Septum of *Geotrichum candidum* or Valva of a Centric Diatom?

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It is suggested that the structures which have been interpreted as immature septa of *Geotrichum candidum* by Hashimoto et al. represent valvae of a centric diatom.

In a recent issue of this journal, Hashimoto et al. (1) published a study on septum formation in *Geotrichum candidum*. They included several electron micrographs of septa obtained by cross-sectioning and freeze etching as well as of isolated septa. Among these micrographs the Fig. 3a and b and 4a and b were interpreted to be immature septa, but they most probably do not represent septa of *Geotrichum*.

These figures show a regular pattern of pore-like structures in radially arranged fields and, in addition, some "pegs" at the periphery and a "serrated line" which was said to delineate the immature septum from the lateral cell wall. Further, there is a slightly excentric area free from the common pores with a peculiar, less electron-dense structure which was not mentioned by the authors.

Comparing these figures with the young or older cross-sectioned septa or with the isolated older septa, it is not possible to find corresponding details. There is even a discrepancy in shape; Fig. 3a of Hashimoto et al. (1) obviously represents a cup-like structure, as shown by the shape of the "pore-fields" at the margin of the structure near the symbol "Z".

On the contrary, these figures resemble valvae of centric diatoms. Fig. 1 shows valvae of *Cyclotella cryptica* in different views (cf. 3). Though the structures of Hashimoto et al. (1) surely do not represent the same species, the similarities are striking. The pattern of pores, the pegs, and the excentric structure corresponds closely to the costae and intercostae with their porous structures, the marginal tubules and the excentric branched pore, respectively, neglecting that in Fig. 3a (1) the latter seems to be contaminated. Moreover the "serrated line" corresponds to the intercalary bands of *Cyclotella* (Fig. 1), and the substructure shown in Fig. 3b (1) resembles similar structures in diatoms (cf 2).

Presumably, the valvae of a species of *Thalassiosira* or of a related genus (2) may be even more similar to the structures figured by Hashimoto et al. (1) than those of *Cyclotella*. All observations and comparisons support the suggestion that the structures in question are valvae of a centric diatom rather than immature septa of *G. candidum*. It may be that they occurred as a contamination in the agar or were introduced otherwise during culturing or during the preparation. A possible source could be water which was filtered by kieselgur. The methods of Hashimoto et al. (1) would preserve and enrich the valvae.

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FIG. 1. Cyclotella cryptica, isolated frustules after dissolution of cytoplasm by $H_2SO_4$. Valvae in different views; in lateral (=girdle) view with intercalary bands. Marker bar represents 1 μm.