, 2007 (Engel 2007).

Type:—NEW ZEALAND. South Island: Fiordland, Hunter Mtns., Mt. Burns, 4500-5000 ft., *R.M. Schuster 84-101b* (holotype F).

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