

at maturity. Mycelium branched, septate and 5.36–10.71  $\mu\text{m}$  (average 8.03  $\mu\text{m}$ ) wide. The sclerotia developed on the straw of mushroom beds were only microsclerotia, oval in shape and measuring 675–700  $\mu\text{m} \times$  450–600  $\mu\text{m}$  (average 687  $\times$  525  $\mu\text{m}$ ). When repeatedly subcultured, by the third generation, it produced macrosclerotia which were light to dark brown in colour measuring 0.90–1.00 mm  $\times$  1.00–1.20 mm (average 0.95 mm  $\times$  1.10 mm). The white crust of fungal growth observed on the surface of straw represented the basidial state of the organism. Basidia barrel-shaped, measuring 7.14–8.90  $\mu\text{m} \times$  5.24–7.14  $\mu\text{m}$  (average 8.02  $\mu\text{m} \times$  6.19  $\mu\text{m}$ ); sterigmata, usually four; rarely two, long narrow and horn-shaped, tapering towards the tip and measure 3.54–7.14  $\mu\text{m}$  (average 5.34  $\mu\text{m}$ ). Basidiospores hyaline, oval to pyriform, thin walled and measure 3.57–5.24  $\mu\text{m} \times$  3.57–4.40  $\mu\text{m}$  (average 4.40  $\mu\text{m} \times$  4.01  $\mu\text{m}$ ).



FIG. 2. Sclerotia developed on the surface of the straw.

Typical symptoms of sheath blight disease were produced on rice seedlings within ten days of inoculation with the microsclerotia and basidial culture from paddy straw of mushroom beds. Soil inoculation of these cultures on cowpea caused collar rot symptoms within seven days of inoculation.

The morphological characters of the isolate from the mushroom beds resemble those of *Rhizoctonia microsclerotia* (Matz) Weber, first described by Matz<sup>2</sup>. *R. microsclerotia* is known to be associated with stubbles of rice in different parts of India<sup>3</sup>. This organism has been reported earlier from Kerala causing collar rot and web blight of cowpea by Lakshmanan *et al.*<sup>1</sup> They have also established its pathological and genetical relationship with those of *R. solani* isolated from rice causing sheath blight disease. *R. microsclerotia* and its perfect state, formerly described as *Corticium microsclerotia* by Weber<sup>2</sup> are considered as synonyms of *R. solani* Kühn and *Thanatephorus cucumeris* (Frank) Donk by Parmeter and Whitney<sup>4</sup> and Talbot<sup>5</sup> respectively. The natural occurrence of *T. cucumeris* on paddy straw is observed

for the first time in India and this points out the potential danger of paddy straw as the carrier of the organism serving as a primary source of inoculum for both sheath blight of rice and collar rot and web blight of cowpea. Moreover, use of straw collected from sheath blight-infected paddy crop for the cultivation of *V. volvacea* results in poor yield of this mushroom also.

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1. Lakshmanan, P., Nair, M. C. and Menon, M. R., *Plant Dis. Repr.*, 1979 (In press).
2. Matz, J., *Phytopathology*, 1917, 7, 110.
3. Mundkur, B. B., *Indian J. Agric. sci.*, 1935, 5, 393.
4. Parmeter, J. R., Jr. and Whitney, H. S., *Rhizoctonia solani: Biology and Pathology*, (ed. J. R. Parmeter Jr.). University of California Press, Berkeley, 1970, p. 255.
5. Talbot, P. H. B., *Rhizoctonia solani: Biology and Pathology* (ed. J. R. Parmeter Jr.), University of California Press, Berkeley, 1970, p. 255.
6. Weber, G. F., *Mycologia*, 1951, 43, 727.

#### ON A XANTHOPHYCEAN ALGA NEW TO INDIA

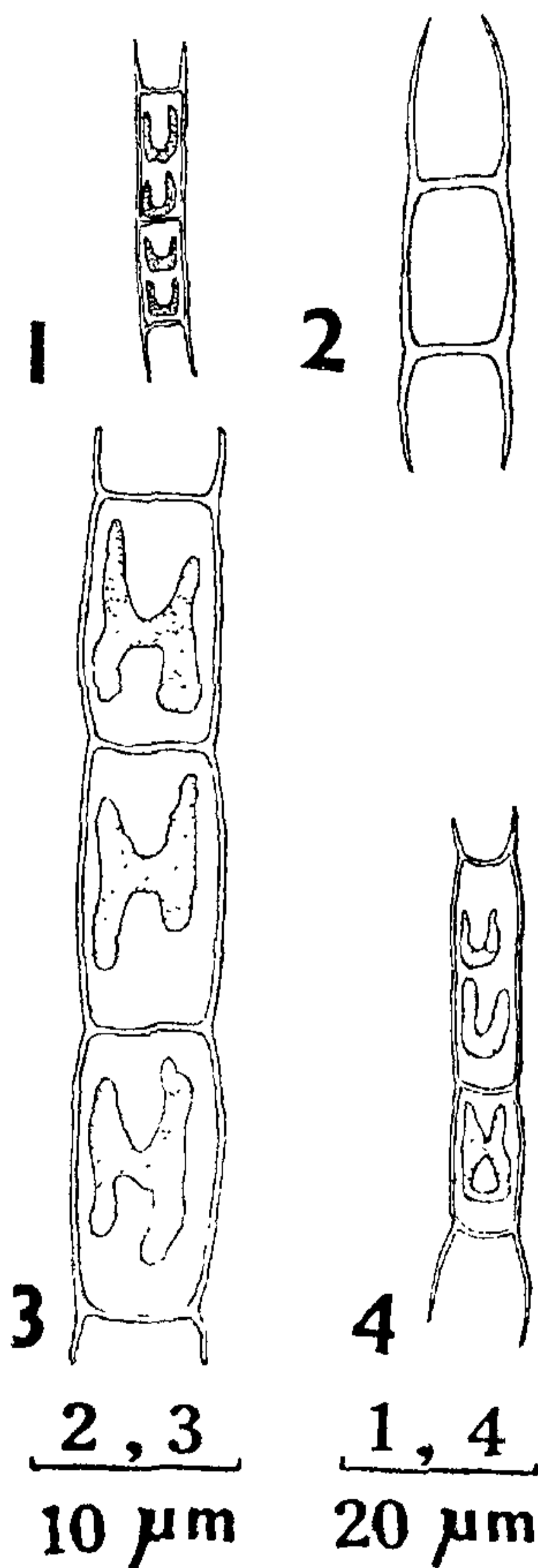
LITTLE information is available on the algal flora of Andaman and Nicobar Islands and the notable works on this area are given in reference No. 1.

While investigating the fresh-water forms of Andaman Islands, the authors came across *Tribonema aequale* Pascher<sup>2</sup>, a Xanthophyceean alga which constitutes a new record for the Indian flora. The genus *Tribonema* Derbes *et* Solier in India includes only two species, namely, *T. vulgare* Pascher and *T. ulotrichoides* forma Prasad and Mehrotra<sup>3-6</sup>.

*Tribonema aequale* Pascher was collected from two different places, Bedanabad and Pahargaon near Port Blair (Andaman Islands). So far, species of the genus *Tribonema* Derbes *et* Solier are known to occur in India only in cold and running waters of high altitudes<sup>3,5</sup>. However, the plants of this genus in the present study were collected from warm waters (temp. 27–5° C) both running as well as stagnant,

*Tribonema aequale* Pascher (Figs. 1-4).

Filaments dull yellowish-green in colour; cells 2-2½ times longer than broad, 11.5-16.0 µm long, 5.5-7 µm broad; chromatophores one, rarely two, parietal; pyrenoids absent; cell wall composed of 'H'-pieces, ends of filaments generally open, exhibiting one arm of 'H'-piece. Reproduction other than fragmentation not seen.



FIGS. 1-4. Fig. 1. Fragment of filament showing 2 chromatophores per cell. Fig. 2. Filament showing 'H'-pieces. Fig. 3. A magnified view of filament with single chromatophore per cell. Fig. 4. Filament showing variability in the morphology and number of chromatophores.

Habitat :

- (1) Free-floating along with some desmids in a Pond at Pahargaon, near Port Blair (Andaman Islands), Coll. No. 33 F.  
Date : 27-1-1978.
- (2) Epiphytic on *Nitella* sp. in a fresh-water stream at Bedanabad, near Port Blair (Andaman Islands), Coll. No. 59 F.  
Date : 27-1-1978.

The filaments and cells of plants collected from Bedanabad are slightly longer and broader than those from Pahargaon.

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1. Srinivasan, K., "Algarum species ex India oriundae," *Bull. Bot. Surv. India*, 1965, 7, 188.
2. Pascher, A., "Heterokonten" in *Rabenhorst's Kryptogamenflora*, Akademische Verlagsgesellschaft, M.B.H., 1939.
3. Kamat, N. D., *J. Bombay nat. Hist. Soc.*, 1968, 65, 271.
4. Pillay, T. V. R., Vijayaraghavan, M. R. and Thakurta, S. C., *Proc. nat. Inst. Sci. Ind.*, 1962, 28 (B), 416.
5. Prasad, B. N. and Mehrotra, R. K., *Curr. Sci.*, 1970, 39, 522.
6. — and —, *Bull. Bot. Surv. India, Calcutta*, 1977 (In press).

**CHARA FIBROSA VAR. FIBROSA  
f. LONGICOROLLATA : A NEW RECORD FOR  
INDIA AND ITS CYTOLOGY**

IN the course of a detailed cytological investigation of the Charophytes of West Bengal, the author recently collected an interesting species of *Chara* which on close scrutiny was identified as *Chara fibrosa* Ag. ex Bruz. var. *fibrosa* f. *longicorollata* (Kasaki) R.D.W. following the recently published iconograph and monograph of the "Revision of Characeae"<sup>1,2</sup>. *Chara fibrosa* var. *fibrosa* f. *longicorollata* was originally described as a distinct species *C. longicorollata* Kasaki<sup>3</sup> from Northern Honshu, Japan, but later considered as a variety *longicorollata* of *C. bentharii* A. Br. by the same author<sup>4</sup>. This particular taxon was reported to be endemic in Japan and has so far not been reported to occur in India<sup>5</sup>, has now been recorded for the first time in India. A brief description of the Indian material follows.