

suggested to separate them as two independent genera *Acanthogyrus* Thapar, 1927 and *Acanthosentis* Verma et Datta, 1929 against synonymization of latter to the former by Dollfus & Golvan, provisionally until a restudy of them is made.

Golvan (1959) relegated the two genera, *Acanthogyrus* and *Acanthosentis* and included them as subgenera within *Acanthogyrus* based on the number of proboscis hooks 18 (3 circles of 6 hooks each) in *Acanthosentis* and 24 (3 circles of 8 hooks each) in *Acanthogyrus*. This arrangement has been accepted by the most systematists (Amin, 1985, 1987). Amin and Hendrix (1999) and Amin (2005) did not agree Golvan's (1994) elevating *Acanthosentis* back to generic status without justification and they retained the sub-generic classification of the genus *Acanthogyrus* Thapar, 1927. The present researcher follows it for the specimens collected from the intestine of *C. catla*.

4. Description

Specimens studied and measured (10 each of male and female worms)

Male worms

The male worms are shorter than the female worms. The body of the worms is elongated and club-shaped and measures 3.2 – 3.58 mm in total length and 0.51 – 0.87 mm in the greatest diameter acquired below the proboscis sheath or receptacle. The eversible and retractable proboscis or introvert (Plate I. fig.1) is sub globular in shape; it measures 0.11 mm x 0.09 mm. It is armed with three rows of eight hooks each. The hooks of first row to third row tend to decrease in size. They consist of a horizontal handle (root), posteriorly directed guard and re curved and tapering blade. The roots of the hooks embed in the wall of proboscis and the blades are free over the proboscis. There is a short unarmed neck behind the proboscis. The neck and proboscis on retraction enter into a closed sac-like muscular proboscis receptacle; its wall is simple and single layered. On either sides of proboscis, its basal inner hypodermis invaginates into the pseudocoelom as lemniscus; the two lemnisci hang free in the pseudocoelom for the greater part of their length. They are almost equal in length and extend up to a length of 0.032 – 0.045 mm from the anterior end

The trunk (meta-soma) consists of transverse rows of several spines up to mid length of the body or slightly beyond and one or two rows with only two spines at the posterior end. There are seven rows of anterior (collar) spines and 17-22 rows of posterior (trunk) spines with a hook-free zone (0.09 mm in length) in between. The spines are triangular with broad base embedded in the body wall and pointed end directed posteriorly. The number of spines in each row tends to decrease posteriorly; they measure 0.009 – 0.012 mm in length. At the posterior end, the worms are broadly rounded.

There are two distinct testes post-equatorially (Plate I-1;). They are slightly elongated and arranged in tandem in the ligament sac. The anterior testis measures 0.021 mm x 0.016 mm, while the posterior one measures 0.018 mm x 0.016 mm. From each testis arises a narrow sperm duct or vas

efferens; they run caudad and unite together to form vas deferens. It forms seminal vesicle prior to joining with the cement ducts. Posterior to the posterior testis is a single slightly elongated syncytial cement gland containing 3-4 nuclei. It measures 0.015 mm in length and 0.008 mm in width. A spherical cement reservoir measuring 0.006 mm in diameter lies behind the cement gland. From it, a pair of long cement ducts run posteriorly along with the vas deferens; they enter separately into the penis. The vas deferens and cement ducts are enclosed by genital sheath. The penis opens into the male copulatory bursa. Arising from the bursa and extending up to the cement reservoir is a long blind muscular sac called saefftigen's pouch. It measures 0.25 mm in length. When it contracts fluid is forced into the lacunar spaces of the bursa and it assists in its eversion.

Female worms

The female worms are longer and stouter than the male worms; they measure 4.57 – 8.6 mm in length and 0.76 – 1.24 mm in greatest diameter attained pre-equatorially below the proboscis receptacle. The proboscis (plate I-2; fig.1) measures 0.09 – 0.15 mm x 0.09 – 0.11 mm. The armature of proboscis is identical to those of male worms; the hooks of the first to third row measure 0.071 mm, 0.059 mm, and 0.048 mm in length respectively. The proboscis receptacle wall is made of single layer. Two lemnisci, running one on either side of the proboscis receptacle from the region between base of neck and collar extend beyond the proboscis receptacle; they measure 0.036 – 0.045 mm in length from the anterior end.

The trunk spination of female worms is similar to those of male worms. However, collar spines, trunk spines, their number of rows, and number of spines in rows are slightly more in female worms. The spines measure 0.01 – 0.013 mm in length. Posterior end of female worms is broadly rounded.

In mature female worms, the ovary is in the form of a number of ovarian balls suspended in the dorsal ligament sac. They measure 0.033 – 0.035 mm in diameter. The dorsal ligament sac encloses a muscular uterine bell, the latter collects mature eggs from the former. The uterine bell measuring 0.076 mm in length, in turn opens posteriorly into a long muscular uterus; it measures 0.29 – 0.39 mm in length and 0.009 – 0.01 mm in diameter. It enters posteriorly into vagina measuring 0.043 – 0.07 mm in length and 0.03 – 0.032 mm in diameter and opens out as eventually female genital pore. The uterus and vagina are enclosed in the ventral ligament sac.

The uterine bell has at its base a selector apparatus. It allows mature eggs to pass through into the uterus and vagina and out through the genital pore and returns immature eggs into the dorsal ligament sac for further maturation in it. After copulation, the cement gland secretion forms a post copulatory cap or plug in the female genital pore to prevent further insemination.

Records : *Acanthogyrus* (*Acanthogyrus*) *acanthogyrus* Thapar, 1927

