

SCIENTIFIC NOTES

HETEROTOPIC THYROID IN THE FRESH WATER TELEOST *MYSTUS VITTATUS* (BLOCH)

KAMLESHWAR PANDEY and MARKANDEY MISRA

Department of Zoology,
University of Gorakhpur,
Gorakhpur 273 001, U. P. (India)

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Kamleshwar Pandey and Markandey Misra (1981) Heterotopic thyroid in the fresh water teleost *Mystus vittatus* (Bloch). *Bull. Inst. Zool., Academia Sinica* 20(2): 99-101. Heterotopic thyroid with its particular association to the fish testis is rarely placed on record. Excellent thyroid follicles have been observed in both inter and intra lobular spaces of *Mystus vittatus*. However, they do not seem to interfere normal functioning of the testis in this fish. Size difference between intra and interlobular thyroid follicles is attributed to the limited space and cellular pressure in the testicular lobules.

Heterotopic thyroid in fishes has been recorded from a number of internal structures as kidney of *Barbus conchonus*⁽⁸⁾, pharyngeal and extra pharyngeal tissues of gold fish⁽⁵⁾. Olivereau⁽⁷⁾ has recorded the presence of thyroid follicles in the head kidney of *Typhlogarra widdowson*. Baker⁽¹⁾ named all such thyroid follicles which are present in regions other than the pharyngeal one as 'heterotopic' thyroid.

Generally, the thyroid is found either in diffused form over and around the ventral aorta and efferent branchials like *Clarias*⁽⁸⁾; *Poecilia formosa*⁽²⁾; *Chanos chanos*⁽¹⁰⁾; *Amphipnous cuchia*⁽⁴⁾; and *Mystus vittatus*⁽⁹⁾; or compact and encapsulated as in *Gymnorchus niloticus*⁽¹¹⁾; *Thynnus thynnus*⁽⁶⁾ and *Ophicephalus* and *Heteropneustes* species⁽³⁾.

One of the specimens of *Mystus vittatus* collected from Ramgarh lake exhibited scattered thyroid follicles in its testes. The testis at that time was fully mature. Thyroid follicles are seen in both inter and intra lobular spaces and it appears that the normal functioning of the testes is not being interfered by them "Fig. 1"

"Fig. 2".

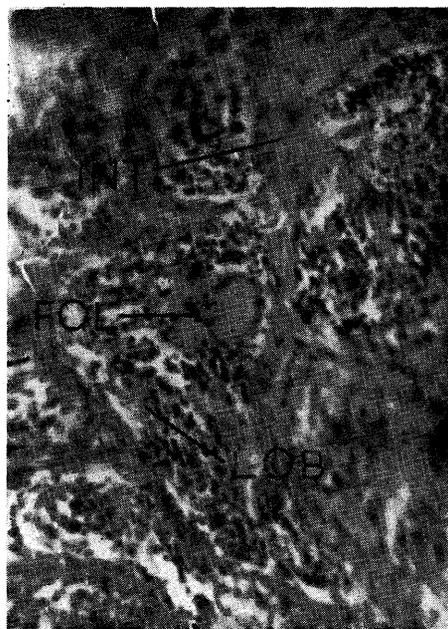


Fig. 1. Extra testicular thyroid follicles in *Mystus vittatus*. 450×

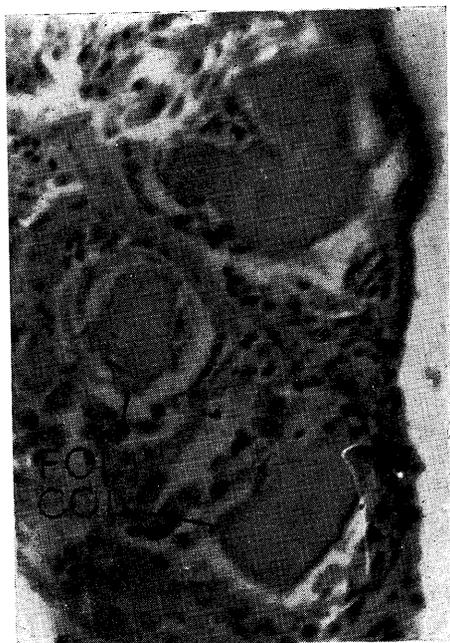


Fig. 2. Intra testicular thyroid follicles in *Mystus vittatus*. 450×
COL. Colloid; INT. interstitium;
FOL. thyroid follicles; LOB.
testicular lobule.

This is evidenced from the intralobular spermatogenesis which shows to contain various stages of germ cells and steroidogenic structures within the inter lobular spaces, seem in their normal state of activity. However, attached to the testis at its outer margin certain extratesticular thyroid follicles which are comparatively more in number were also present "Fig. 1." It may be that during development some of the thyroid tissues have been incorporated within the testis while others remain attached out side to it and thus have been displaced. Extra testicular thyroid follicles show clear and well marked follicular epithelium where as intratesticular ones does not show follicular epithelium of appreciable height and is almost obscure. Likewise, the diameter (66.83 μm) of extra testicular thyroid follicles is larger than the diameter (20.91 μm) of the intra testicular follicles. This, however, may be attributed to the cellular pressure and limited space within the testicular lobules. The colloid material contained in the

former follicles seems more homogenous and also in some of them colloid material appears granular.

The heterotopic thyroid tissue may be incorporated in other structures either during development or they may migrate from the pharyngeal region or from blood or from lymph born metastases cells Baker⁽¹⁾. The lesser number of thyroid follicles incorporated within the testes but larger number attached out side to it, points the possibility that this is mainly due to the migration of pharyngeal thyroid tissue and subsequent attachment to this region in *Mystus vittatus*.

The occurrence of both extra testicular and intra testicular thyroid follicles in *Mystus vittatus* is of significant interest. Such an instance in the fresh water Indian teleosts in general and in all probability *Mystus vittatus* in particular is the first report of its kind.

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存于淡水硬骨魚 *Mystus vittatus* (Bloch) 之異位甲狀腺

KAMLESHWAR PANDEY and MARKANDEY MISRA

異位甲狀腺，尤其異位至精巢者，在紀錄上甚少見。在 *Mystus vittatus* 淡水魚之精巢分葉與精巢組織中，發現到非常完美之甲狀腺組織，且似乎不影響正常之精巢功能。精巢組織及分葉中所發現之甲狀腺，其大小不同，係由於精巢組織空間及細胞壓力之不同而有所差異。