

I regard this organ as corresponding to the conjoined subneural (or hypophysial) gland and dorsal tubercle of other Ascidians. In place of there being a branched tubular gland communicating by a single duct with the single ciliated opening of the dorsal tubercle, as in most Ascidians, or by a number of ducts with numerous secondary openings into the peribranchial cavity, as in *Ascidia mammillata*, there are in the present case a number of simple tubular glands each of which opens to the exterior by its own ciliated infundibulum.

Although this arrangement seems at first very different from that of a typical *Ascidia*, still there are intermediate forms known through which a passage can be traced. I described in 1882¹ in the case of *Cynthia irregularis* a dorsal tubercle where more than one opening was present, and since then Sluiter² has described a similar condition in *Ascidia canaliculata* and in *Styela cryptocarpa*, while in *Boltenia pachydermatina*, as several investigators have pointed out, the surface of the large dorsal tubercle is broken up by ridges into a number of openings. Then again in *Ascidia mammillata*, as described by Julin³ and by myself,⁴ in *Ascidia marioni* according to Roule,⁵ and in *Polycarpa sulcata* as shown by von Drasche,⁶ the subneural gland has a number of ducts which open separately to the exterior,⁷ thus leading to the present case, where each tubule of the gland has a separate ciliated opening on the surface of the dorsal tubercle.

Both on account of the comparative simplicity of this last arrangement, and also on account of its proximity to and direct connection with the free surface, the condition described above in this large *Ascidia* from Kerguelen is probably the nearest to the primitive condition of the organ; and it appears to indicate that the subneural gland and dorsal tubercle are derived from a group of simple tubular glands opening close together on the dorsal edge of the anterior end of the pharynx. Such an origin would tell equally against the recently expressed view⁸ that the dorsal tubercle was originally an organ for aerating the central nervous system, and against the former theories that it was the duct of a cephalic renal organ, or a buccal sense-organ, or a combination of the two;⁹ but would seem to support the opinion of Roule,¹⁰ that the subneural gland and dorsal tubercle are to be regarded merely as a more or less complicated mucous gland and its duct.

¹ This Report, Part I. p. 141, pl. xvi. fig. 12.

² *Natuurkund. Tijdschr. v. Nederl. Indië*, Dl. xlv. pp. 174 and 210, 1885.

³ *Archives de Biologie*, tom. ii. p. 214, 1881.

⁴ *Journ. Linn. Soc. Lond. (Zool.)*, vol. xvi. p. 530, 1882.

⁵ *Ann. Mus. Hist. Nat. Marseille (Zool.)*, tom. ii. p. 240, 1884.

⁶ *Denkschr. d. k. Akad. d. Wiss. Wien*, Bd. xlviii. p. 379, 1884.

⁷ The place of opening may be the peribranchial cavity (*Ascidia mammillata*), the branchial sac (*Ascidia marioni*), or the peritubercular area (*Polycarpa sulcata*).

⁸ Lillian Sheldon, *Quart. Journ. Micr. Sci.*, vol. xxviii. p. 131, 1887.

⁹ Herdman, *Proc. Biol. Soc. Liverpool*, vol. i. p. 22, 1887.

¹⁰ Roule, *op. cit.*, p. 102, 1884.