

A biochemical research on *Aristeomorpha foliacea* (Risso)

by

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A lengthy biochemical research on *Aristeomorpha foliacea* (Risso) was carried out over a yearly cycle, specimens being collected weekly in the Ligurian Sea. As is known, this species is located along the continental shelf between 200 and 500 m in the Tyrrhenian Sea, in the Straits of Sicily and the Algiers-Provencal Basin between 300 and 800 m, and in the Atlantic between 500 and 1500 m; it has also been found in the South Adriatic, the Gulf of Taranto, and off the Australian and New Zealand coasts. For this reason its habitat belongs to the archibenthonic area of warm temperate zones, in pure muds below Murray's Mud Line [LAGARDÈRE].

Adult specimens were classified as to sex and measured, the biometrical data being elaborated according to GAUSS. After removal of carapaces and appendages, the various stages of gonadal development were determined, and the water, lipids and nitrogen contents analysed. From this analysis a moult phenomenon was clearly discernible, with a proecdysis in May-June, an ecdysis in August, and a postecdysis in September-October, followed by an intermoult. Males enter in ecdysis about a month before females.

In general, water content is higher in males, lipids, on the contrary, are lower with the exception of October-November when they are more or less the same in both sexes.

The female gonad starts to mature in June-July, reaching full maturity before November, after which the reproductive cycle can be considered as concluded.

A comprehensive assessment of all the data, together with the fact that the largest concentration of *Aristeomorpha foliacea* occurs in the central part of the intermediate strata of Mediterranean water (*) leads us to conclude that the prevailing low uniform temperatures, as well as other conditions, delay the moult either directly or indirectly (i.e. inactivation of organ Y, or tissue torpor to the stimulus of MIH). The moult starts in May-June, months in which the particular photosensibility of the animal is probably stimulated by the insolation that at this time attains its maximum intensity and duration, especially on wavelengths of 480/490 m μ which, as is known, have maximum sea penetration.

When considering the foregoing, the anatomical and physiological organization of the crustacean's eye should not be overlooked.

The time-lag in the two sexes recalls the fact that in Peneides with a closed thelycum copulation is possible only between hard-shelled males and soft-shelled females.

* *Aristeus antennatus*, on the other hand, finds its optimum lower than *Aristeomorpha foliacea*, towards the layer of transition [GHIDALIA & BOURGOIS].

