

New bryophyte taxon records for tropical countries 5

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HEPATICAЕ

Australia

Cololejeunea inflata Steph. (syn. *C. oshimensis* (Horik.) Benedix).

Queensland, Atherton Tableland, 10 km south of The Crater NP. 900 m alt. Rainforest; epiphyllous. With *Cololejeunea pseudofloccosa*, *C. tenella*, *Cheilolejeunea vittata* etc. Leg. J.Eggers 1988 (AUS 4/62 c.per.). Queensland, Paluma, Mt. Spec NP. 900m alt. Rainforest; epiphyllous. With *Cololejeunea floccosa*, *Otolejeunea australiensis*, *Stenolejeunea apiculata* etc. Leg. J.Eggers 1988 (AUS 4/50 c.per.). Distribution: SE-Asia from Sri Lanka to Japan and New Caledonia.

Belize

Aphanolejeunea angustissima Steph. (syn. *A. gracilis* Ast).

Cayo Distr., Mountain Pine Ridge, Cave Rio Frio. ca. 600 m alt. Rainforest along small river; epiphyllous. Leg. J.Eggers & H.Timm 1996, det.

Eggers (BEZ 2/43); Cayo Distr., Blue Hole Reserv., 100-200 m alt. Lowland rain forest; epiphyllous. Leg. J.Eggers & H.Timm, det. Eggers (BEZ 3/17). Distribution: Widespread in the Neotropics from Mexico to Ecuador and the Caribb. Islands.

Aphanolejeunea truncatifolia Horik. (syn. *A. subdiaphana* (Ast) Pócs).

Cayo Distr., Mountain Pine Ridge, Rio Frio. ca.600m alt. Rainforest along a small river; epiphyllous. Leg. J.Eggers & H.Timm 1996, det. Eggers (BEZ 2/40). Cayo Distr., Blue Hole Reserv., 100-200m alt. Lowland forest; epiphyllous. Leg. J.Eggers & H.Timm 1996, det. Eggers (BEZ 3/10 c.per.+andr.). Orange Walk Distr., Rio Bravo Reserv. Lowland forest; epiphyllous on palm leaf. Leg. J.Eggers & H.Timm 1996, det. Eggers (BEZ 4/12 c.andr.). St Ann Creek Distr., Cockscombe Reserv. Lowland forest besides small river; epiphyllous on fern leaf. Leg. J.Eggers & H.Timm 1996, det. Eggers (BEZ 5/4). Toledo Distr., Monkey

River. 1-5 m alt. Lowland forest along river; epiphyllous. Leg. J.Eggers & H.Timm 1996, det. Eggers (BEZ 7/2). Distribution: Pantropical.

Diplasiolejeunea cavifolia Steph.

Cayo Distr., Blue Hole Reserv. 100-200 m alt. Lowland rainforest; epiphyllous. Leg. J.Eggers & H.Timm 1996, det. Eggers (BEZ 3/18). Distribution: Pantropical. In the Neotropics reported from Mexico, Panama, Colombia, the Guianas.

Lejeunea flava (Sw.) Nees.

St Ann Creek Distr., Cockscombe Reserv. Lowland rainforest; epiphyllous. Leg. J.Eggers & H.Timm 1996, det. Eggers (BEZ 5/27 c.per.+andr.). Distribution: Pantropical.

Lejeunea trinitensis Lindenb. & Gottsche (syn. *Rectolejeunea pililoba* (Spruce) R.M.Schust.). Cayo Distr., Blue Hole Reserv. 100-200m alt. Lowland rainforest, epiphyllous. Leg. J.Eggers & H.Timm 1996, det. J.Eggers (BEZ 3/16 c.per.+andr.). Distribution: Widespread in the Neotropics from Florida to Argentina; 1995 reported by Pócs for Africa (Comores).

Lepidolejeunea cf. *grossepapulosa* (Steph.) Piippo.

Orange Walk Distr., Rio Bravo Reserv. Lowland rainforest; epiphyllous. Leg. J.Eggers & H.Timm 1996 (BEZ 4/14). Distribution: Guadeloupe, Colombia.

Leptolejeunea obfusca (Spruce) Steph.

Cayo Distr., Mountain Pine Ridge, Cave Rio Frio. ca. 600 m alt. Rainforest along small river; epiphyllous. Leg. J.Eggers & H.Timm 1996, det. Eggers (BEZ 2/44). Distribution: Mexico, Venezuela, Guyana, Surinam, Brazil.

Pycnolejeunea macroloba (Nees & Mont.) Schiffn.

St Ann Creek Distr., Cockscombe Reserv. Lowland forest along small river. Epiphyllous, but apparently an epiphyte who was fallen down from the canopy. Leg. J.Eggers & H.Timm 1996, det. Eggers (BEZ 5/28). Distribution (following He 1999): Costa Rica, Panama, Colombia, Venezuela, Brazil, the Guianas.

Congo

Radula flaccida Lindenb. & Gottsche

CONGO: Conkouati Reserve. 13°30'E, 4°30'S. Epiphyllous together with *Leptolejeunea* epiphylla (Mitten) Steph. in the understorey of swamp forest. Leg.: Pamela Köster 24 February 2000, VIT 26731. Det.: Marta Infante March 2004. With male branches and gemmae. Very common epiphyllous throughout the African rainforests.

Costa Rica

Colura greig-smithii Ast.

Prov. Limon, Guapiles, Territory of the „Earth University“. ca. 50m alt. Secondary forest along river; epiphyllous. Leg. H. & J.Eggers 2003 (CR 14/10). Not listed by Morales (1991), but by Jovet-Ast in the supplement of her *Colura* revision (1954), where she mentioned a find from Costa Rica without locality, which was reported by Herzog. Distribution: In the neotropics from Brazil, Colombia, the Guianas, Trinidad, Mexico; Onraedt (1979) found it in Sri Lanka; the author keeps an unpublished record from Borneo (Sarawak) which probably belongs to this species.

Colura rhynchophora Ast.

Prov. Puntarenas, Cordillera de Tilaran, Refugio Monteverde, Sendero Brillante. ca. 1600m alt. Cloud forest, epiphytic on tree trunk. Leg. J.Eggers 1985 (CR 5/346). Distribution: Guadeloupe, Dominica, Martinique, Surinam.

Dominica (Lesser Antilles)

Anoplolejeunea conferta (Meissn.) A.Evans. Morne Anglais, 1000-1100m alt., rainforest; epiphyllous. Leg. S.Frenzel 1987, det. J.Eggers (Herbar Eggers DOM 3/128; dupl. G.Schwab). Widespread in the Neotropics southward to northern Argentina (Reiner-Drehwald 1993); mentioned for Guadeloupe by Jovet-Ast (1948), but apparently unknown for Dominica.

Lejeunea caespitosa Lindenb.

Middleham Trail near Middleham Waterfall, 650 m alt., rainforest; epiphyllous on palm leaf. Leg. J.Eggers 1987 (DOM 6/27). Distribution: Africa;

in the neotropics recorded from Brazil, Peru, Costa Rica, Puerto Rico, Cuba and USA (Florida). Schuster (1980) regard this species as a „weedy“ neophyte in America.

Guatemala

Aphanolejeunea sicaefolia (Gottsche) A.Evans. Sierra Yalijux bei Cobán. 2300 m alt. Elfin forest; epiphyllous. Leg. M.Lenz 1992, det. J.Eggers (GUA 1/8 c.per.). Distribution: Widespread in the Neotropics from Florida and Mexico to Ecuador and on Caribbean Islands.

Jubula pennsylvanica (Steph.) A.Evans ssp. *bogotensis* (Steph.) Guerke. Sierra Yalijux bei Cobán. 2300 m alt. Elfin forest; epiphyllous but apparently epiphytic and fallen down from branches. Leg. M.Lenz 1992, det. J.Eggers (GUA 1/4 c.andr.). Distribution: Mexico, Costa Rica, Colombia, Cuba, Jamaica, Haiti.

Rectolejeunea berteriana (Gottsche) A.Evans. Prov. Petén, Tikal, near the Maya ruins. ca. 150 m alt. Lowland rainforest; epiphyllous. Leg. J.Eggers & H.Timm 1996, det. Eggers (GUA 2/20). Distribution: Florida, Mexico, Belize, Costa Rica, Panama, Cuba, Puerto Rico, Guadeloupe, Trinidad, the Guianas, Brazil, Colombia, Ecuador.

India

Cololejeunea trichomanis (Gottsche) Steph. (syn. *Cololejeunea goebelii* (Gottsche ex Schiffn.) Schiffn.).

Assam, Pambaria Forest near Kaziranga National Park. Lowland rainforest; epiphyllous. Leg. M.Lenz 1992, det. J.Eggers, conf. R.Grolle. (Herb. Eggers IN 3/3; dupl. R.Grolle, J.-P.Frahm, T.Pocs, G.Schwab). Distribution: Widespread in SE-Asia.

Martinique

Aphanolejeunea cingens Herzog. Gorge de la Falaise. Ca. 400 m alt. Rainforest; epiphyllous. Leg. J.Eggers 1987 (MAR 3/21 c.per.). Distribution: Ecuador, Costa Rica, Dominica.

Aphanolejeunea longifolia Ast.

Gorge de la Falaise. Ca. 400 m alt. Rainforest; epiphyllous. Leg. J.Eggers 1987 (MAR 3/19 c.per.+andr.). Distribution: Guadeloupe, Dominica, El Salvador, Costa Rica.

Aphanolejeunea truncatifolia Horik.

Gorge de la Falaise. Ca. 400 m alt. Rainforest; epiphyllous. Leg. J.Eggers 1987 (MAR 3/20 c.andr.). Distribution: Pantropical.

Lejeunea filipes Spruce (syn. *Lejeunea autoica* R.M.Schust.).

Riviere Blanche Waterfall. 450 m alt. Rainforest; epiphyllous. Leg. J.Eggers 1987 (MAR 1/21); Gorge de la Falaise. Ca. 400 m alt. Rainforest; epiphyllous. Leg. J.Eggers 1987 (MAR 3/17 c.per.+andr.). Distribution: West and East Africa; widespread in the Americas from USA to Argentina, Dominica, Trinidad.

Lejeunea flava (Sw.) Nees

Riviere Blanche Waterfall. 450 m alt. Rainforest; epiphyllous. Leg. J.Eggers 1987 (MAR 1/9); Gorge de la Falaise. Ca. 400 m alt. Rainforest; epiphyllous. Leg. J.Eggers 1987 (MAR 3/30). Distribution: Pantropical.

Mexico

Aphanolejeunea cingens Herzog.

Edo. de Chiapas, Tapachula, Benito Juarez, Cerro Tres Picos, 1300-1500m alt. Rainforest; epiphyllous. Leg. J.Eggers & J.-P.Frahm 1979, det. Eggers (Herbar Eggers MX 34/41 and 34/63). Distribution: Ecuador, Costa Rica, Dominica.

Colura tortifolia (Mont.) Steph.

Edo de Chiapas, Tapachula, Benito Juarez, Cerro Tres Picos, 1300-1500m alt. Rainforest; epiphyllous. Leg. J.Eggers & J.-P.Frahm 1979, det. Eggers (MX 34/40). Distribution: Widespread in the Neotropics from Belize and the Caribbean Islands to Peru and Brazil.

Lejeunea (Subgen. *Crossotolejeunea*) *crisatella* Gottsche ex Steph.

Edo. de Chiapas, Tapachula, Benito Juarez, Cerro Tres Picos 1300-1500m alt. Rainforest; epiphyllous. Leg. J.Eggers & J.-P.Frahm 1979, det. Eggers (MX 34/35 c.per.+andr.). Distribution: Costa Rica, Venezuela.

São Tomé e Príncipe*Frullania obscurifolia* Mitten

São Tomé, Santa Ana, 0°15'N, 6°45'E, 10 m. Corticolous on the base of *Cocos nucifera* by the basalt cliffs at Boca del Infierno, leg. Patxi Heras & Marta Infante =ct. 31, 2000, VIT 25427 (1356/00). Sterile, with gemmae.

Widespread in the sub-Saharan Africa. It is a new record for São Tomé according to Wigginton (2002)

Tobago*Aphanolejeunea angustissima* Steph.

Main Ridge, Palaluvier Road N of Roxborough, Nature Trail. ca.400m alt. Rainforest along small river; epiphyllous. Leg. J.Eggers & H.Timm 1993 (TOB 1/8). Distribution: Mexico, Guatemala, Belize, Honduras, El Salvador, Costa Rica, Jamaica, Guadeloupe, Dominica, Guayana, Colombia, Ecuador, Galapagos Isl.

Aphanolejeunea costaricensis A.Bernecker.

Main Ridge, Palaluvier Road N of Roxborough, Nature Trail. ca.400m alt. Rainforest along small river; epiphyllous. Leg. J.Eggers & H.Timm 1993 (TOB 1/19). Distribution: Costa Rica, Dominica (Schäfer-Verwimp 1999).

Cololejeunea guadelupensis Tixier.

Main Ridge, Palaluvier Road N of Roxborough, Nature Trail. ca.400m alt. Rainforest along small river; epiphyllous on fern leaf. Leg. J.Eggers & H.Timm 1993 (TOB 1/25). Distribution: Guadeloupe, Costa Rica, Belize.

Colura verdoornii Herzog & Ast.

Main Ridge, Palaluvier Road N of Roxborough, Nature Trail. ca.400m alt. Rainforest along small river; epiphyllous on fern leaf. Leg. J.Eggers & H.Timm 1993 (TOB 1/23). Distribution: Costa Rica, Belize, SE-Asia.

Cyclolejeunea convexistipa (Lehm. & Lindenb.)

A.Evans.

Main Ridge, Palaluvier Road N of Roxborough, Nature Trail. ca.400m alt. Rainforest along small river; epiphyllous on fern leaf. Leg. J.Eggers &

H.Timm 1993 (TOB 1/13). Distribution: Widespread in the Neotropis from Peru to Colombia, the Guyanas, Brazil, Venezuela, Panama to Mexico, Greater and Lesser Antilles.

Leptolejeunea radicata (Nees ex Mont.) Grolle.

Main Ridge, Palaluvier Road N of Roxborough, Nature Trail. ca.400m alt. Rainforest along small river; epiphyllous. Leg. J.Eggers & H.Timm 1993 (TOB 1/20). Distribution: Belize, Costa Rica, Panama, Colombia, Guyana, Jamaica, Dominica, Martinique.

Trinidad*Aphanolejeunea angustissima* Steph.

Northern Ridge, Blanchisseuse Road, Asa Wright Nature Centre. 300m alt. Rainforest above small river; epiphyllous. Leg. J.Eggers & H.Timm 1993 (TRIN 1/10). Distribution: Mexico, Guatemala, Belize, Honduras, El Salvador, Costa Rica, Jamaica, Guadeloupe, Dominica, Guayana, Colombia, Ecuador, Galapagos Isl.

Aphanolejeunea camillii (Lehm.) R.M.Schust.

Northern Ridge, Blanchisseuse Road, Asa Wright Nature Centre. 300m alt. Rainforest above small river; epiphyllous. Leg. J.Eggers & H.Timm 1993 (TRIN 1/15 c.per.). Distribution: Mexico, Guatemala, Cuba, Jamaica, Dominica, Brazil, Argentina.

Cololejeunea fefeana Tixier.

Northern Ridge, Blanchisseuse Road, Asa Wright Nature Centre. 300m alt. Rainforest above small river; epiphyllous. Leg. J.Eggers & H.Timm 1993 (TRIN 1/14 c.andr.+gemm.). Distribution: Guadeloupe, Costa Rica.

Harpalejeunea oxphylla (Nees & Mont.) Steph.

Northern Ridge, Blanchisseuse Road, Asa Wright Nature Centre. 300m alt. Rainforest above small river; epiphyllous. Leg. J.Eggers & H.Timm 1993 (TRIN 1/12). Distribution: The Guianas, Venezuela, Brazil, Bolivia, Peru, Costa Rica, Honduras.

Leptolejeunea radicata (Nees ex Mont.) Grolle.

Northern Ridge, Blanchisseuse Road, Asa Wright Nature Centre. 300m alt. Rainforest above small river; epiphyllous. Leg. J.Eggers & H.Timm 1993

(TRIN 1/26). Distribution: Belize, Costa Rica, Panama, Colombia, Guyana, Jamaica, Dominica, Martinique.

References

- He, X.-L. (1999).** A taxonomic monograph of the genus *Pycnolejeunea* (Lejeuneaceae, Hepaticae). *Acta Botanica Fennica* 163: 1-77.
- Jovet-Ast, S. 1948.** Hépatiques des Antilles françaises recoltées par P. et V. Allorge en 1936. II. *Revue bryologique et lichénologique* 17: 24-34.
- Jovet-Ast, S. 1954.** Le genre *Colura*. Hépatiques. Lejeuneaceae, Diplasiae. Supplément. *Revue bryologique et lichénologique* 23: 1-22.
- Morales Z., M. I. 1991.** Las Hepaticas comunicadas para Costa Rica. *Tropical Bryology* 4: 25-58.
- Onraedt, M. 1979.** Bryophytes de Sri Lanka (Ceylan) IV. Le genre *Colura*. *Revue bryologique et lichénologique* 45: 443-452.
- Pócs, T. 1995.** East African bryophytes, XIV. Hepaticae from the Indian Ocean islands. *Fragmenta floristica et geobotanica* 40 (1): 251-277.
- Reiner-Drehwald, M.E. 1993.** Las Lejeuneaceae (Hepaticae) de Misiones, Argentina. I. Las especies holostipas. *Tropical Bryology* 7: 13-45.
- Schäfer-Verwimp, A. 1999.** Some additions to the bryophyte flora of Dominica, West Indies. *Hausknechtia Beiheft* 9: 317-331.
- Schuster, R.M. 1980.** The Hepaticae and Anthocerotae of North America. Vol. IV. New York.
- Wiggington, M. 2002.** Checklist and distribution of the liverworts and hornworts of sub-Saharan Africa, including the East African islands. *Tropical Bryology Research Reports* No. 3.

