

## ON A NEW SPECIES OF NEOECHINORHYNCHUS PARASITIC ON *MUGIL CEPHALUS* LINN. FROM THE CHILKA LAKE.

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I recently examined the intestinal contents of a few fairly grown up specimens of *Mugil cephalus* Linn. from the Chilka Lake, Orissa, obtained from the local market. All the fishes examined were heavily infested with Acanthocephalan parasites. In one specimen the number of parasites was as high as 112. On examination these parasites proved to belong to a new species, which is described below under the name *Neoechinorhynchus chilkaensis*.

I take this opportunity of recording my sincere thanks to Dr. Bains Prashad, Director, Zoological Survey of India, Indian Museum, Calcutta, for the facilities for work; to Dr. Sunder Lal Hora, Assistant Superintendent, Zoological Survey of India, for the identification of the host and to Mr. M. N. Datta of the Zoological Survey of India for his valuable suggestions.

### ***Neoechinorhynchus chilkaensis*, sp. nov.**

The proboscis (fig. *a*), is globular in shape with a very short neck. It is covered with three rows of hooks, six in each row. The hooks of the anterior row are relatively much larger and stouter than those of the other rows. The proboscis sheath is a thin and single walled muscular sac attached to the base of the proboscis.

The nervous system consists of a single nerve ganglion with a few nerve fibres situated posteriorly within the wall of the proboscis sheath. These nerve fibres supply the body wall of the worm.

The body is lanceolate and cylindrical and devoid of spines. Its walls consist of a layer of cuticle outside, then the thick submucosa which is traversed by numerous canals and canaliculi which form the lacunar system (Verma and Datta, 1929)<sup>1</sup> which is followed by the transverse and longitudinal muscle fibres. The transverse canals of the lacunar system are very prominent giving the appearance to the body of pseudosegmentation.

In the body wall there are subcuticular nuclei 4-5 on the mid-dorsal side and 2 on the mid-ventral side of the worm.

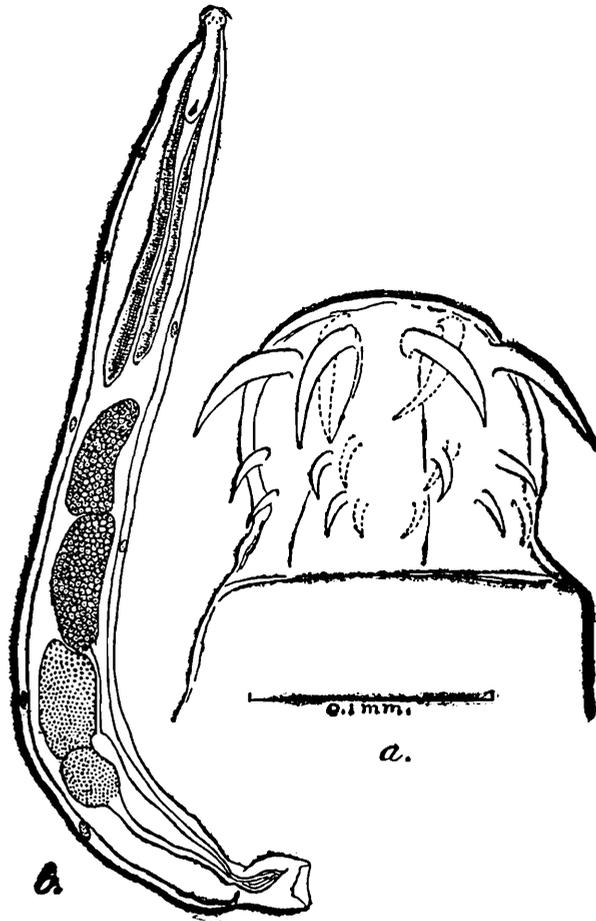
Male genitalia (fig. *b*), beginning just above the middle of the body, consist of a pair of ovoid testes, one behind the other, a pair of vasa efferentia, a vas deferens, a syncitial prostatic gland, a prostatic reservoir, a seminal vesicle, a muscular penis and a funnel-shaped bursa.

The vas efferens from each testis runs downwards and then swells a little near the angle formed by the posterior testis and the prostatic

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<sup>1</sup> Verma, S. C. and Datta, M. N., Acanthocephala from Northern India, I. A new genus of Acanthocephala from a Calcutta fish. *Ann. Trop. Med. Parasit.* XXII, pp. 483-498, (1929).

gland before it joins with its fellow of the opposite side to form the vas deferens. This is a peculiarity of the genus *Neoechinorhynchus*.



*Neoechinorhynchus chilkaensis* sp. nov., (a) Proboscis showing arrangement of hooks. (b) Male specimen showing the genitalia,  $\times 20$ .

The prostatic gland is a syncytial mass and empties its contents into the prostatic reservoir and the prostatic duct from the reservoir running for a short distance ends into the muscular penis situated at the top of the eversible bursa.

The seminal vesicle is of considerable size and is a thin-walled oval structure tapering downwards, finally opening into the base of the penis. The duct from the vas deferens also opens into the penis along with the duct of the seminal vesicle.

Female genitalia consist of a uterine bell, uterus, vagina and the vulva. The uterine bell is a thin-walled funnel-shaped organ retained in position by means of the genital ligament attached to the base of the proboscis sheath. A few guard cells are situated at the posterior end of the uterine bell whose function is to control the passage of mature ova. The uterus is a flabby tube which opens into the vagina. The vagina is a short and thick muscular tube which has two bands of strong muscles known as the vaginal sphincters, whose function is to allow the ova to pass in a single file. The vulva is the external thickened portion near the vaginal orifice and is situated at the ventral aspect of the worm near the posterior end.

*Measurements*.—Males 4.2—7.8 mm.  $\times$  0.20—1.03 mm.; Females 5.0—18.70 mm.  $\times$  0.31—1.08 mm.; Proboscis 0.121  $\times$  0.11 mm.; Proboscis hooks anterior row 0.07 mm.; middle row 0.03 mm.; basal row 0.027 mm.; Proboscis sheath 0.46  $\times$  0.14 mm.; lemnisci 1.85  $\times$  0.11 mm.; and 1.61  $\times$  0.11 mm.; Anterior testis 1.21  $\times$  0.53 mm.; Posterior testis 0.77  $\times$  0.59 mm.; Prostatic gland 1.69  $\times$  0.66 mm.; Prostatic reservoir 0.44  $\times$  0.26 mm.; Prostatic duct up to penis 1.03 mm.; vas deferens 1.14  $\times$  0.20 mm.; Penis 0.11  $\times$  0.4 mm.; Bursa 0.68  $\times$  0.57 mm.; Female genitalia, Uterine bell 0.11 mm.; Uterus 0.21 mm.; Vagina 0.06 mm.; Ova 0.023 mm.; (in the male specimen which is 7 mm. long the anterior end of the anterior testis is 3 mm. from the anterior end of the proboscis).

*Diagnosis*.—From the table of allied species of *Neoechinorhynchus* Datta (1936)<sup>1</sup> it is evident that the main points of difference between the closely related species of *Neoechinorhynchus* and the new species, are the size and shape of body of the male and female specimens, the size and position of the genitalia, the size of the hooks and the number of subcuticular nuclei.

In the new species the males are generally smaller than the females, the proboscis sheath is single layered, the hooks of the anterior row are much longer and stouter than those of the other rows, the central nervous system is situated at the posterior portion of the proboscis sheath, the prostatic gland is a single syncytial mass, subcuticular nuclei and lacunar system and specially the transverse canals are well developed.

*Host*.—*Mugil cephalus* Linn.

*Location*.—Small intestine.

*Locality*.—Chilka Lake, Orissa (Bought from Calcutta market).

Type specimens are deposited in the collections of the Zoological Survey of India, Indian Museum, Calcutta.

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<sup>1</sup> Datta, M. N., Helminth parasites of fishes from North India, with special reference to Acanthocephala. *Rec. Ind. Mus.*, XXXVIII, pp. 211-229, (1936).