

here for its possible location in other areas as well.

Shrubs, *ca* 1 m. Stem quadrangular, brown tomentose. Stipules  $9 \times 6$  mm, ovate, deeply segmented, tomentose, connate at base with petiole; segments 13, subsimilar, pilose, toothed at apex. Leaves  $3.5-8.0 \times 1.0-2.5$  cm, lanceolate-elliptic, subacute or acuminate, tomentose, with 3 or 4 pairs of nerves; petiole  $0.5-0.8$  cm, tomentose. Inflorescence terminal, a dichasial cyme. Flowers subsessile, violet. Calyx tube 3 mm long; segments ovate, acute, puberulous, 1-nerved. Corolla tube  $5 \times 1$  mm, glabrous, puberulous within when young; segments  $2.5 \times 1.0$  mm, lanceolate, beaked at the tip, deflexed, glabrous, pubescent in bud. Filaments 1.5 mm long, glabrous, erect; anther *ca* 1.5 mm long, dehiscing laterally. Ovary  $2.0 \times 1.5$  mm, oblong, tomentose; style with stigma 5 mm; style glabrous. Fruits dehiscing septicidally. Seeds many, black, 3-angled, embedded in the placenta.

*Specimens examined*: KERALA: Travancore, Bourdillon s.n. (acc. no. 24321); Palghat Dt., Silent Valley, Ansari 51466 (MH).

***Isachne gracilis*** C. E. Hubbard in Kew Bull. 1927: 77. 1927; Bor, Grass. Burm. Cey. India Pakist. 581. 1960. (POACEAE)

Hubbard described this plant on a collection from Mysore District, Karnataka. The other known collections are from Mahabaleshwar and other parts of Maharashtra. A recent collection from the slopy grassland

areas near the proposed hydro-electric project in Silent Valley, on critical studies turned out to be *Isachne gracilis*. Thus the known range of distribution of this very delicate grass extends to Kerala and suggests the possibility of its occurrence in other areas of the Western Ghats as well.

*Specimen examined*: KERALA: Palghat Dt., Silent Valley, Ansari 51494 (MH).

***Nervilia crispata*** (Bl.) Schltr. in Bot. Jahrb. 45: 402. 1911; A. S. Rao in Bull. Bot. Surv. India 5: 64. 1963; C. L. Malhotra in Bull. Bot. Surv. India 11: 208. 1969. *Pogonia crispata* Bl. in Mus. Bot. Lugd. Bat. 1: 32. 1849. *Nervilia monantha* Blatt. & McC. in Journ. Bombay nat. Hist. Soc. 35: 724. 1932; Fischer in Gamble, Fl. Pres. Madras 3: 1305. 1957 (repr. ed.). (ORCHIDACEAE)

Rao (*loc. cit.*) believed this plant to have a discontinuous distribution in India and gave the localities as Sikkim Himalaya and Karnataka. Later Malhotra (*loc. cit.*) located this species in Uttar Pradesh denoting the possibility of its occurrence in other places also. The present report from Cannanore District in Kerala shows a further southward distribution of this rare and interesting orchid in India.

*Specimen examined*: KERALA: Cannanore Dt., Parappa, Ansari 67973 (MH).

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AND

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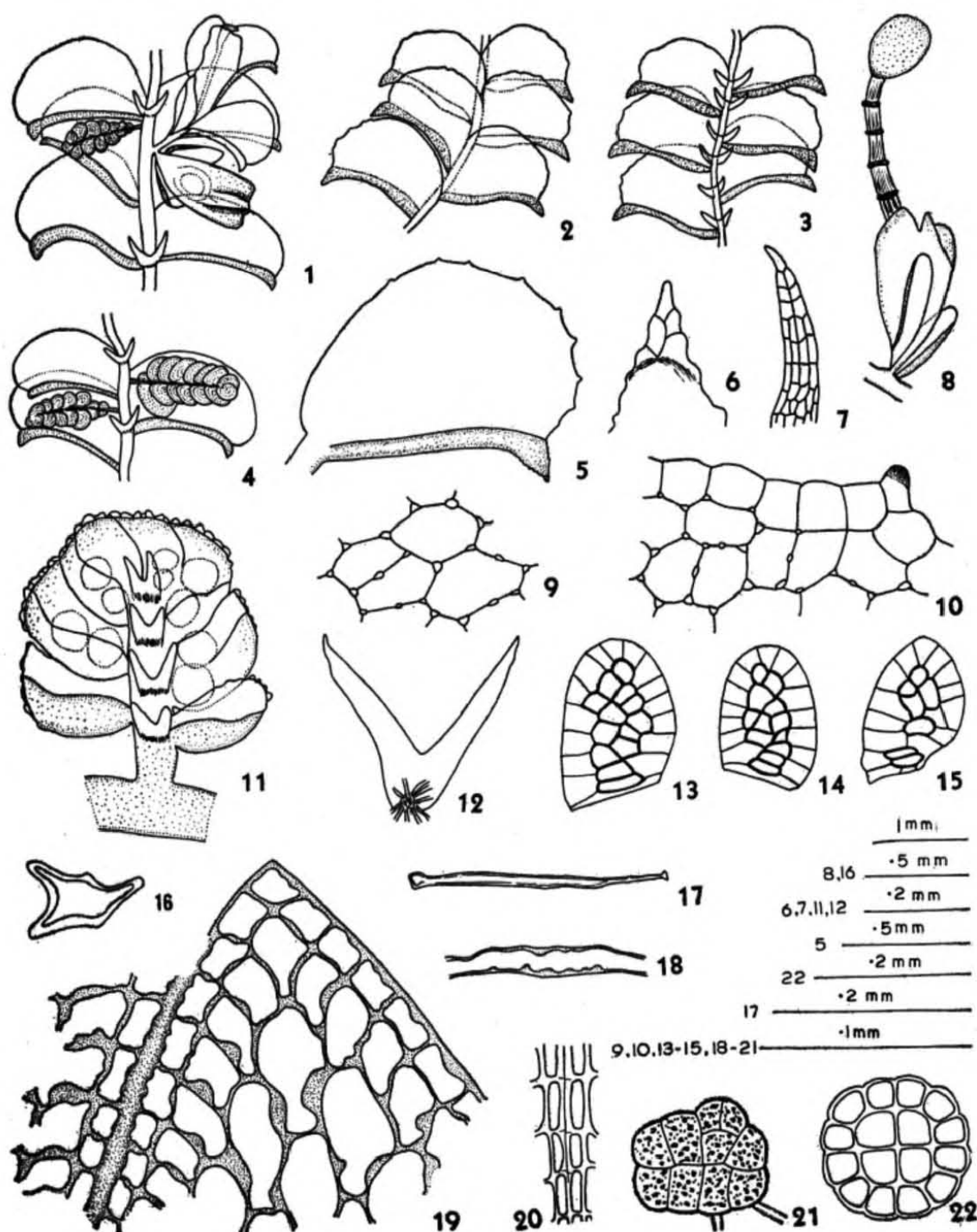
Botanical Survey of India, Coimbatore

## COLURA ARI STEPH. (HEPATICAEE) FROM ANDAMANS—A NEW RECORD FOR INDIA

The genus *Colura* Dum. is represented by 89 species, 1 var. and 1 forma in the world Hepatic flora (Bonner, 1963)\*. Recently Lal

(1977) recorded this genus from India with two species, viz., *C. tenuicornis* (Evans) Steph. and *C. calyptrifolia* (Hook.) Dum. from district Darjeeling, Eastern Himalayas. In a collection of liverworts from Andamans in December, 1978 the author discovered *C. ari*

\*However, *Colura singapurensis* (Ldbg.) Trev. is shown as distributed in Andamans. This taxon is based on *Lejeunea singapurensis* Ldbg. which has been transferred to other genus, viz., *Ceratolejeunea singapurensis* by Stephani (1890).

*Colura ari* Steph.

Figs. 1-22 : 1. Ventral view of the shoot bearing perianth and male inflorescence. 2. Part of the shoot—dorsal view. 3. Same—Ventral view. 4. Part of the shoot with two male inflorescences. 5. Leaf. 6. Apex of the sac. 7. Lobe of the underleaf. 8. Perianth with sporophyte. 9. Median leaf cells. 10. Marginal leaf cells. 11. Male inflorescence. 12. Underleaf. 13-15. Clapet. 16. T. S. of perianth. 17-18. Elaters. 19. Upper portion of the capsule valve showing prominent thickening of cell walls. 20. Inner layer of the capsule wall. 21. Sporeling with two rhizoids. 22. T. S. of seta.

Steph., previously not known either from Andamans or from the mainland.

**Colura ari** Steph., Spec. Hepat., 5: 936 (1916); *Colurolejeunea ari* Steph., in *Hedwigia* 35: 73 (1896); *Colura javanica* Steph., Spec. Hepat. 5: 937 (1916); Jovet-Ast in *Rev. Bryol. Lichenol.* 22: 255 (1953).

Epiphyllous. Plants 7-10 mm long. Leaves 1.1-1.33 mm long, 0.75-0.85 mm broad; keel  $\pm$  curved; lobes spreading, with 6-12 teeth formed of single cells; lobules narrow, rolled, bordering the lobe and form a prolonged conical sac; 0.18-0.25 mm long; sac-opening guarded by a valvular closing apparatus, the claret; claret small, 65.1-69.39  $\times$  50.1-53.04  $\mu$  m, formed of 27-28 cells in average (12-13 central dark and 15 peripheral hyaline cells) rarely of only 22 cells (8 central; in two groups and 14 peripheral hyaline cells); on the median part there is single median basal cell; marginal cells of the lobe 18.3-28.5  $\times$  24.4-32.6 (40.8)  $\mu$  m; middle cells 26.5-30.6  $\times$  42.8-53.04  $\mu$  m, thin walled, trigones and intermediate thickenings prominent. Underleaves distant, bilobed, lobes lanceolate, entire, 0.40 mm long and 0.12 mm broad, apex acute, the sinus obtuse, wide, at base 4-6 celled. Monoecious. Perianth lateral, 1.12 mm long and 0.43 mm broad, cylindrical but slightly enlarged at the upper end, truncate, 3-keeled (with one weak keel), smooth. Spores (sporelings) multicellular, of variable shape and size, 53.04-93.84  $\mu$  m long and 24.4-48.9  $\mu$  m broad, green, with one or two rhizoids. Elaters few in a capsule, hyaline, 236.6-277.4  $\mu$  m long and 12.2-20.4  $\mu$  m broad, bands of thickenings indistinct. Capsule wall bistratose. Cell walls of the outer layer sinuate, with prominent thickenings. Seta in cross section with 4 central and 12 peripheral cells. Male inflorescence on a small lateral branch, bracts in 3-7 pairs, small, saccate; bracteoles present throughout, bilobed (Figs. 1-22).

#### ECOLOGY AND DISTRIBUTION

In Andamans *Colura ari* Steph. grows epiphyllously on the upper surface of leaves of Angiosperms, as well as on fronds of a tree fern, *Angiopteris evecta* (Forst.) Hoffm. in humid and shady places. It forms pure patches on the leaves, rarely associated with other epiphyllous Lejeuneaceae. Also known from Philippines, Samoa, Celebes, Java, Sumatra (Jovet-Ast, 1953) and Ceylon (Herzog, 1921).

*Specimens examined*: ANDAMANS: ca 30 km from Port Blair; near ICAR experimental farm, ca 200 m altitude, Lal 27, 28, 29 etc. 9.12.78, Leg. et det. J. Lal, Dec. 1978. (Deposited in CAL).

#### ACKNOWLEDGEMENTS

I am grateful to Dr. S. K. Sharma and Mr. S. P. Chaturvedi for their help during the collection and to Dr. (Mrs.) K. Mitra, Palynologist, for French to English translation of some relevant literature. Further acknowledgement is due to Dr. Ram Udar, Department of Botany, Lucknow University, for kindly going through the manuscript and confirming the identity.

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