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STUDIES IN EPIPHYLLOUS LIVERWORTS OF INDIA - ITS PRESENT POSITION

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ABSTRACT

The paper presents state-of-the-art report of the studies in epiphyllous liverworts of India. Such taxa are confined to Eastern Himalayas, South India and Andaman & Nicobar Islands only. Two other major bryogeographical units of Indian Bryoflora, namely Western Himalayas and Central Indian Zone are apparently devoid of this interesting group of plants. On the basis of bryological literature and present study it is concluded that 39 species, belonging to 14 genera, occur in India. The represented families are Lejeuneaceae (*sensu lato*), Radulaceae and Metzgeriaceae. *Colura acutifolia* Ast is a new record for the country. Distributional details of all the species of epiphyllous liverworts occurring in India have been provided.

INTRODUCTION

Very little is known about the epiphyllous bryophytes in Indian Bryology. Only a few contributions have been made as regards Hepaticae while Musci have been completely left out.

Pande & Misra (1943) commented that "the epiphyllous hepatics of India are very imperfectly known" Surprisingly the situation still remains the same even after the lapse of 60 long years. The only works which may be mentioned here are Pande & Misra (1943); Kachroo (1951); Pande, Srivastava & Ahmad (1957); Lal (1977, 1979, 1982, 1985); Udar & Kumar (1984); Udar & Awasthi (1985); Joshi & al. (1992); Asthana (2001) and Joshi (2001). Mizutani (1975) also included some of the Indian forms while dealing with epiphyllous Lejeuneaceae of Philippines.

Presently 39 species (belonging to 14 genera) of epiphyllous liverworts are known to

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occur in India, of which the highest number of species occur in Eastern Himalayas (23 species) followed by South India (18 species) and Andaman & Nicobar Islands (12 species). The other major bryogeographical units of Indian flora namely Western Himalayas and Central Indian Zone are apparently devoid of epiphyllous liverworts. The represented families are Lejeuneaceae, Radulaceae and Metzgeriaceae.

Colura acutifolia Ast previously known from Borneo and Sumatra is being reported as new record for India from Arunachal Pradesh, and *Radula tjibodensis* Goeb. previously known from Darjeeling, Meghalaya and Sikkim has also been recorded from Arunachal Pradesh. Special mention may be made about the *Metzgeria nilgiriensis* Udar *et* Srivastava, an endemic species, which is the only thalloid liverwort in India that grows as epiphyllous (Lal, 1979).

In the given list all the genera and species of epiphyllous taxa are arranged alphabetically alongwith their distribution data in different bryogeographical units of India.

ANNOTATED LIST OF EPIPHYLLOUS TAXA IN INDIA

Order : Jungermanniales

ACANTHOCOLEUS Schust. (Lejeuneaceae : Ptychanthoideae)

A. gilvus (Steph.) Kruijt, Bryophyt. Biblioth. 36 : 1-136. 1988.

Distrib.: Eastern Himalayas : Darjeeling, Sikkim, Khasia & Jaintia Hills; Nepal.

CAUDALEJEUNEA (Steph.) Schiffn. (Lejeuneaceae : Ptychanthoideae)

C. reniloba (Gott.) Steph., Spec. Hep. 5 : 16. 1912.

Distrib.: South India : Agumbe, Karnataka; Andaman Is.

CHEILOLEJEUNEA (Spruce) Schiffn. *emend* Mizut. (Lejeuneaceae : Lejeuneoideae)

C. ceylanica (Gott.) Schust. *et* Kachroo in Kachroo, J. Indian bot. Soc. 38 : 336. 1959.

Distrib.: South India

C. intertexta (Lindenb.) Steph., Bull. Herb. Boiss. 5 : 79. 1897.

Distrib.: Andaman & Nicobar Islands

COLOLEJEUNEA (Spruce) Schiffn. (Lejeuneaceae : Cololejeuneoideae)

C. acrotremae Schiffn., Hedwigia 39 : 199. 1900.

Distrib.: Nicobar Is.

C. appressa (Evans) Benedix, Feddes Repert. Beih. 134 : 32. 1953.

Distrib.: Eastern Himalaya

C. dentifolia Udar & G. Srivastava, J. Bryol. 12(2) : 229. 1982.

Distrib.: South India : Karnataka

C. goebelii (Gott. ex Schiffn.) Schiffn., Conspect. Hepat. Archip. Indici, 244. 1898.

Distrib.: North East : Assam - Jorhat; South India : Karnataka

C. haskarliana (Gott.) Benedix, Feddes Repert. Beih. 134 : 57. 1953.

Distrib.: South India : Karnataka, Tamil Nadu

C. kashyapii Udar & G. Srivastava, Geophytology 15(1) : 64. 1985.

Distrib.: South India : Jog Falls, Karnataka.

C. lanciloba Steph., Hedwigia 34 : 250. 1985.

Distrib.: Eastern Himalayas; Assam; South India; Nicobar Is.

C. longifolia (Mitt.) Benedix, Feddes Repert. Beih. 134 : 15. 1953.

Distrib.: Eastern Himalayas : Arunachal Pradesh, Sikkim; South India : Karnataka; Andaman Is.

C. peraffinis (Schiffn.) Schiffn., Conspect. Hepat. Archip. Indici, 245. 1898.

Distrib.: Eastern Himalayas : Darjeeling - Rimbic; South India : Mysore, Agumbe,

Gersoppa Falls.

C. pseudofloccosa (Horik.) Benedix, Feddes Repert. Beih. 134 : 36. 1953.

Distrib.: Eastern Himalayas : Sikkim, Darjeeling - Rimbic

C. siangensis Asthana & Sri., Bryophyt. Biblioth. Band 60 : 57. 2003.

Distrib.: Eastern Himalayas : Arunachal Pradesh

C. spinosa (Horik.) Hatt., Bull. Tokyo Sci. Mus. 11 : 102. 1944.

Distrib.: Eastern Himalayas : Arunachal Pradesh, Darjeeling

COLURA Dum. (Lejeuneaceae : Cololejeuneoideae)

C. acroloba (Mont.) Ast, Rev. Bryol. Lichenol. 22 : 297. 1953.

Distrib.: Andaman Is. : Port Blair

C. acutifolia Ast, Rev. Bryol. Lichenol. 22 : 281. 1953.

Distrib.: Eastern Himalayas : Arunachal Pradesh. New to India

C. ari Steph., Sepc. Hep. 5 : 936. 1916.

Distrib.: Andaman Is.: Port Blair

C. calyptrifolia (Hook.) Dum., Rec. d'Obs. Jungerm. 12. 1835.

Distrib.: Eastern Himalayas : Darjeeling - Tiger Hill

C. tenuicornis (Evans) Steph., Spec. Hep. 5 : 942. 1916.

Distrib.: Eastern Himalayas : Darjeeling - Tiger Hill

DREPANOLEJEUNEA (Spruce) Schiffn. (Lejeuneaceae : Lejeuneoideae)

D. ternatensis (Gott.) Steph., Hedwigia 28 : 169. 1889.

Distrib.: South India : Tamil Nadu - Nilgiri Hills, Palni Hills

LEJEUNEA Libert. (Lejeuneaceae : Lejeuneoideae)

L. discreta Lindenb. in Gott., Lindenb. & Nees, Syn. Hep. 361. 1845.

Distrib.: Eastern Himalayas : West Bengal; South India : Madras; Nepal

L. ulicina (Tay.) Tay. in Gott., Lindenb. & Nees, Syn. Hep. 387. 1845.

Distrib.: Eastern Himalayas : Darjeeling - Senchal Lake, Ghoom, Assam, Shillong - Cherrapunji; South India : Palni Hills; Nepal

LEPTOLEJEUNEA (Spruce) Schiffn. (Lejeuneaceae : Lejeuneoideae)

L. balansae Steph., Hedwigia 35 : 105. 1896.

Distrib.: Andaman Is.

L. epiphylla (Mitt.) Steph., Sepc. Hep. 5 : 380. 1914.

Distrib.: Nicobar Is.

L. foliicola Steph., Hedwigia 35 : 106. 1896.

Distrib.: Eastern Himalayas : Meghalaya - Khasia & Jaintia Hills

L. schiffneri (Schiffn.) Steph., Hedwigia 35 : 107. 1896.

Distrib.: Eastern Himalayas : Rimbic; South India : W. Ghats, Gersoppa Falls, Agumbe; Andaman Is.

L. subacuta Evans, Proc. Wash. Acad. Sci. 8 : 149. 1906.

Distrib.: Eastern Himalayas : Rimbic, Arunachal Pradesh, Meghalaya - Khasia & Jaintia Hills, Assam - Jorhat; South India : Tamil Nadu, Kodaikanal, Agumbe, Gersoppa Falls; Andaman Is.

MICROLEJEUNEA (Spruce) Steph. (Lejeuneaceae : Lejeuneoideae)

M. minutistipula Steph., Deutsche Ost. Afr. Exped. 1907.

Distrib.: Andaman Is.

RADULA Dum. (Radulaceae)

R. acuminata Steph., Spec. Hep. 4 : 230. 1910.

Distrib.: Eastern Himalayas : Meghalaya - Cherrapunji, Assam

R. assamica Steph., Hedwigia 23 : 151. 1884.

Distrib.: Eastern Himalayas : Arunachal Pradesh, Assam

R. javanica Gott. in Gott., Lindenb. & Nees, Syn. Hep. 257. 1845.

Distrib.: Eastern Himalayas : Khasia Hills, Assam; South India : South Canara Mt., Kudremukh

R. protensa Lindenb. in Meissner, Bot. Zeit. 6 : 462. 1848.

Distrib.: South India : W. Ghats, Agumbe, Gersoppa Falls, Jog Falls, Karnataka

R. tjibodensis Goeb., Nova Acta Acad. Caes. Leop. Carol. 60(2) : 249. 1893.

Distrib.: Eastern Himalayas : Darjeeling, Sikkim, Takdah, Meghalaya. New to Arunachal Pradesh

RECTOLEJEUNEA Evans (Lejeuneaceae : Lejeuneoideae)

R. aloba (Sande Lac.) Steph., Spec. Hep. 5 : 696. 1914.

Distrib.: South India : Gersoppa Falls

RHAPHIDOLEJEUNEA Herz. (Lejeuneaceae : Lejeuneoideae)

R. foliicola (Horik.) Chen, Feddes Repert. Beih. 136 : 58. 1955.

Distrib.: Eastern Himalayas : Rimbic

TAXILEJEUNEA (Spruce) Schiffn. (Lejeuneaceae : Lejeuneoideae)

T. tenerrima Steph., Spec. Hep. 6 : 406. 1923.

Distrib.: South India : Kudremukh

Order : Metzgeriales

METZGERIA Raddi (Metzgeriaceae)

M. nilgiriensis Udar *et* Srivastava, New Botanist 2(1) : 24-29. 1975.

Distrib.: Eastern Himalayas : Manipur; South India : Ọotacamund, Palni Hills, Kodaikanal.

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