Zoology Part LXVI: Report on the PTEROPODA. Third Part.-Anatomy. By Paul Pelseneer. Bound in Volume 23,1888.

dorsal hooks of *Notarchus* (which have become specialised into the hook-sacs of the Gymnosomata) would represent the modified remains of the primitive horny ring.

(iii.) *Salivary Glands.*—These organs in the Gymnosomata closely resemble the corresponding organs of the Aplysioid Tectibranchia; they are narrow and elongated, and extend, gradually diminishing in diameter, from the distal extremity to their termination in the buccal mass, without any separation into a proper glandular portion and a distinct duct.

(iv.) *Stomach.*—In the adult Gymnosomata this is unarmed. This absence of masticatory plates in the stomach is probably due to the exclusively carnivorous diet of the Gymnosomata. Indeed the most carnivorous of the Bulloidea (*e.g.*, *Doridium*) are also without gastric plates.

e. The Respiratory Organs.—The most primitive of the Gymnosomata (Pneumonodermatidæ) have a lateral gill (on the right side), the position and relations of which leave no doubt as to its homology with the gill of the Aplysioidea and of all the Tectibranchs (the posterior gill of *Pneumonoderma*, *Spongiobranchæa*, *Clionopsis*, and *Notobranchæa* being a new formation). This lateral gill, although simpler than that of the Aplysioidea, is analogous to it in its structure, for in *Pneumonoderma* it is also formed by the folding of a single lamella.

f. The Generative Organs.—The hermaphrodite genital gland of the Gymnosomata is arranged like that of all the Tectibranchs. The conformation of the genital duct in the Aplysioidea is exactly identical with that of the duct in the Gymnosomata, the accessory genital glands (albuminiparous and muciparous glands) and the receptaculum seminis being situated towards its extremity. The structure and position of the copulatory organ also are the same both in the Aplysioidea and the Gymnosomata.

g. The Nervous System.—There is almost absolute identity between the central nervous system of a Gymnosome (*e.g.*, *Spongiobranchæa*, Pl. V. fig. 3) and that of certain Aplysioidea, such as *Notarchus*[1] or *Dolabella* (Pl. V. fig. 2), and the central nervous system of other Aplysioidea only differs from that of the Gymnosomata in the elongation of the pleuro-visceral connectives and the displacement backwards of the visceral ganglia.

In the Gymnosomata and in all the Aplysioidea the cerebral ganglia are closely approximated on the dorsal aspect of the œsophagus; the pleural ganglia are close to the pedal ganglia, so that the cerebro-pleural connectives are almost as long as the cerebro-pedal, and the pleuro-pedal connectives scarcely exist. A long and slender sub-œsophageal cerebral commissure (subcerebral commissure of von Jhering) also exists in both groups.

[1] Vayssière, Recherches zoologiques et anatomiques sur les Mollusques Opistobranches du Golfe de Marseille, *loc. cit.*, pl. iv. figs. 94, 95.

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