

SEM-STUDY ON *CYCLOTELLA OPERCULATA* (C.AGARDH) KÜTZING (CENTRALES, BACILLARIOPHYCEAE)

Tsang-Pi Chang

Biobasis

Scanning electronic microscopy (SEM) was used to improve the classification of *Cyclotella operculata*. This first centric diatom species was often incorrectly classified in the past due to observations based on light microscopy (LM). Therefore, the present author reexamined Agardh's original material with SEM and found *C. operculata* showing variable valve morphology. Various patterns appeared on the external surface with smooth or roughly structured faces decorated with one punctum or 3-5 depressions (s. Chang 1999, Chang & Chang-Schneider 2010). The valves with one punctum on the rough or smooth valve face have been considered as the type of *C. operculata*. The one with rough valve face was determined as *C. kuetzingiana* or else in the past and the other one with a smooth valve face was once determined by Hustedt (1930) as *C. comta* var. *unipunctata*. One other diatom with few depressions on the valve face was identified as *C. ocellata* (s. Houk et al. 2010). However, all these species have shown a similar pattern on the internal valve faces. It is argued that all variables in Agardh's original material should be classified as one species in different growth stages and thus emphasized that a good classification of *C. operculata* and similar species should be based on examining both valve faces with SEM.

References:

- Chang, T. P. (1999). In: *Proc. 14th IDS in Tokyo* (1996), 23-34.
 Chang, T. P. & Chang-Schneider, H. (2010). *Ber. Bay. Bot. Ges.* 80: 33-44.
 Hustedt, F. (1930). In: *Rabenhorst's Kryptogamen-Flora* 7(1): 920 pp. (Koeltz reprinted in 1977).
 Houk, V., Klee, R. & Tanaka, H. (2010). *Atlas Freshwater centric diatoms*. 498 pp. 215 pl. *Fottea* 10 (supplement).