branded canals alongside the main gut; uterine glands few, generally but two, or lacking.

Eurylepta maculosa Verrill 1893

Elliptical or oblong, thin, changeable, with thin undulated margin, 10-12 mm. long, tentacles long, bluntly pointed, with eyes on the lower halves of their anterior faces, mottled brown or purplish brown on a pale yellowish or flesh ground, main gut with about 3 pairs of lateral branches. Vicinity of Woods Hole, rare, on piles, in mud, among algae. Figure in Verrill 1893.

A good specimen of this species, which has not been seen since Verrill's day, is needed before its anatomy can be thoroughly understood; it is not certain that it really belongs in the genus *Eurylepta*. It is easily known from all other polyclads of the region in question by the pair of tentacles at the anterior margin.

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SOME FURTHER EXPERIMENTS ON THE RELATION OF THE EXTERNAL ENVIRONMENT TO THE SPERMATOGENETIC CYCLE OF *FUNDULUS HETEROCLITUS*

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It has been shown (Burger 1939a, Matthews 1939) that spermatogenesis in *Fundulus* can be precociously induced by a rise in temperature. It is of interest to examine whether or not the testicular involution which follows the breeding season can be effected by temperature. Previously, it was demonstrated (Burger 1939) that light plays no role in gonadal involution.

Fundulus were captured on June 27 and confined to laboratory aquaria. The fish at this time are at the peak of sexual development.

Gametes can be stripped easily from both sexes. The males show the brilliant yellow coloration characteristic of the breeding condition.

Two groups of 35 adult males each were kept in running sea water. Up until July 27 the temperature for one group (controls) varied between 11° and 17°C., usually being below 15°C. For the other group (experimentals), due to the cooperation of Dr. W. H. Cole, the temperature was thermostatically regulated between 17° and 19°C. Between July 27 and August 8 the temperature for both groups rose, the variations falling between 14°-19°C. for the controls, and 19°-27°C. for the experimentals.

The results plainly indicated that testicular involution is accelerated by higher temperatures and retarded by lower temperatures. By July 27 a clear-cut difference was present in the testicular state of the controls and experimentals. In both cases the volume of the testis was near that of the breeding fish, although it was less for the experimentals. In the control fish there was still a broad cortical zone of cells as yet untransformed into spermatozoa, while in the experimentals spermatogenesis was almost completed. By August 8, there still remained for the controls a small cortical zone of untransformed spermatocytes, etc. This zone was lacking in the experimentals where testicular involution was well underway. The controls were furthermore, more brightly yellow than were the experimental fish.

By August 8 the involution of the testes of the experimental fish was almost as advanced as that of the fish in nature. It is difficult to measure the temperatures to which fish in nature are subjected during the summer, since their migrations into fresh water with the tides provide considerable temperature variations. However, checks on their habitats indicated that ror most of the day the fish lived in water of between 19° and 29°C. This means that the fish in nature lived in slightly warmer water than did the experimental laboratory fish.

These results apparently show that the velocity of the testicular involution of *Fundulus* that occurs during the summer is effected by the temperature of the water. Water slightly colder (never more than 19°C.) than that experienced by fish in nature causes a retardation of the involution process. Whether or not involution could be suppressed for long periods by very cold water was not investigated.

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