

## CRYPTOBIA SP. FROM THE GILLS OF THE GILT HEAD SEA BREAM *SPARUS AURATA*

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A flagellate in the genus *Cryptobia* has been implicated in mortalities of gilt head sea bream reared in southern France. Fish (4-5 g) were reared during the winter 1987 in concrete tanks receiving salt water from a lagoon. Chronic mortalities (0.2 to 0.5 % per day) occurred during March and April 1987 and total losses reached 7 % before the parasite was eradicated.

Parasitized gills were observed using scanning electron microscopy (JEOL JSM 35 microscope), after fixation with osmium tetroxide, drying to the critical point with CO<sub>2</sub> and coating with gold-palladium. Heavy infestation of the gills with the flagellate was evident (fig. 1, 2, 3 and 4). No gross lesions of the gills were seen. Parasites were attached to the gill filaments by the posterior flagellum (fig. 5), producing focal erosion of the gill epithelium.

Eradication of the parasite was performed by lowering the water salinity of the tank to 0 ‰ for 50 min, then gradually increasing to 35 ‰ two hours later. This daily treatment was repeated three times (day 1, 3 and 5) before chronic mortalities stopped. One week after treatment, parasite free fish were placed in floating cages.

Flagellates may affect freshwater and marine fishes (Paperna and Zwerner, 1976; Becker, 1977). Among them, several are ectoparasitic and proliferate on the gill surface. From the S.E.M. observations the parasite of gilt head sea bream gills, which bears two large flagella emerging from the flagellar pocket (fig. 3) with a posterior flagellum adhering to the host, presumably belongs to the genus *Cryptobia* (Becker, 1977; Vicker

man, 1977; Brugerolle et al., 1979). In spite of a morphological similarity between the genera *Cryptobia* and *Trypanoplasma*, this parasite should be distinguished from the latter because we failed to show any parasitaemia after examination of blood smears of infected animals. The specific branchial localization is typical of *Cryptobia* (Bureson and Sypek, 1981) and more precisely resembles *Cryptobia branchialis* (Lom, 1980) isolated from carp, *Cyprinus carpio*. However, it differs from this species by its shape and its inability to survive in fresh water. A more complete study using TEM (transmission electron microscope) is required to further characterize this species.

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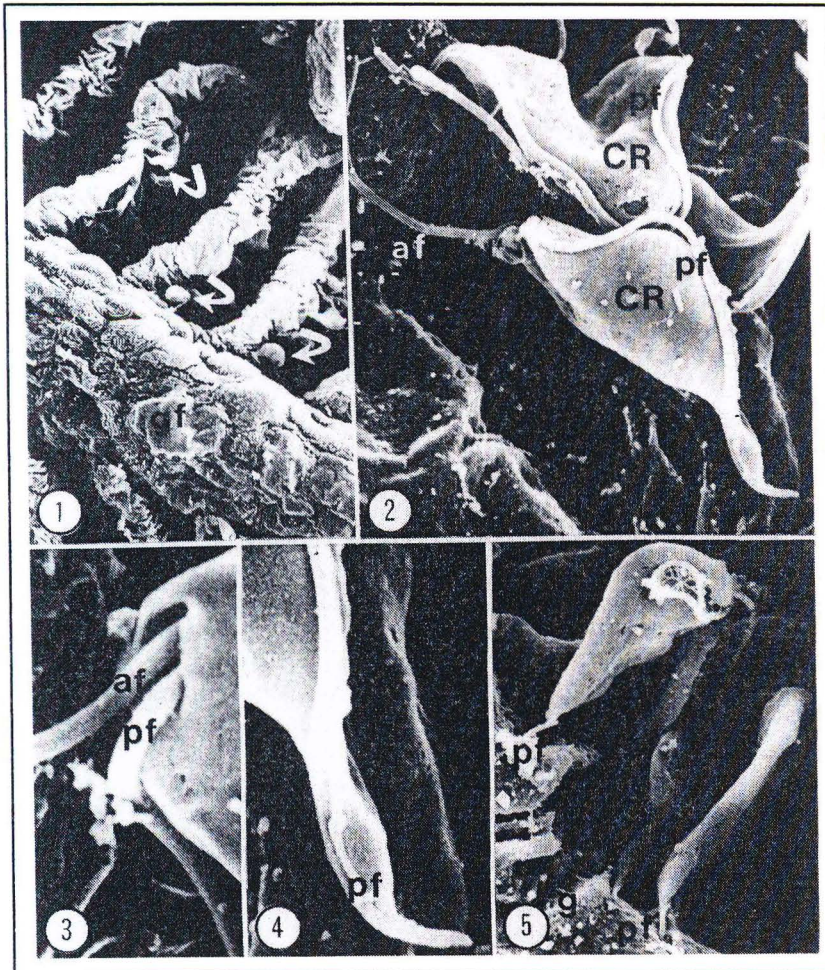


Fig. 1: Several *Cryptobia* sp. (arrows) on gill filaments (gf) of *Sparus aurata* ( $\times 1500$ ).

Fig. 2: *Cryptobia* sp. (CR) showing anterior flagellum (af) and posterior flagellum (pf) ( $\times 11200$ ).

Fig. 3: Anterior part of a *Cryptobia* sp.: anterior (af) and posterior flagella (pf) exit from the flagellar pocket ( $\times 34000$ ).

Fig. 4: End of the posterior flagellum (pf).

Fig. 5: Attachment of *Cryptobia* sp. on gills (g) by the end of posterior flagellum (pf) ( $\times 8000$ ).

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