

## *Cololejeunea clavatopapillata* Steph. — New to Asia

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**Abstract:** *Cololejeunea clavatopapillata* Steph. a small, interesting leafy liverwort was collected as corticolous population during an expedition trip to Nilgiri hills, Western Ghats (Tamil Nadu) which is not only new to India but it is being reported for the first time from Asia. The Indian population of the taxa has been described and illustrated. With this report the genus *Cololejeunea*, subgenus *Aphanolejeunea* is now represented by four species viz. *C. clavatopapillata* Steph., *C. diaphana* A. Evans, *C. karnatakensis* Asthana & Srivastava and *C. nilgiriensis* Asthana & Srivastava in India raising the total number of *Cololejeunea* species to thirty nine.

**Keywords:** Asia, India, *Cololejeunea*, Western Ghats, Corticolous, Lejeuneaceae.

### Introduction

*Cololejeunea* (Spruce) Schiffn. is one of the most delicate genera among the leafy liverworts, especially in the members of Lejeuneaceae. They have evolved an ability to grow and survive on leaf surface as epiphyllous population on angiospermic & fern leaves. Pócs (1996) reported approximately 389 epiphyllous species all over the world. The second habitat preference of the genus is the bark surface of trees for corticolous population. They occur very rarely as terricolous or rupicolous populations (Asthana & Srivastava 2003).

In India, the genus is represented so far by 38 taxa belonging to 6 subgenera viz., *Cololejeunea* subgenus *Aphanolejeunea* (Evans) Benedix, subgenus *Cholorolejeunea* Benedix, subgenus *Cololejeunea* Spruce, subgenus *Leptocolea* (Spruce) Schiffn., subgenus *Pedinolejeunea* (Benedix) Mizut. and subgenus *Taeniolejeunea* (Zwikel) Benedix (Asthana & Srivastava 2003, Asthana & Shukla 2010, Asthana & Sahu 2011). The subgenus *Aphanolejeunea* is represented by three species in India viz. *C. karnatakensis* Asthana & Srivastava, *C. nilgiriensis* Asthana & Srivastava and *C. truncatifolia* (Horik.) Mizutani (Asthana & Srivastava 2003). Among them *C. truncatifolia* (Horik.) Mizutani has been recently synonymized under *C. diaphana* A. Evans (See Pócs in Gradstein & Ilkiu-Borges 2009). All earlier reported species under subgenus *Aphanolejeunea* are foliicolous except *C. nilgiriensis* which is corticolous. During a collecting trip to Western Ghats (hot spot of biodiversity in India), few attention-grabbing

corticolous plants of *Cololejeunea* (subgenus *Aphanolejeunea*) were collected. On critical examination interesting results came out and the plants were identified as *Cololejeunea clavatopapillata* Steph. [Syn. *Aphanolejeunea tuberculata* (A. Evans) R.M. Schust.]. This constitutes a new report not only for the country but for Asia also as this species was known from tropical America and Africa only so far (Schuster 1980, Gradstein *et al.* 1983, Thiers 1988, Pócs 1996, Equihua & Pócs 1999). Consequently the known number of *Cololejeunea* species in India at present has been raised to 39 (Asthana & Srivastava 2003, Singh *et al.* 2006, Dey & Singh 2008, Dey *et al.* 2008, Daniel & Daniel 2009, Asthana & Shukla 2010, Sanjappa & Singh 2010, Asthana & Sahu 2011, Dey & Singh 2011).

### Taxonomic Description

*Cololejeunea clavatopapillata* Steph., Hedwigia 34: 246, 1895 (Figures 1–25)

*Physocolea clavatopapillata* (Steph.) Steph., Spec. Hepat. 5: 875, 1916. — *Aphanolejeunea clavatopapillata* (Steph.) M.E. Reiner, Trop. Bryol. 10: 35, 1995. Type: Brazil, Ule 371 (Holotype: G n.v.)

*Cololejeunea tuberculata* A. Evans, Bryologist 18:84, 1915. — *Aphanolejeunea tuberculata* (A. Evans) R.M. Schust., Hep. Anthoc. N. Amer. 4: 1290, 1980. *Cololejeunea crystallina* Herzog, Feddes Rep. Spec. Nov. 55(1): 16, 1952.