

**A NOTE ON A HERMAPHRODITIC GONAD IN THE INDIAN
MACKEREL *RASTRELLIGER CANAGURTA* (CUVIER)**

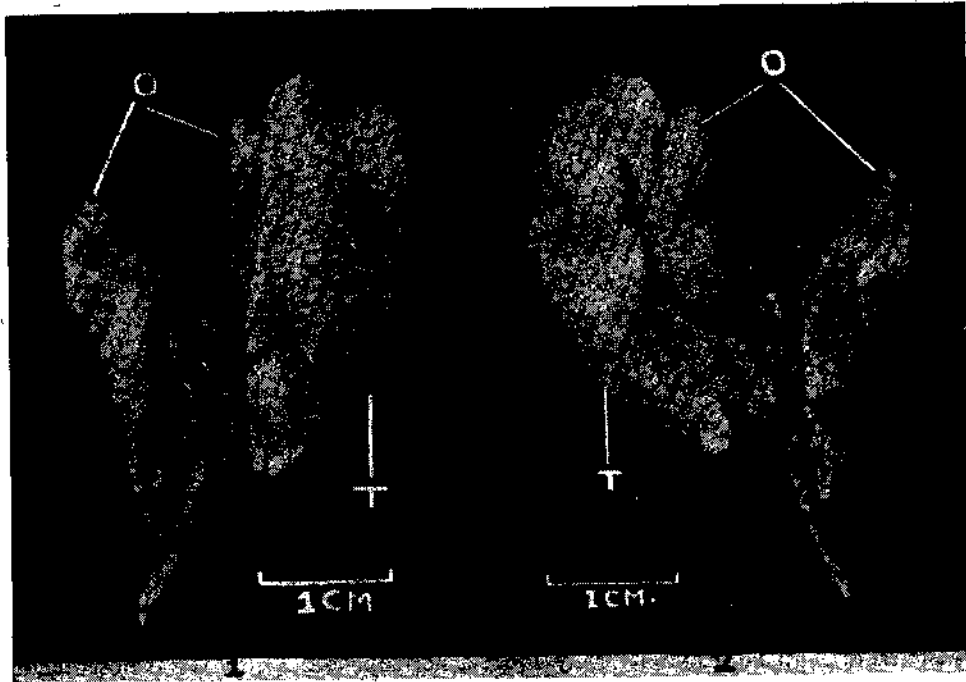
WHILE examining a sample of mackerel brought from Ullal, a fishing village five miles from Mangalore, on 1st May 1961, a hermaphroditic gonad was observed in one specimen. The fish measured 221 mm. in total length and was normal to all outward appearance. Internally also, apart from this hermaphroditic gonad, no other abnormalities were noticed. Parasitic infection was not seen in the body cavity.

The first record of the occurrence of hermaphroditism in the Indian Mackerel was made by Prabhu and Antony Raja from Karwar in 1958. As the gonad in the present case differed considerably from the one previously described, a detailed account is presented in this note. In the Karwar specimen the left gonad was a complete ovary and the right gonad, a complete testis. In the present case, the right gonad was an ovo-testis and the left gonad, a complete ovary.

The photographs of the dorsal and ventral views of the gonad are shown in Figs. 1 and 2 respectively.

Right gonad (Ovo-testis)		Left gonad (Ovary)			
Ovarian portion		Testis portion		Length	Breadth
Length mm.	Breadth mm.	Length mm.	Breadth mm.	mm.	mm.
26	6	26	14	28	9

The ovarian portion of the ovo-testis was only slightly asymmetrical with the complete ovary on the left and it was directly connected with oviduct and blood



FIGS. 1 & 2. Hermaphroditic gonad of the mackerel, dorsal and ventral view respectively

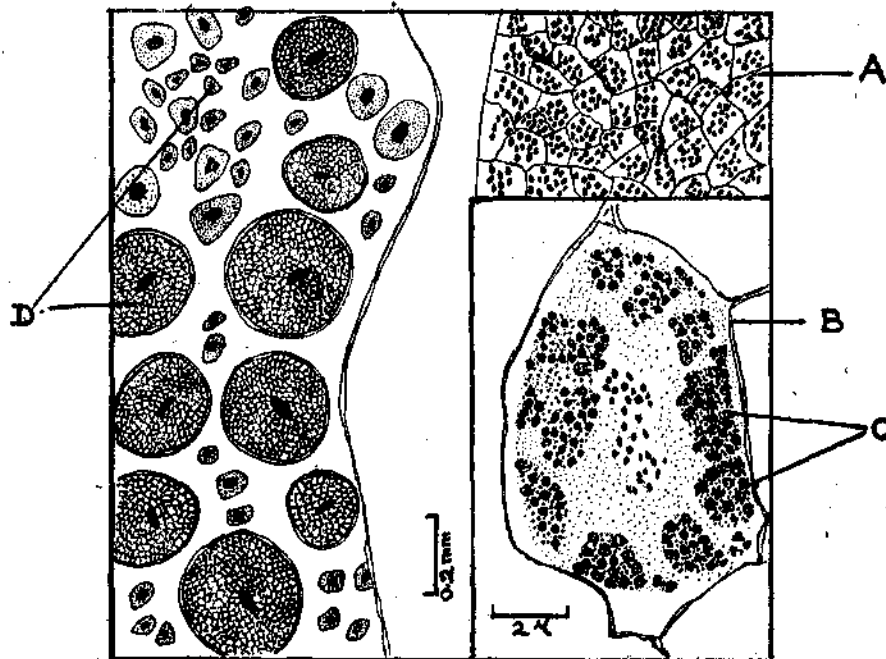


FIG. 3. C. S. of ovarian and testicular portions of the hermaphrodite gonad. Camera lucida drawing. A. Spermato gonia in their cysts. B. Cyst wall. C. Secondary spermato-gonia. D. Ova in the ovarian portion.

vessels. The testis portion was connected by connective tissue with the ovary portion in the ovo-testis.

Blood supply for the testis portion was through the same blood vessels that supplied the ovary portion, as can be seen from Fig. 2. Inside the connective tissue neither ova nor spermatogonia were observed.

The ova diameter ranged from 0.15 to 0.38 mm. and a number of transparent ova of smaller size ranges were present in both right and left gonads, indicating that the ovary was in stage III of maturity. A study of the sections of the testicular portion, revealed the presence of a number of spermatogonia in their cysts. Further examination of a cyst under oil-immersion, showed, that the primary spermatogonia have divided into secondary spermatogonia and only a few spermatids were present in the centre of the cyst. The cyst wall was intact. A testis in this condition corresponds to stage III described by Gokhale. A camera-lucida drawing of the sections of ovarian and testicular portions is given in Fig. 3.

As the ovary portion of the ovo-testis was only slightly asymmetrical with the left gonad which was a complete ovary, and as it was connected directly with the oviduct and blood vessels, it seems more obvious that the testis was an overgrowth on an ovary which would have been normal otherwise.

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REFERENCES

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GOKHALE, S. V. 1957. *Indian J. Fish.*, 6(1) : 92-112.