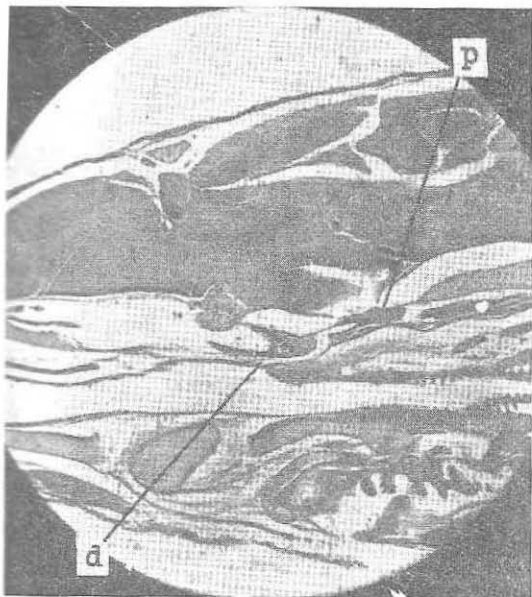


### Pituitary of *Chanos chanos* (Forskål)

It is well established by previous workers that the glandular component of the pituitary in teleosts is derived from the ectoderm of the buccal cavity. Haller<sup>1</sup>, Matthews<sup>2</sup>, and Kerr<sup>3</sup> have observed that the first appearance of the pituitary in all teleosts is as a solid ectodermal inpushing of the buccal epithelium, without any cellular differentiation, which extends below the brain and becomes stalked. This does not at any time possess a hypophyseal cavity.

Studies made on the fry and fingerlings of *Chanos chanos* show, however, a noteworthy peculiarity in this species. The earliest stage of *Chanos* available to me was 14 mm. in total length, and may be estimated as three to four weeks old<sup>4</sup>. The pituitary at this stage has an elongated appearance measuring about  $325 \mu \times 70 \mu \times 50 \mu$ . A blind diverticulum is seen starting from the roof of the mouth just in front of the beginning of the branchial arches, sloping posteriorly and terminating dorsally at the anterior end of the hypophysis. The cells from this blind end of the diverticulum proliferate to give rise to the glandular elements of the pituitary. To begin with, all the cells of the glandular component are basophilic, but later some of them become acidophilic or even chromophobic in the various regions.



sagittal section of *Chanos* larva (14 mm.) showing the diverticulum from the buccal cavity connecting it with the pituitary

The point of interest is the connexion of the anterior end of the pituitary (photomicrograph, *p*) with the buccal cavity by means of the diverticulum (*d*). This connexion with the buccal cavity is retained until a comparatively late stage in the life of the fish, but seems to disappear in fingerlings of nearly 3 mm. length. Although a continuous passage from the mouth to the pituitary is not apparent in the later stages, vestiges of the connexion persist close to the hypophysis even in fish measuring 200 mm. in total length. In longer fish, however, the remains of the diverticulum no longer show a well-defined cellular epithelial lining but only a sheet of connective tissue. When the larva grows to about 53 mm. in length, the anterior lobe of the hypophysis develops cavities by the outpushing of the surface of the diverticulum. These hypophyseal cavities appear to be derived from the lumen of the diverticulum, which itself is a continuation of the buccal cavity.

Previous accounts of the development of the pituitary in teleosts have shown that the embryonal connexion of the pituitary with the buccal epithelium disappears immediately after hatching; for example, in *Salmo trutta*, *Clupea harengus* and *Salvelinus willughbyii*<sup>2</sup>. The mode of origin of the cavities in the anterior lobe of the pituitary in these is not clearly known.

Details of this work will be submitted for publication elsewhere. My thanks are due to Dr. N. K. Panikkar, chief research officer, Central Marine Fisheries Station, for his help in the preparation of this note.

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<sup>1</sup> Haller, B., *Morph. Jahrb.*, 25 (1896).

<sup>2</sup> Matthews, S. A., *Biol. Bull.*, 73 (1937).

<sup>3</sup> Kerr, T., *Proc. Roy. Soc. Edin.*, 60 (1940).

<sup>4</sup> Schuster, W. H., Dept. van Landbouw en visserij., Pub. No. 2, van de Ouderafdeling Binnenvisserij (1949).