

demonstrated that androgen increases plasma volume but proportionately the cell mass is also increased to a greater degree at the same time. According to Alexanian *et al.*⁷ and Piliero *et al.*⁸ androgen acts on the bone marrow in an indirect way by stimulating the release of erythroproteins from the kidney in rats and support the observation of Orlic *et al.*⁹, Fried *et al.*³ and Van Dyke *et al.*¹⁰. In case of females oestrogen acts on the bone marrow in an indirect way by inhibiting the release of erythroproteins from the kidney. This is in accordance with Alexanian *et al.*⁷ Jepson and Lowenstein¹¹ demonstrated that oestrogen inhibits erythropoiesis at bone marrow level. Piliero *et al.*⁸ and Gordon¹² supported the above suggestion.

Thus if it is accepted that due to hormonal effect, the Hb concentration and other haematological data are low in the adult females then with the cessation of reproductive hormones or before maturation, the Hb, PCV and RBC counts should be the same in both sexes. But this does not take place even from the very beginning in two sexes. Hence the reason for the low values in females still remains unanswered, but in all probability in mature females it is due to hormones produced by reproductive organs.

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1. Burhoe, S. O., *J. Heredity*, 1940, 31, 445.
2. Natelson, *Am. J. Clin. Path.*, 1951, 21, 1153.
3. Fried, W. and Gurney, C. W., *J. Lab. Clin. Med.*, 1966, 67, 420.
4. Verwilghen *et al.*, *Brit. J. Haemato.*, 1966, 12, 712.
5. Delzoppo, R., *Clinica Medica Italiana*, 1937, 68, 113.
6. Gardner *et al.*, *Brit. J. Haemato.*, 1968, 14, 611.
7. Alexanian *et al.*, *J. Lab. Clin. Med.*, 1967, 70, 777.
8. Piliero *et al.*, *Ann. N.Y. Acad. Sci.*, 1968, 149, 336.
9. Orlic *et al.*, *J. Ultrastruct. Res.*, 1965, 13, 516.
10. Van Dyke *et al.*, *Blood*, 1966, 28, 535.
11. Jepson and Lowenstein, *Endocrinology*, 1967, 80, 430.
12. Gordon *et al.*, *Ann. N.Y. Acad. Sci.*, 1968, 149, 318.

ELASTIN NATURE OF THE INNER LINING OF THE STOMODAEUM AND PROCTODAEUM IN AMPHIPODS

THE presence of a relatively rigid layer which may act as a bulwark against the abrasive tendencies of ingested material is to be found in the fore-gut among many animals. And it has generally been

asserted that the lining of the fore-gut and hind-gut in malacostracan crustaceans at least is chitinous¹. However in a study of the digestive system of the amphipods *Talorchestia martensii* (Weber) and *Orchestia platensis* Krøyer (Talitridae), *Elasmopus pecteniscrus* (Bate) (Gammaridae) it has been found that the inner lining of the stomodaeum and proctodaeum is an elastin layer. This discovery is based on the histochemical tests enumerated in Table I.

It has been found that the inner lining of the fore-gut is laminated. One can notice the laminated nature clearly in the ventral pyloric chamber of the starved specimens (Fig. 1). In this region the



FIG. 1. Section of fore-gut of *Talorchestia martensii* showing elastin lining. Note the separated outer lamina (OL) and the PAS positive inner lamina (IL). The arrow shows the two lamina together.

two laminae (Fig. 1, OL, IL) lie separated in the lateral region. It was found that only the inner lamina (Fig. 1, IL) facing the lumen of the gut is strongly PAS positive (Saliva fast). It was also only this lamina that was positive to elastin tests. The tests 4-8 given in Table I are known to be appropriate for elastin. In the case of the proctodaeum it was found that the lining is unilaminar which gives positive reactions to all tests of elastin.

TABLE I
Tests for elastin

Stain	Reaction
Periodic acid-Schiff (PAS)	.. ++
PAS after saliva digestion	.. ++
Bromophenol blue	.. +
Paraldehyde-fuchsin	.. ++
Orcein (P ^H 1-2.4)	.. +
Verhoeff's reaction	.. +
Weigert's resorcin fuchsin	.. +
Luxol fast blue G in methanol	.. +
Sudan black B	.. -
Steedman's alcian blue	.. -
Alcian blue after permanganate oxidation	.. -

However the proctodael elastin layer is beset with longitudinal rows of minute spines whose chemical nature conforms to scleroproteins. The stomodael elastin layer possesses groups of bristles and long spines which by their interlocking arrangement form sieve-like mechanism at various places. There have been several histological and histochemical studies on amphipod gut²⁻⁵ but uptill now there was no suggestion as to the elastin nature of the internal lining.

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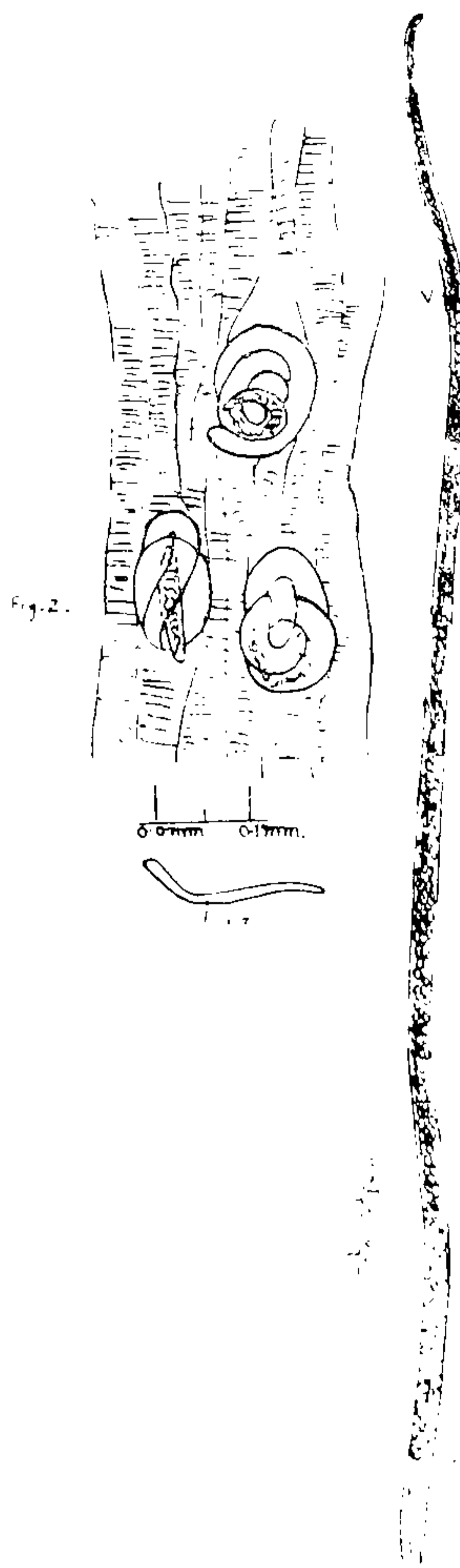
1. Van Weel, P. B., *Chemical Zoolozy*, Ed. Marcel Florkin/Bradley Scheer, V, Arthropods (A), 1970, p. 97.
2. Mabilot, S., *Archs. Zool. Exp. Gen.*, 1955, 92, 20.
3. Martin, A. L., *Proc. Zool. Soc. Lond.*, 1964, 143, (4), 525.
4. Schmitz, E., *Amer. Mid. Natur.*, 1967, 78 (1), 1.
5. Thiem, E., *Z. Morphol, u. Okol.*, 1942, 38, 63.

**TRICHINELLA SPIRALIS (OWEN, 1935)
IN BANDICOTA BENGALENSIS (GRAY)
IN BOMBAY**

Trichinella spiralis is responsible for trichinosis in man and animals particularly pig, rat, and domestic and wild carnivores. Though it is a common parasitic infection in many countries in Europe and America, the greatest incidence of its infection is reported from Poland and Arctic regions while the tropical countries are more or less free from it¹. The incidence of this nematode in India has not so far been reported from man nor from pigs in spite of surveys conducted by several authors²⁻⁶.

The first authentic record of *T. spiralis* in India was that by Maplestone and Bhaduri⁷ who detected the larvae in the diaphragm of a cat. This was

followed by its finding in a cat that died in the Zoological Garden in Bombay by Kalapesi and Rao⁸. The purpose of this paper is to report the occurrence of *T. spiralis* in *Bandicota bengalensis* in India.



FIGS. 1-3. Fig. 1. *Trichinella spiralis* adult female, v = vulva. Fig. 2. Larvae coiled in diaphragmatic muscle. Fig. 3. Larva from vagina.

Numerous adult females have been collected from the intestinal contents and scrapings of one out of