

STUDIES IN SOUTH INDIAN HEPATICAEE: 3. *CEPHALOZIA SIAMENSIS*
KITAGAWA—A NEW RECORD FROM INDIA

The Indian taxa belonging to *Cephalozia* Dum. and the related genus *Cephaloziella* Spruce are not only imperfectly known but there has been a great confusion as to their taxonomic limits. This has been primarily due to their very small size, difficulty of location in the field and to the shifting concepts at generic level. There are three species of *Cephalozia* reported from different localities of India two of which viz., *Cephalozia gollani* St. from Darjeeling, Sikkim Himalayas and *C. andreana* St. from Madura, South India, have been reported by Stephani (1906-1909; 1917-1924). *Cephalozia andreana*, however, is conspecific with *Cephalozia willisiana* St. from Ceylon which in turn does not belong to the genus *Cephalozia* but to *Cephaloziella* (Kitagawa, 1969). Later, *Cephalozia gollani* was also reported by Kashyap and Chopra (1932) from Garhwal, Western Himalayas and recently also from Thailand by Kitagawa (1969). Another species of *Cephalozia*, apart from *C. gollani*, has been described by Pande and Srivastava (1955) as a new species, *C. herzogiana* Pande et Srivastava, from Pachmarhi (3,500 ft.), Madhya Pradesh. The genus *Cephaloziella* is known in Indian flora by two species: *C. willisiana* (St.) Kitagawa and *C. subdentata* Warnst., the latter having been reported recently by Hattori (1966) from the Eastern Himalayas. Both the genera are thus represented so far only by two species each in Indian flora and could be separated on the basis of the following characters:

Characters	<i>Cephalozia</i>	<i>Cephaloziella</i>
1. Gemmae	Unicelled	Bicelled, sometimes Unicelled (Kitagawa)
2. Antheridial stalk	Biseriate	Uniseriate
3. Seta anatomy	T. S. seta shows four inner and eight outer epidermal cells.	T. S. seta shows four inner smaller and four outer larger epidermal cells.

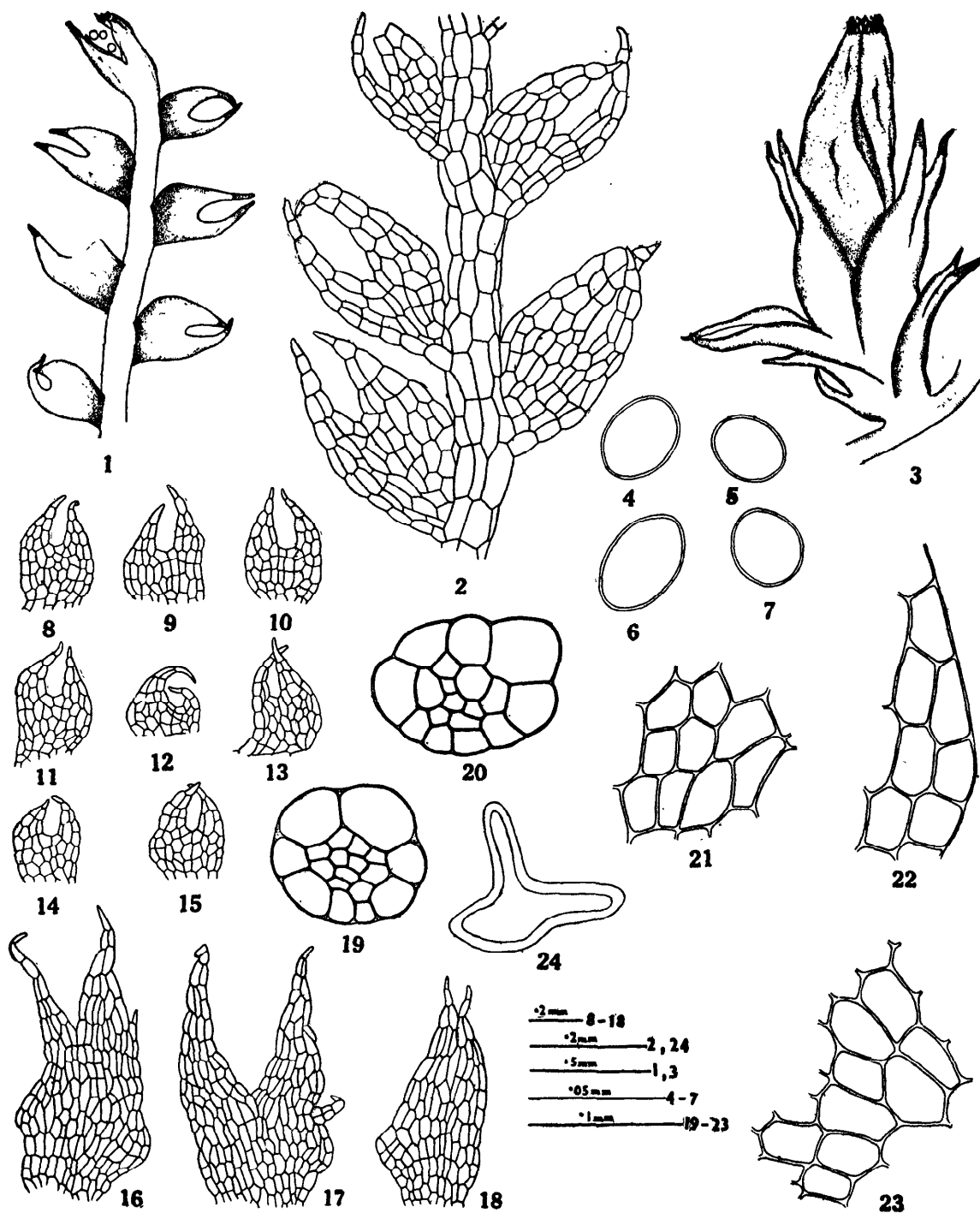
During the course of an intensive study of the flora of South India—a territory highly luxuriant in liverworts—the authors came across an interesting plant which is referable to *Cephalozia siamensis* Kitagawa. This species has so far been endemic to Thailand and is now being reported for the first time from India.

The plants of *C. siamensis* were found growing on soil and moist rocks in shaded places intermixed with *Cephaloziella willisiana* and were collected by one of us (R.U.) and Dr. S. C. Srivastava on October 1, 1966 from Bandishola, 9 miles from Coonoor, a well known hill station of South India situated on Nilgiri Hill at an altitude of about 6,500 ft. The specimens have been deposited in the Hepatic Herbarium, Botany Department, Lucknow University, Lucknow.

The following specimens were also available for examination through the courtesy of Dr. C. E. B. Bonner, Conservatoire Botanique, Geneve and Dr. Naofumi Kitagawa, Biological Laboratory, Nara University of Education, Japan: 1. *Cephalozia gollani*: No. 13501, Bryotheca E. Levier, Hepaticae Indiae Orientalis, Curante Cl. W. Gollan lectae, Darjeeling (Sikkim), Senchal Range 8,000 ft, 29 Oct. 1900, legit—A. C. Hartless. 2. *C. andreana*: new sp., No. 13499, Fondation Stephani, Herb. J. Cardot. India Orient. Kodaikanal, legit—G. Andre 1909. 3. *C. willisiana*: new sp., No. 13504, Ceylon, Jungle near Passara, I. C. Willis, 11/2 1900. 4. *C. siamensis*: N. Kitagawa, Isotype, Loc. Lamphun: higher elevation of Mt. Doi Khun Tan, 1200-1374 m alt., in moist evergreen forest, on soil. September 5, 1967. Coll. M. Tagawa and N. Kitagawa, No. T 12103. 5. *C. gollani* Steph., Det. N. K., Thailand Mt. Phu Kradung, 1200-1300 m alt., D. 25 M. 21964. legit S. Kurokawa 4185.

Cephalozia siamensis Kitagawa in J. Hattori
Bot. Lab. 32: 293. 1969.

Plants small, dioicous, in large compact patches, growing in association with *Cepha-*



Cephalozia siamensis Kitagawa

Figs. 1-24: 1. A part of a plant showing apical gemmae. 2. A part of a plant magnified. 3. Perianth bearing shoot. 4-7. Unicelled gemmae. 8-15. Leaf lobes. 16-18. Female bracts. 19-20. T. S. of stem. 21. Median leaf cells. 22. Marginal leaf cells. 23. Basal leaf cells. 24. T. S. Perianth,

loziella willisiana on soil, stem creeping, light green, 6-12 mm long. Sterile shoots often flagelliform with vestigial (reduced) leaves towards the apex. Main stem 73.26-101.75 μ in diameter, cortical cells in 8-9 longitudinal rows and medullary cells 9-11 in number, thin walled. Branches ventral. Leaves obliquely inserted, distant to slightly imbricate, alternate entire, deeply bilobed usually to half, 345.95-394.79 μ long and 187.22-244.20 μ broad, variable in shape and size, oblong to ovate. Apex of the lobes acute to acuminate, epidermal cells thin walled, non-trigonous, pellucid, marginal epidermal cells 28.8-67.2 μ long and 19.2-28.8 μ broad, basal epidermal cells 38.4-57.6 μ long and 28.8-38.4 μ broad, and median epidermal cells 28.8-57.6 μ long and 19.2-28.8 μ broad. Amphigastria absent. Rhizoids very rare, if present simple, colourless and on the ventral side. Gemmae present apically in masses, pellucid, thin walled, unicelled, usually ovoid, 20.35-32.56 μ long and 16.28-24.42 μ broad, rarely spherical, 16.28-20.35 μ in diameter. The mature sporophytes are absent. Bracts in three pairs, larger than vegetative leaves, 0.86-1.34 mm long, deeply bilobed half to three-fourth, apex of each lobe acute, entire, perianth cylindrical, 3-keeled having constricted and ciliated mouth.

The Indian specimens of *Cephalozia si-*

ensis closely resemble the specimens from Thailand in leaf structure, size of the cells, presence of unicelled oval gemmae, habit of the plant as well as its perianth structure which is 3-keeled. This species is quite distinct from the other Indian species, *Cephalozia gollani* as the former has oblong-ovate symmetrical leaves with lobes not connivent while the latter has obliquely suborbicular, asymmetrical leaves with connivent lobes. *Cephalozia herzogiana* Pande et Srivastava is also distinct from *C. siamensis* in sexuality (being monoicous), the much smaller thick-walled leaf cells and mouth of the perianth which is denticulate or crenulate.

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ACRIOPSIS INDICA WIGHT (ORCHIDACEAE)—FROM TRIPURA

During the course of a botanical exploration in Tripura State the authors collected *Acriopsis indica* Wight, an interesting and rare orchid in flowers and fruits. This orchid was found growing on trees of *Shorea robusta* Gaertn. The present collection so far away from its known localities of occurrence (Malaysia) where it is widely distributed, is interesting.

The name of the specific epithet of *A. indica* Wight is interesting and one may feel its type locality to be in India. But the earlier known localities of its occurrence are Tenasserim, Penang, Java, Laos, Cambodia and Annam.

Hooker (1890) also writes "Wight who had lost the locality of the species *A. indica* Wight, he figured, probably received it from