Cah. Biol. Mar. (1997) 38 : 215-216

A comment on the morphology of some Mediterranean marine ciliates.

Genoveva F. ESTEBAN[1§], Tom FENCHEL[2] & Bland J. FINLAY[1]

[1] *Institute of Freshwater Ecology, Windermere Laboratory, Far Sawrey, Ambleside, Cumbria LA22 0LP, United Kingdom*
Fax: 44 15 394 46914

[2] *Marine Biological Laboratory, University of Copenhagen, Strandpromenaden 5, DK-3000 Helsingør, Denmark*

Introduction

In a recent paper, Dragesco (1996) investigated five species of interstitial ciliated protozoa collected from sandy beaches in the Sète area (France), using improved fixation and protargol impregnation methods. His study contributes to our knowledge of the morphological plasticity of ciliates, and the article provides a wide selection of half tones and line drawings that are reproduced with high quality. The descriptions of ciliates are based on the infraciliature (i.e. assembly of all kinetosomes and associated subpellicularly located microfibrillar and microtubular structures [Corliss, 1979]), and morphometry of some organisms. However, there are some points that deserve clarification - mainly related to the manner with which the author justifies his observations, and the curiously biased comparisons he makes with previously published descriptions.

The author claims to redescribe *Metopus contortus* "avec plus de précision", comparing his description with that of Esteban *et al.* (1995). It should be noted that two characteristics distinguish the latter from many other revisions of ciliate genera. First, Esteban *et al.* based their descriptions on the study of wild forms, and (more importantly) on cultures of the species described therein. Second, having cultures of the organisms permitted the observation of hundreds of cells. Dragesco redescribed *Metopus contortus* from his observations of between 10 and 30 cells of a wild population. The description of *M. contortus* in Esteban *et al.* (1995) is accompanied by thirteen figures showing: the living organism, silver impregnation, autofluorescence, variability of the length and breadth of more than two hundred cells, and TEM photographs (incidentally - clearly showing mucocysts, for which Dragesco found it "impossible" to obtain evidence). Despite this wealth of descriptive material Dragesco states that Fig. 9 in Esteban *et al.* (1995) is "insuffisante", and photographs 7 and 8 "montrent une surcoloration fâcheuse" (actually, Figs. 7 and 8 are not of *M. contortus,* but of *M. nivaaensis). M. contortus* in Esteban *et al.* (1995) is therefore not an "aberrante" form as Dragesco (1996) declares, and his species is most probably either *M. nivaaensis* or *M. major.*

Dragesco (1996) also criticised the Esteban *et al.* (1995) revision of *Metopus striatus* but this species too, was grown in culture. The complete morphological variation of cultured forms, plus that of wild specimens, was explained in Esteban *et al.* (1995) and accompanied by photographic evidence of living organisms. The fourteen overlapping morphotypes (synonyms) described in the literature were all observed in their cultures and, therefore, the reduction of fourteen nominal species to one species was clearly justified. Dragesco fails to show a photograph of a living cell, making any future comparison more difficult.

It is currently being shown (Fenchel 1993, Finlay *et al.* 1996a, b, Fenchel *et al.* 1997) that the global number of ciliate species may not be as great as once thought, although some new species are undoubtedly awaiting discovery. If the descriptions of these are based on "morphometry" and if

§Author for correspondence.

Reçu le 8 juillet 1997 ; accepté après révision le 27 août 1997.
Received 8 July 1997 ; accepted in revised form 27 August 1997.

the Normal distribution is to be used as a model for calculating some relevant statistics, it would be both appropriate and useful if the sample sizes were adequate for the intended purpose and if specimens were retrieved both from the wild and (where possible) from laboratory cultures.

References

Corliss J. O. 1979. *The Ciliated Protozoa. Characterization, Classification, and Guide to the Literature.* 2nd edition. Pergamon Press. Oxford, New York. 455 pp.

Dragesco J. 1996. Infraciliature et morphométrie de cinq espèces de ciliés mésopsammiques méditerranéens. *Cahiers de Biologie Marine,* **37**: 261-293.

Esteban G., Fenchel T. & Finlay B. 1995. Diversity of free-living morphospecies in the ciliate genus *Metopus. Archiv für Protistenkunde,* **146**: 137-164.

Fenchel T. 1993. There are more small than large species? *Oikos,* **68** : 375-378.

Fenchel T., Esteban G. F. & Finlay B. J. 1997. Local versus global diversity of microorganisms: "cryptic diversity" of ciliated protozoa. *Oikos* **80**: 220-225.

Finlay B. J., Corliss J. O., Esteban G. & Fenchel T. 1996a. Biodiversity at the microbial level: the number of free-living ciliates in the biosphere. *The Quarterly Review of Biology,* **71**: 221-237.

Finlay B. J., Esteban G. F. & Fenchel T. 1996b. Global diversity and body size. *Nature,* **383**: 132-133.