

A new species of *Spruceanthus* Verd. (Hepaticae: Lejeuneaceae) from the Western Ghats of India

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(Received 25 January 2010, accepted 7 February, 2010)

Abstract – *Spruceanthus wiggintonii*, a new species allied to *S. thozetianus* and from the Western Ghats in Peninsular India, is described and illustrated.

Hepaticae / *Spruceanthus wiggintonii* / India / Western Ghats

The Western Ghats in Peninsular India, which together with Sri Lanka has been identified as a global 'hotspot' for bryophytes, has a wide range of habitats some of which support a luxuriant growth of bryophytes. Though the phanerogamic flora of the region with a high degree of endemism has been well studied, the southern Western Ghats still remains a *terra incognita* for bryophytes. Hence, investigations on the bryoflora were initiated in the Tirunelveli-Travancore hills, a part of the southern Western Ghats, about a decade ago.

Parihar *et al.* (1994) included only 2 species in the genus *Spruceanthus* Verd. *viz.*, *S. polymorphus* (Sande Lac.) Verd. and *S. semirepandus* (Nees) Verd. in their checklist of the Indian Hepatics and Anthocerotales. Daniels & Daniel (2009) added the Australian *S. thozetianus* (Gottsche *et* F. Muell.) B. Thiers *et* Gradst. to the Indian hepatic flora. In this paper *Spruceanthus wiggintonii*, a new species, is described and illustrated.

Spruceanthus wiggintonii A.E.D. Daniels, K.C. Kariyappa *et* P. Daniel, *sp. nov.*

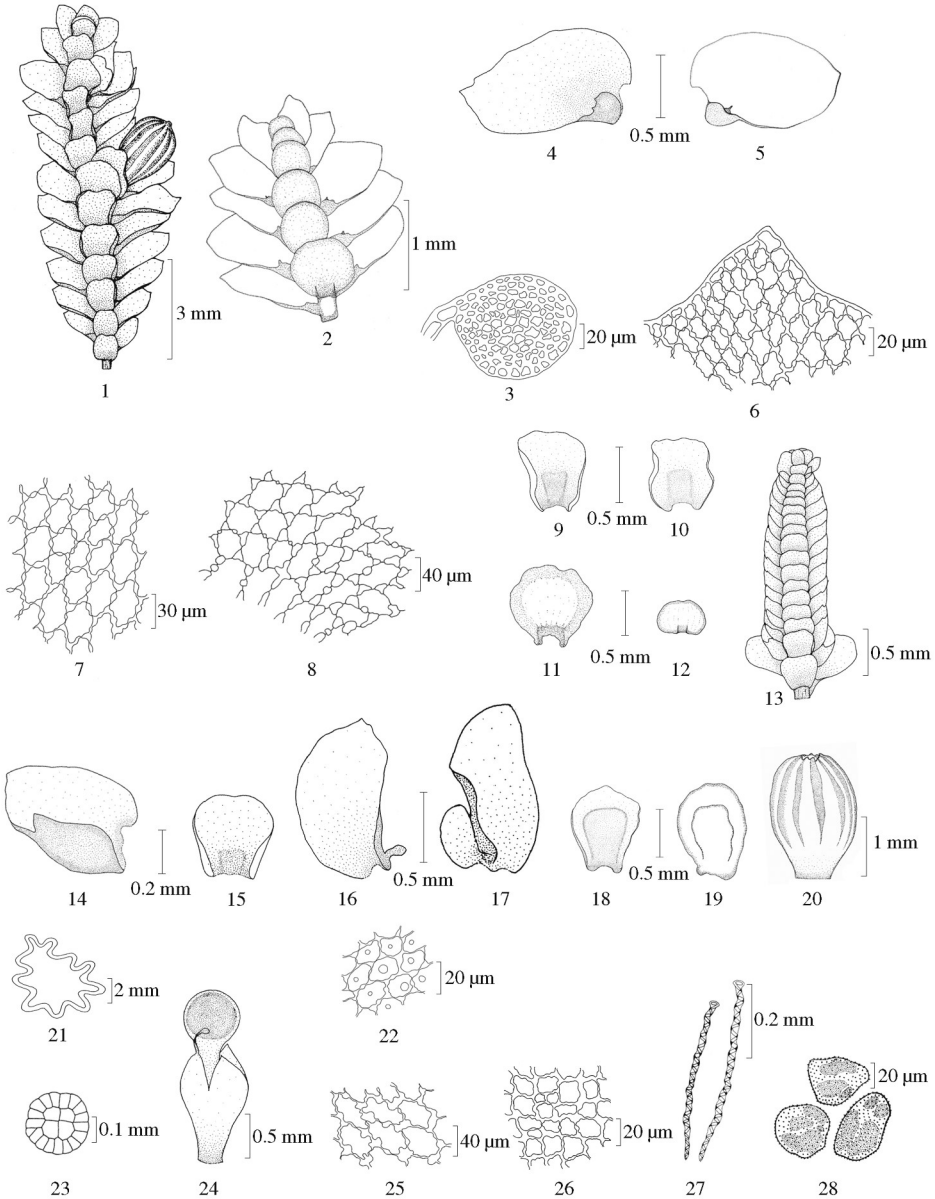
Figs 1-28

S. thozetianus arte affinis, sed, perianthiis 10-plicatis; sporis 40-50 μm, grossis differt.

Typus: India, Tamil Nadu, Kanyakumari Dist., W. Ghats, Muthukuzhivayal, ca 1250 m, 26.1.2001, *Daniels* 1433 p.p. (Holotype: MH; Isotype: SCCN*); **Paratypes:** Kerala, Kollam Dist., W. Ghats, Shankili Forest, Pandimotta, ca 800 m, 02.6.2009, *Kariyappa* 108, 109, 110, 111 (SING; SCCN²).

Plants monoicous, 4-6 cm long, prostrate or pendant, olive green, dark brown when dry. **Stems** with branching of *Lejeunea*-type, 0.25-0.3 × 0.21-0.22 mm in

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2 SCCN: Herbarium of Scott Christian College, Nagercoil.



Figs 1-28. *Spruceanthus wiggintonii* A.E.D. Daniels, K.C. Kariyappa *et* P. Daniel. 1-2. Plant. 3. Stem cross section. 4-5. Leaves. 6. Leaf apical cells. 7. Leaf median cells. 8. Leaf basal cells. 9-12. Underleaves. 13. Male inflorescence. 14. Male bract. 15. Male bracteole. 16-17. Female bracts. 18-19. Female bracteoles. 20. Perianth. 21. Perianth cross section. 22. Perianth cells. 23. Seta cross section. 24. Capsule. 25. Capsule outer wall cells. 26. Capsule inner wall cells. 27. Elaters. 28. Spores (2, 5, 11, 12, 19, 20, 22 drawn from *Daniels 1433*; rest from *Kariyappa 108*).

cross section, 12-20-celled across; cells thick-walled, quadrate-hexagonal; cortical ones $6-35 \times 6-15 \mu\text{m}$; medullary ones $8-40 \times 8-20 \mu\text{m}$. **Leaves** imbricate, wide-spreading, $1.2-2.1 \times 0.9-1 \text{ mm}$, oblong-ovate, asymmetric, entire at margin, acute to apiculate at apex; cells thick-walled with trigones and intermediate nodular thickenings; marginal leaf cells $8-20 \times 6-16 \mu\text{m}$; apical ones $12-20 \times 8-18 \mu\text{m}$; median ones $20-30 \times 15-20 \mu\text{m}$; basal ones $30-40 \times 15-24 \mu\text{m}$, with bulging trigones; oil bodies numerous per cell, $1-2 \times \text{ca } 1 \mu\text{m}$, ovoid to globose, homogeneous; lobules $0.25-0.3 \times 0.2-0.24 \text{ mm}$, swollen, curved at keel, free at margin; apex continuous with leaf ventral margin, truncate, 1- or 2-toothed. **Underleaves** transversely inserted, $0.5-0.8 \times 0.48-0.78 \text{ mm}$, 3-4 times as thick as stem, smaller at base and larger towards female inflorescences, oblong, orbicular to reniform, entire at margin, rarely slightly emarginate. **Sporophytes** borne on main stems or branches, subtended by subfloral innovations; male bracts $0.48-0.64 \times 0.4-0.48 \text{ mm}$, oblong-ovate; lobules $0.4-0.52 \times 0.25-0.3 \text{ mm}$, oblong-ovate, acute at apex; bracteoles $0.3-0.35 \times 0.3-0.32$ oblong-cuneate; female bracts $1.05-1.2 \times 0.45-0.6 \text{ mm}$, oblong-lanceolate, asymmetric, concave, entire, incurved with an appendage at ventral margin; appendage visible on dorsal side of plant; bracteoles $0.8-1.1 \times 0.64-0.8 \text{ mm}$, obovate, concave, entire at margin. **Perianth** emergent, $1.6-1.8 \times 0.85-0.9 \text{ mm}$, obovate to oblong-ovate, truncate, beaked at apex when young, 10-plicate; cells $20-44 \times 16-22 \mu\text{m}$, quadrate, dotted with oil bodies. **Setae** ca $1.12 \times 0.25 \text{ mm}$, with 17 or 18 outer cells enclosing 4 inner ones. **Capsules** ca $0.55 \times 0.6 \text{ mm}$, ovoid; outer wall cells $20-60 \times 17-56 \mu\text{m}$, quadrate with occasional bulging thickenings on walls; those of inner wall $20-40 \times 16-37 \mu\text{m}$, quadrate. **Spores** $40-50 \times 35-40 \mu\text{m}$, variable, mostly globose to ovoid, coarse, brown, black when dry. **Elaters** $400-420 \times 12-16 \mu\text{m}$.

Spruceanthus wiggintonii is closely allied to *S. thozetianus* but the latter differs from it in the female bracteoles being divided at apex and smaller, $16-20 \mu\text{m}$ spores with spinose sporoderm (Daniels & Daniel, 2009).

Habitat: Corticolous on *Garcinia travancorica* Bedd. (*Clusiaceae*), a medium-sized tree in evergreen forests which is endangered and endemic to the study area.

Etymology: This species is named in honour of Mr. Martin J. Wigginton, a distinguished bryologist who has significantly contributed to the hepaticology of Africa and has been a constant source of very generous help with literature and his expertise, and encouragement to the senior author.

Acknowledgements. Part of the work was done in a project under the AICOPTAX funded by the Ministry of Environment & Forests, Government of India, New Delhi, sanctioned to the senior author. KCK is grateful to the MoEF, for a junior research fellowship. The authors thank the Tamil Nadu and Kerala State Forest Departments, for permission to explore the forests in Kanyakumari and Kollam Districts respectively, Mr. M.J. Wigginton, Peterborough, England, for confirming the distinctiveness of the material and Dr. V.J. Nair, Coordinator, AICOPTAX, Botanical Survey of India, Coimbatore, for the Latin diagnosis. AEDD and KCK thank Dr. S.C. Rose, Principal, Scott Christian College (Autonomous), for encouragement.

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