Abstract
The history and nature of *Caloneis* are discussed. The genus appears to possess no morphological synapomorphies and cannot be satisfactorily diagnosed versus *Pinnularia*. Thus, although molecular genetic data could yet show that *Caloneis* is strictly monophyletic, there is currently no evidence for this view. I suggest that *Caloneis* has been maintained largely because of historical precedent: diatoms with alveolate striae have been identified to the level of species or species complex directly, without reference to supposed generic characteristics; only once the species or species complex has been recognized is the diatom assigned to *Caloneis*, which is done using received knowledge, based on convention.

Key index words
alveolate striae, *Caloneis, Pinnularia*, taxonomy