Cobalt is one of the essential and least toxic elements. However, it develops true polycythemia, hyperplasia of the bone marrow, reticulocytosis and increases blood volume[9]. Excessive accumulation of cobalt does not occur in any particular tissue or organs but the liver, kidney and bones usually carry highest concentrations of this element. It induces renal atrophy, tubular necrosis and fibroproliferation. The processes responsible for these lesions could account for disappearance of these enzymes from renal cortex through mechanisms, *i.e.* feed back regulation or competitive inhibition. However, enzyme reversal thus recorded after longer treatment does not reflect reversal of renal injury. Although exact mechanism is to be explored, certain generalizations could be made. Firstly cobalt plays an important role in biological redox processes. As free radical (during excess feeding) it might change microenvironment of the cell and its organelle. Finally depression in enzyme activities takes place through chemical reactions. *viz.* phosphorylation, adenylylation, ADP ribosylation, oxidation of thiol groups and also through the respective reverse reactions. The reversibility of modifying reactions can also be achieved by separate enzymes catalyzing the irreversible attachment and removal of the modifying group. However, after prolonged treatment, complete adaptation takes place at membrane level and their stabilization results in enzyme elevation. Although there may exist a separate mechanism of inhibition of each of these enzymes, common metabolic pathways presumably help in enzyme reversal. Universal existence of this concept even in metal toxicity, appears far from being acceptable, however, results from liver also support present observations[10]. The idea of this phenomenon being specific to essential elements only, is opposed by observations already made on mercury in the liver of a fresh water fish[11]. Nevertheless, degree of adaptation may depend on a number of factors *viz*, element, tissue, animal age and nutritional status etc.

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NEW SPECIES OF THE GENUS *SHINDEOBOTHRIUM*, SHINDE AND CHINCHOIKAR 1975 FROM *TRYGON* SP. AT RATNAGIRI.

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THE Genus *Shindeobothrium* was erected by Shinde and Chincholikar in 1975 with *S. indica* as the type species from *Trygon* sp. The present communication describes a new species of the genus.

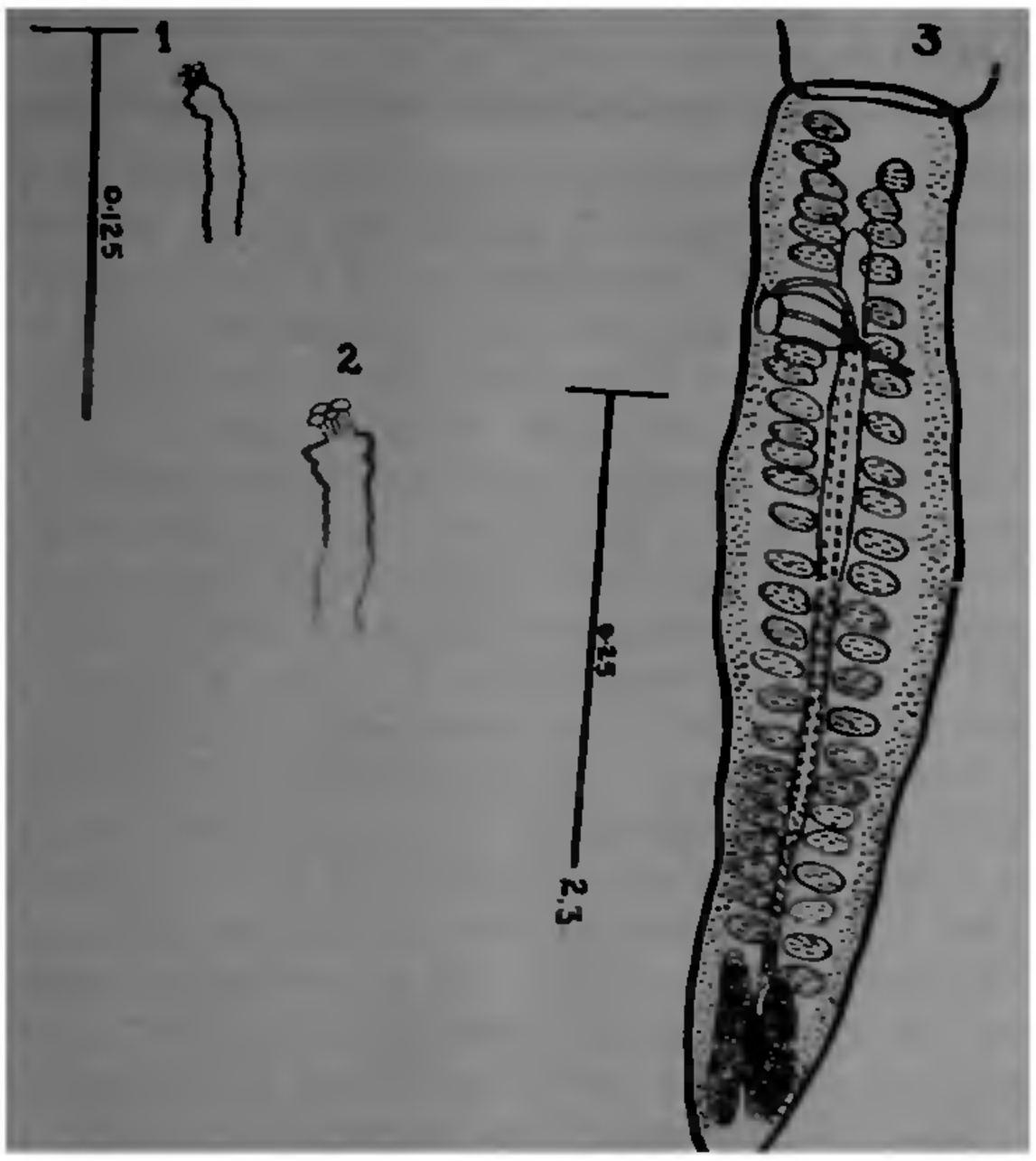
Four specimens were collected from the *Carcharias acutus*, fixed in 4% formalin and stained with Harri's haematoxylin. Drawings were made with the help of a Camera lucida and the measurements are in millimeters.

Description: S. carchariasi n.sp.

Worms measure 7 cm. in length, scolex with four bothridia, measuring 0.004–0.006 × 0.002–0.004 in diameter. Neck present, measuring 0.05 in length and 0.016 in its maximum width.

Mature segments longer than broad (0.54 × 0.12). Testes oval, in two rows, 10 in number, pre ovarian (0.022–0.025 × 0.012–0 013). Cirrus pouch oval, submarginal, at 1/4 from the anterior margin of the segment (0 038 × 0.024). Cirrus thin, straight, unarmed (0.038 × 0.001). Vas deferens runs slightly posterior (0 034 × 0.001). Genital pores irregularly alternate, submarginal and oval.

Ovary 'H' shaped, situtated at 1/6 of the segment from anterior margin and measure 0.07–0.009 × 0.003. Vagina anterior to cirrus pouch, elongated, thin tube, runs trasversely, and measures 0.42 × 0.003. Genital pores oval, submarginal, irregularly alternate and measures (0.019 × 0.01). Ootype oval, small (0 038 × 0.012). Uterus elongated thin tube, up to ante-



Figures 1 & 2. *Shindeobothrium carchariasi* n.sp. **1.** Scolex, **2.** Mature segment.

rior margin of the segment and measures (0.41×0.007–0.015). Vitellaria granular, corticular and in thin strips.

Diagnosis:

The present form differs from *S. indica* in the shape and size of the pseudo-scolex (quadrangular, sharp *vs.* dome shaped, long), size of neck (long *vs.* short), number of testes (50 *vs.* 17), shape of ovary ('H' shaped *vs.* 'U' shaped), position of genital pore (at 1/4 from anterior margin *vs.* 1/2 of lateral margin of segment). Hence it is assigned the status of a new species and named *S. carchariasi* n.sp. after the generic name of the host.

Type species	*Shindeobothrium carchariasi* n.sp.
Host	Carcharias acutus Muller and Henle
Habitat	Intestine
Locality	Ratnagiri (West coast of India) M.S.

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