

ON TWO DIATOMS FROM THE INSHORE WATERS OF PALK BAY*

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Observations on the occurrence and distribution of diatoms at Station P in Palk Bay have been made systematically since 1951 (Prasad, 1956). In 1957 March two species of diatoms were noticed for the first time in the routine plankton collections. On detailed examination they were found to belong to the genera *Stictocyclus* (Family EUPODISCAEAE) and *Cerataulus* (Family BIDDULPHIACEAE). Since these two species are new records from the Indian coast (ref. Subrahmanyam, 1946 & 1958) the taxonomic account of them together with some remarks on their occurrence is given below:

Centrales

Family EUPODISCAEAE

Genus STICTOCYCLUS Mann

Stictocyclus appendiculatus (Grunow) Hustedt.

In Schmidt, A., *Atlas*, PL 433, Figs. 1-3, 1941
(Plate I, Figs. 1-2)

Syn.: *Stictodiscus appendiculatus*, Van Heurck, 1880-1885, Pl. 118, Fig. 4
Actinocyclus appendiculatus, Rattray, 1890, p. 161. *Stictocyclus varicus* Mann
1925, p. 146, Pl. 32, Figs. 1-2. *Stictocyclus* (*Actinocyclus*) *varians*, Karsten
1929, p. 226, Fig. 252.

Cells cylindrical, usually single, sometimes united in two. Valves circular. Valve surface almost flat and with numerous radiating ribs about 6 μ apart at the apparent rim and extending to the valve mantle. The two valves joined by the girdle forming a thick frustule. The ribs do not reach the centre. A hyaline 'eye' present located 10 μ inside the rim. Valve surface areolate, Areolae in radial rows 6 in 10 μ . Girdle with 5 ring-like markings. Areolation on the girdle delicate, 13 in 10 μ . Chloroplasts small and numerous.

Length of perivalvar axis : 482 to 1020 μ .

Length of apical axis : 188 to 268 μ .

Distribution : Philippines, Miang Besar, Borneo, Java, Palk Bay (Mandapam).

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Family BIDDULPHIACEA

Genus CERATAULUS Ehrenberg.

Cerataulus thermalis var. *sinensis* (Grun.) Forti forma *ceylonica* Skvortzow,

Ann. roy. hot. Gard. Peradeniya, 11, p. 252, pi. 32, figs. 4, 6 & 7

(Plate I, Fig. 3)

Cells cylindrical, united in short, straight chains. Pervalvar axis elongated. Usually two to three times the diameter. Valves circular with four short rounded and slightly elevated processes. Valve mantle short, no constriction between the valve and girdle zones. Ring-like markings on the girdle. Areolae faint, in perivalvar rows on the girdle and slightly arching to the centre on the valve mantle, 12 in 10 μ . Cytoplasm with numerous, small chromatophores and a central nucleus.

Length of apical axis: 91 to 107 μ .

Length of perivalvar axis : 160 to 415 μ .

Distribution : Island of Socotra, Ceylon and Palk Bay (Mandapam).

Since the first record of *Stictocyclus appendiculatus* and *Cerataulus thermalis* var. *sinensis* forma *ceylonica*, they have been fairly common in March-April in Palk Bay and the two species generally occur during the same period. Until then they do not appear to have belonged to an autochthonous breeding stock of this area. It may be mentioned here that Mann (1925) has recorded *Stictocyclus* from Philippines. According to Sewell (1937) during the north-east monsoon there is a strong flow of water from the Pacific to the Indian Ocean through the Straits of Malacca into the Andaman Sea and out into the Bay of Bengal. Since a certain portion of the flora that develop in a locality when the conditions become favourable may sometimes be introduced by currents, it is logical to believe that *Stictocyclus* was carried into the present locality from the Pacific, though how exactly it happened remains a matter for conjecture. In this connection the classical example of *Biddulphia sinensis* Greville may be mentioned. Lebour (1930) remarks about the distribution of *B. sinensis*, that it is an Indo-Pacific form which suddenly made its appearance in 1903 in Danish waters in the North Sea, and later in the Irish Sea and English Channel and that Ostenfeld who has investigated its distribution supposes that it was brought by some ship to the mouth of the Elbe, where finding a suitable breeding place, it reproduced freely and was carried by currents north and north-east. At Plymouth it first appeared in October 1909 and November of the same year it was noticed in Port Erin. It is felt that like *B. sinensis* the two species, *Stictocyclus appendiculatus* and *Cerataulus thermalis* var. *sinensis* f. *ceylonica* could be useful as indicators of water movement if sufficient data on the distribution of these species are available from other regions as well. Further work on these aspects is in progress.

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