When the conidial suspensions of *Peronosclerospora sorghi* (Ito) Shaw, collected from sorghum and maize plants of downy mildew nursery at Mysore, were sprayed on *Heteropogon*, infection was not noticed, indicating that the fungus prevalent on maize and sorghum is different.

Scanning electron microscopic studies revealed that the morphology of the oospore of the present pathogen is distinct from *P. sorghi* of Mysore.

In Mysore, *P. sorghi* is prevalent since several years both on sorghum and maize[1]. However, no downy mildew has been recorded on species of *Heteropogon* in Mysore. In Rajasthan, downy mildew has been reported in *Heteropogon contortus*[2] which has been named as *Peronosclerospora heteropogoni*[3]. The new fungus, however, differs from the Rajasthan downy mildew both in the morphological and cytological characters. The conidiophores of Rajasthan downy mildew are shorter than those of the present fungus and, in addition, the conidia are rounded. The conidia of *P. heteropogoni* contain 10–26 nuclei[3] whereas, in the present fungus the nuclei range from 6–12/conidium. In addition, the pathogen under study produced oospores in maize leaves unlike the Rajasthan variety which does not produce oospores in maize.

Maize, in Mysore, is mostly cultivated as a rainfed crop and downy mildew caused by *P. sorghi* is a great threat to maize cultivation. As many as ten downy mildews are already reported on maize from different countries[4]. Since the present pathogen infects and perpetuates on maize and produces oospores, it adds another potential threat to the crop. Since oospores were recorded in the root portion of the perennial grass, there is a possibility of their survival in the soil for next season. The grass is widely distributed and acts like inoculum source of the disease which adds a new dimension to the difficulties in controlling downy mildews on maize.

Shaw[5] has suggested erection of a new genus *Peronosclerospora* to which species of *Sclerospora* producing conidia which germinate by producing germ tube have been transferred. In view of the above fact, the new fungus can be included under the genus *Peronosclerospora*. This new pathogen differs from the known species of *Peronosclerospora* in conidial morphology, cytology and oospore morphology. The failure of *P. sorghi* of Mysore to cause infection in healthy *Heteropogon* plants is an additional support for this view. Detailed description of the fungus will be described in a subsequent paper.

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SOME TAXA OF *PLEUROTAENIUM* NAEGELI AND *STAURASTRUM* MEYEN NEW TO INDIAN FLORA

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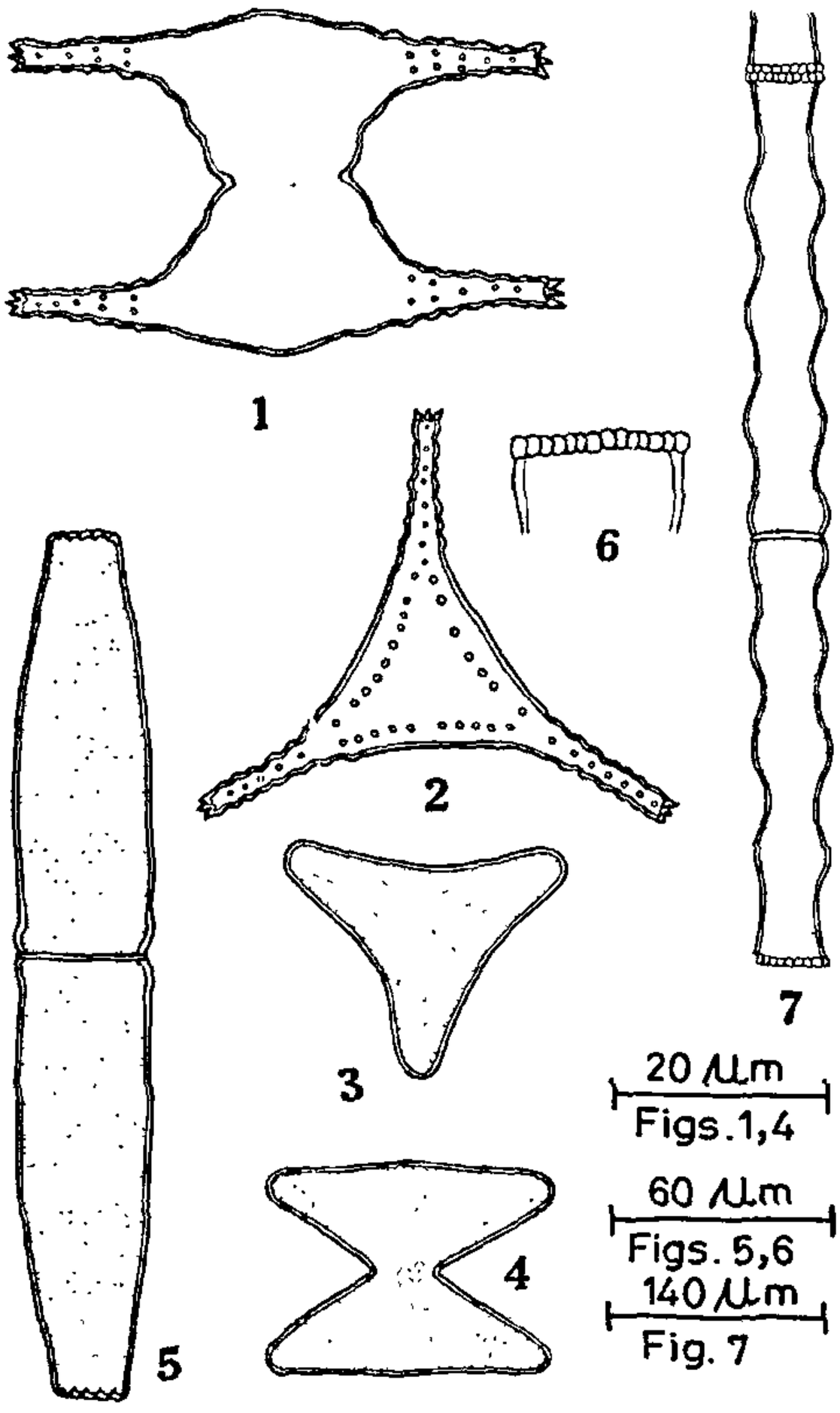
DURING a study of freshwater Chlorophyceae of Andaman and Nicobar Islands, four interesting taxa of desmids *viz* 1. *Pleurotaenium lagerheimii* Krieger, 2. *P. truncatum* (Bréb). Naeg var. *farquharsonii* (Roy *et* Biss). W. *et* G. S. West, 3. *Staurastrum bieneanum* Rabenh var *ellepticum* Wille forma Skuja and 4. *S. gracile* Ralfs var *coronulatum* Boldt were collected. These Placoderm desmids have so far not been recorded from India, and are described here in Indian Desmid flora.

Systematic Description

1. *Pleurotaenium lagerheimii* Krieger (figures 6, 7) Krieger[1], W. 1937, p. 421, pl. 45, fig. 7; Prescott[2], G. W. 1966, p. 10, pl. 12, fig. 3.

Cell large, about 10.5 times longer than broad with four prominent swellings, evenly broad upto slightly diverging and broadly truncate apices showing 26–28 tubercles (13–14 seen across the apex); cell wall minutely punctate.



Figures 1–7. 1, 2. *Staurastrum gracile* Ralfs var. *corunulatum* Boldt; **3, 4.** *S. bieneanum* Rabenh. var. *ellipticum* Wille forma Skuja; **5.** *Pleurotaenium truncatum (Bréb).* Naeg *var. farquharsonii* (Roy *et* Biss.) W. *et* G. S. West; **6, 7.** *P. lagerheimii* Krieger.

Long. cell. 604 µm, lat. cell. 56 µm, lat. apex 51.5 µm.
Locality: Water Works tank at Bambooflat (South Andaman).
Coll. No. & Date: AN582; 17-10-1979.

Distribution: Krieger[1] described this taxon in his monograph on desmids of Europe. Prescott[2] recorded it from Panama canal in Central America.

2. *Pleurotaenium truncatum* (Bréb.) Naeg. var *farquharsonii* (Roy *et* Biss.) W. *et* G. S. West (figure 5)
West, W. and West, G. S. 1904, p. 205, pl. 29, figs. 5, 6; Krieger, W. 1937, p. 433, pl. 49, figures 5, 6.

Cell of medium size, about 7 times longer than broad; semicells somewhat cylindrical with indistinct middle inflation, suddenly attenuated near apices, apical tubercles large and depressed, 10–12 in number (5–6 seen across the apex).
Long. cell. 239 µm, lat. cell. 36.5 µm, lat. apex 16–17.5 µm.
Locality: Pond at School Line, Port Blair.
Coll. No. & Date: AN521; 11-10-1979.

Distribution: West and West[3] reported this species from England and Krieger[1] included it in his work on European desmids. Scott and Prescott[4] recorded this desmid from Indonesia. Prescott[2] mentioned its occurrence in the Panama canal of Central America.

3. *Staurastrum bieneanum* Rabenh. var *ellipticum* Wille forma Skuja (figures 3, 4)
Skuja, H. 1949, p. 154, pl. 34, figure 9.

Cell small, considerably broader than long, deeply constricted, sinus widely open with an acuminate apex; semicells narrowly elliptic with acute angles and faintly recurved tips; top-view triangular; cell wall punctate.
Long. cell. 24 µm, lat. cell. 29.5 µm, lat. isthmus 6 µm.

The present desmid is slightly smaller than Skuja's Burmese form[4].
Locality: Pond near Air Port, School Line, Port Blair.
Coll. No. & Date: AN 519; 11-10-1979.

Distribution: Skuja[5] described this new forma from Burma, which is close to Andaman islands.

4. *Staurastrum gracile* Ralfs var. *Coronulatum* Boldt (figures 1, 2) West, W., West, G. S. and Carter, N. 1923, p. 100, pl. 144, figure 10; Hirano, M. 1959, p. 362, pl. 24, figure 44.

Cell of medium size, about 2.3 times longer than broad (excluding the process), depressed, constriction shallow with an acute notch; semicells more or less broadening towards the slightly convex apex, apices with undulate margins and relatively shorter and emerginate process showing 2–3 minute spines on tip and 4–5 concentric rows of dentations on wall, top view triangular with dentations within the lateral margins. Long. cell. 29 µm, lat. cell. with processes 44 µm, lat. cell. without processes 19.5 µm, lat. isthmus 11 µm.

The top view of the present specimen exhibits dentations within the lateral margins instead of 2 verrucae as described for the type.
Locality: Garacharma Tank, Port Blair.
Coll. No. & Date: An 360; 19-11-1978.

Table 1 *Physico-chemical features of water*

Locality (Loc. No.)	Water temp. (°C)	pH	Chloride (mg/l)	Total hardness (mg/l)	Calcium (mg/l)	Magnesium (mg/l)	Carbonate (mg/l)	Bicarbonate (mg/l)
Garacharma tank (AN 360)	30.5	8 0	59.35	52.78	7.22	8.43	7.74	97.6
Near Air Port, School Line Port Blair (AN 519)	33	6.8	18.06	38.18	5.12	6.16	7.74	93.15
School Line Port Blair (AN 521)	33	7.0	33.54	31.69	4.129	5.67	6.87	24 4
Banbooflat (AN 582)	29.5	7.6	36.12	20.21	5.16	1.77	6.34	61

Distribution: West *et al*[6] described this variety from England, which was latter recorded from Japan by Hirano[7]. Grönblad *et al*[8] reported this taxon from Uganda and Lake Victoria.

All these desmids, except *Staurastrum bieneanum* Rabenh var. *ellepticum* Wille Forma Skuja, are known to occur outside Asia also. *Pleurotaenium truncatum* (Bréb.) Naeg var. *Farquharsonii* (Roy *et* Biss) W. *et* G. S. West, *Staurastrum bieneanum* Rabenh var *ellipticum* Wille Forma Skuja and *S. gracile* Ralfs var. *coronulatum* have been reported from south and Far east Asian countries. Occurrence of these taxa in Andaman Islands further extends their distribution in South east region of Asia.

Physico-chemical analysis of different waters harbouring these desmids has been performed with respect to certain parameters. The results are given in table 1.

These results reveal that these waters are essentially neutral with very slight shifts towards acidity or alkalinity. They are softer and somewhat less polluted. With respect to global distribution, it will be seen that all the four desmid taxa described above have an extensive spread over more than one continent and occur in both old and new worlds. Nevertheless, their records are few and scarce and hence may be considered rare and, perhaps, endangered taxa.

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ALACHLOR TOXICITY TO A FRESHWATER TELEOST *CLARIAS BATRACHUS*

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THE investigations on the effects of pesticides on fish are concerned with the histopathological changes in the tissues especially liver, kidney and gills. Eisler[1]