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TWO NEW SPECIES OF *RICCIA* L. (HEPATICAE : MARCHANTIALES) FROM THE WESTERN GHATS OF TAMIL NADU

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ABSTRACT

Riccia poihaiana and *R. velimalaiana*, two new species, allied to *R. billardieri* Mont. & Nees and *R. grollei* Udar respectively, from the southern Western Ghats of Tamil Nadu, are described and illustrated.

INTRODUCTION

The southern Western Ghats in the districts of Kanyakumari and Tirunelveli, Tamil Nadu are being explored by the authors for a bryoflora. Materials of two species of *Riccia* L., collected in the region which could not be identified with any of the known Indian species, are described here as new.

Riccia poihaiana A.E.D. Daniels & P. Daniel, sp. nov. (Fig.1).

R. billardieri Mont. & Nees affinis, sed thallis per totam longitudinem dorsaliter sulcatis, transectione thalli latitudine altitudine duplo vel triplo magniora; archegoniis et sprogoniis uniseriatis et sporis ateris sine membranaceo-tegentibus differt. *Typus* : India, Tamil Nadu, Kanyakumari Distr., W. Ghats, 3 km from Aramboli towards west, eastern side of Poihai reservoir, c. 1 km from the dam, 150 m, 31.10.2001, *P. Daniel* 01 (Holotype CAL; Isotype MH); 5.11.2002, *P. Daniel* 06 (Paratypes MH, SCCN*).

Plants monoecious, caespitose. Thalli 4-10 × 2-3 mm, 1-2 times dichotomously branched, glaucous green or green; segments linear to obovate; dorsal groove prominent

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throughout the length of thallus, deeper towards apex. Ventral scales prominent, c. 0.6 × 0.3 mm, extending beyond thallus margin, purple, sometimes partly hyaline, semilunar; rhizoides mostly tuberculate, rarely smooth. Thallus 2-3 times as broad as high in cross section, convex ventrally; assimilatory tissue compact; air spaces narrow; epidermal cells colourless, hemispherical, c. 30 × 25 μm. Antheridia in 2-3 rows, papillae conspicuous, projecting above thallus surface, c. 75 × 53 μm, hyaline. Archegonia along dorsal groove; neck embedded; sporogonia in a single row along dorsal groove, dehiscing by disorganisation of dorsal tissue. Spores spherical to oval, 135-150 × 120-150 μm, reticulate with 4-7 reticulations on outer face, trigonous, with an inconspicuous triradiate mark, black, opaque with truncate to finger-like projections; finger-like projections c. 10 μm, sometimes bifid.

Riccia poihaiana is allied to *R. billardieri* Mont. & Nees but differs from it as shown in Table I.

Table I

	Riccia billardieri Mont. & Nees	*Riccia poihaiana* sp. nov.
1.	Dorsal groove in thallus disappearing posteriorly	present throughout the length
2.	Thallus 4-6 times as broad as high in cross section	2-3 times as broad as high
3.	Archegonia and sporogonia in 1-3 rows	along dorsal groove
4.	Spores reddish-brown	black
5.	Delicate undulating membrane covering wall projections present	membrane absent

Habitat : Scrub jungles, on wet sandy soil under boulders, in patches of c. 6 cm across, with *Riccia grollei* Udar, *R. billardieri* Mont. & Nees etc. and *Fimbristylis* sp. Seems to occur during the Northeast monsoon (Oct.-Dec.) when it rains continuously for a couple of weeks.

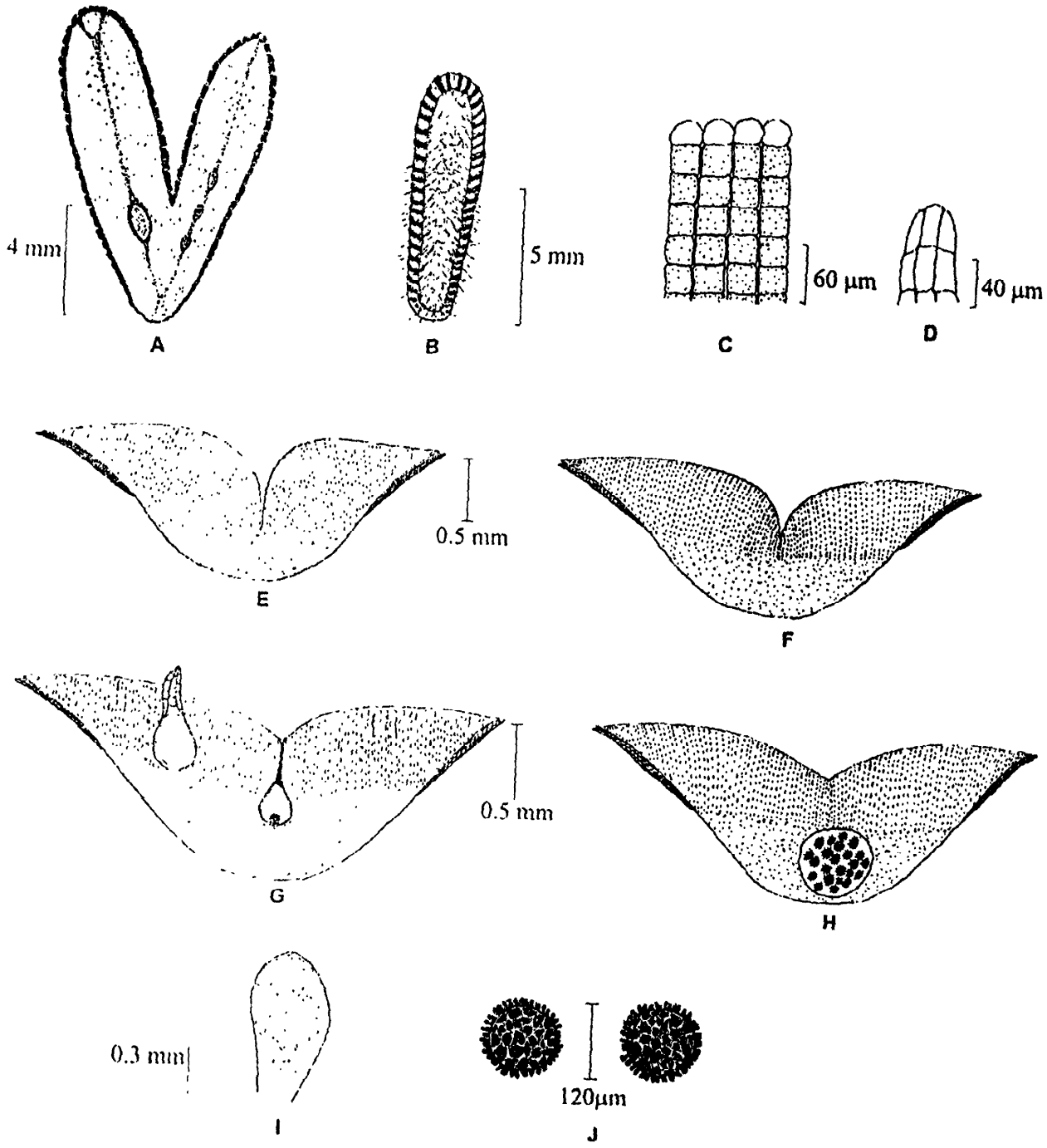


Fig. 1 (A-J). *Riccia poihaiana* A.E.D. Daniels & P. Daniel, sp. nov.

A. Thallus dorsal view, B. Thallus ventral view, C. Assimilatory filaments with epidermal cells, D. Antheridal papilla, E. Thallus C.S. near tip, F. behind tip, G. in middle showing sex organs, H. near rear end showing sporogonium with spores, I. Ventral scale (*P. Daniel* 01) J. Spores (*P. Daniel* 06).

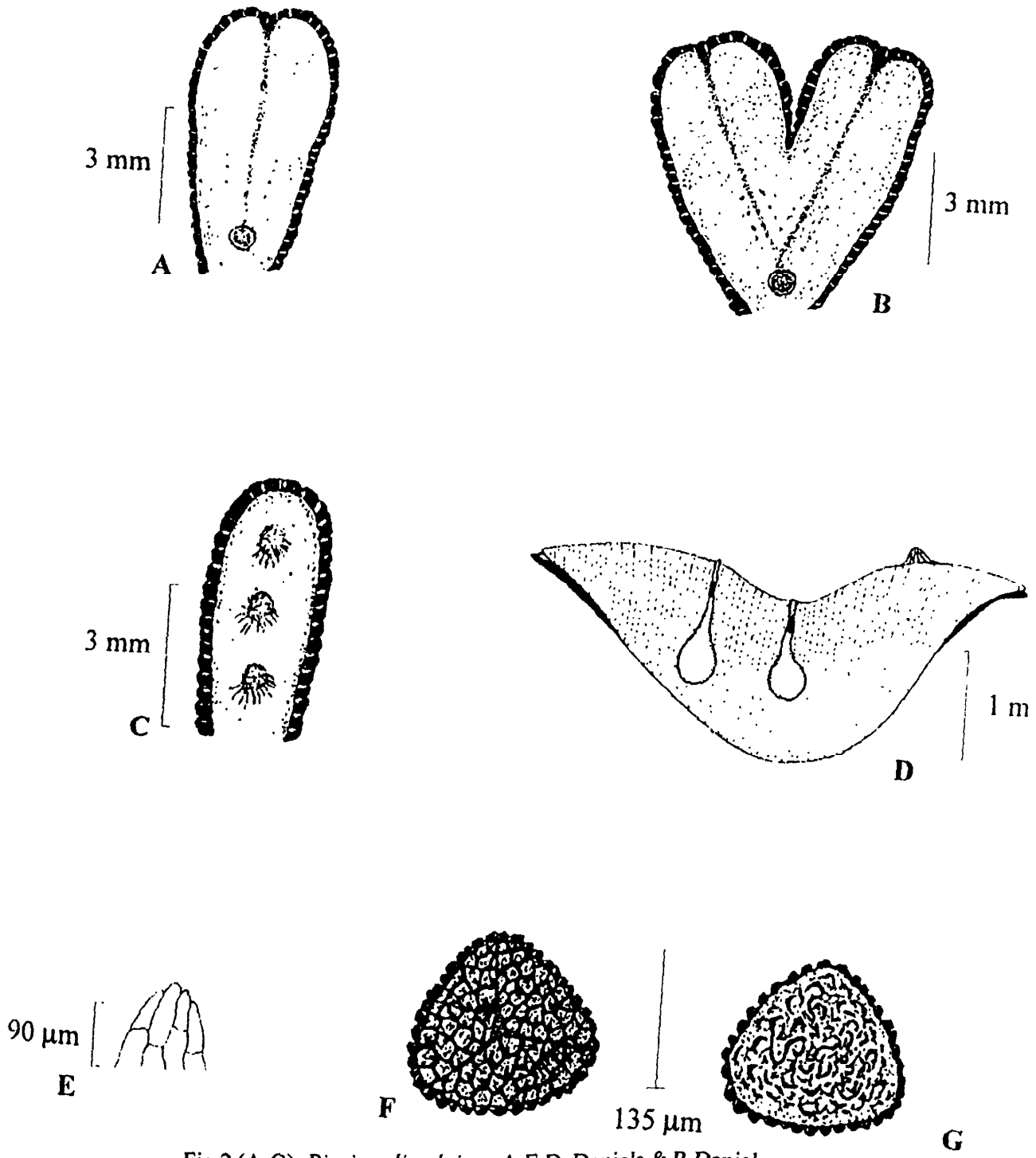


Fig.2 (A-G). *Riccia velimalaiana* A.E.D. Daniels & P. Daniel, sp. nov.

A & B. Thallus dorsal view, C. Thallus ventral view,
D. Thallus C.S. showing antheridial papilla & archegonia, E. Antheridial papilla,
F. Spore inner face, G. Spore outer face.

Etymology : Named after the type locality.

Riccia velimalaiana A.E.D. Daniels & P. Daniel, sp. nov. (Fig.2).

R. grollei Udar affinis, sed thallis splendide viridibus; segments obovatis vel truncatis; sporophyto in quoque thallo singulari; sporis magnioribus. 90 × 135 μm et alis 8-10 μm latis differt. *Typus* : India, Tamil Nadu, Kanyakumari Distr., W. Ghats, Velimalai, 450 m, *A.E.D. Daniels* 921 (Holotype CAL; Isotypes MH, SCCN); 19.8.2000, *A.E.D. Daniels* 976, 977, 988 (Paratypes MH, SCCN).

Plants monoecious. Thalli c. 5 × 2 mm, in overlapping patches or rosettes, simple or once dichotomously branched, bright green; segments linear, obovate to truncate at apex; dorsal groove prominent, deep near apex, becoming shallow and concave at posterior end; epidermal cells subspherical to mamillose; air chambers columnar in one vertical series; assimilatory filaments in cells of middorsal line sometimes with tuberculate thickenings on walls; scales prominent, large, deep purple, extending beyond thallus margin. Rhizoides usually tuberculate, rarely smooth. Sex organs in 3 rows. Antheridial papillae conspicuous, c. 90 μm × 60 μm, hayline. Archegonia in more than one row with one along groove; neck prominent, turning purple in middle after fertilization. Sporogonium one per thallus, embedded but prominent on dorsal surface, dehiscing by disorganisation of overlying tissue; spores roughly tetrahedral, c. 90 × 135 μm, dark brown to black and opaque when mature with a prominent triradiate mark, winged; wing 8-10 μm wide.

Riccia velimalaiana is allied to *R. grollei* Udar but differs from it as shown in Table II.

Table II

	Riccia grollei Udar	*Riccia velimalaiana* sp. nov.
1.	Thallus bluish green	bright green
2.	Segments ovate-linear, rounded or acute at apex	linear, obovate or truncate at apex
3.	Sporophytes uniseriate	one per thallus
4.	Spores c. 80 × 110 μm	90 × 135 μm
5.	Wing to 6.6. μm wide	8-10 μm wide

Habitat : Wet exposed rocks, with *Exormotheca ceylonensis* Meijer and *Riccia sorocarpa* Bisch.

Etymology : Named after the type locality.

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