

Curvicaudatum fatimae N. Gen., N. Sp. (Nematoda: Spiruridae) from the Intestine of Rodent Host *Nesokia indica* in Gharu, Sindh

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Abstract. A new genus and species, in the family Spiruridae Oerley 1885 and subfamily Spirurinae Railliet 1915 is described, recovered from the small intestine of the rodent host, *Nesokia indica*, collected from the crop fields of Gharu, Sindh. The new genus is closer to the well known genus *Spirura* Blanchard 1840 but deviates by possessing the characteristics such as male caudal region typically curved in form of a hook-like structure, spicules two, dissimilar and unequal, vagina and vulva opening in the posterior most half of the body, eggs oval and elongated.

Key words: *Curvicaudatum fatimae* n.g., n.sp., rodent host, *Nesokia indica*, Gharu, Sindh.

INTRODUCTION

Previously, nematode parasites of *Nesokia indica* are not known from Pakistan. Here a new genus and species *Curvicaudatum fatimae* n.gen., n.sp. has been described from this rodent. The present specimens belong to the family Spiruridae and subfamily Spirurinae and compared with the existing genera of the family and described here.

The generic name refers to the curved position of the caudal region in male and the species name is in the honour of late parasitologist, Dr. Haseen Fatima of the Department of Zoology, University of Karachi.

MATERIAL AND METHODS

Fifty five short-tailed Indian mole rats, *Nesokia indica*, were captured live by digging out their burrows in the crop fields of Gharu, Sindh and brought to the Parasitology Laboratory. Nematodes were recovered from the intestine. The worms were fixed in alcohol-glycerine (1:1) mixture and preserved in lactophenol for future morphological studies. Camera lucida drawings were made and measurements were recorded length by width in millimeters.

DESCRIPTION

Curvicaudatum fatimae new genus, new species (Figs. 1-2)

Host	<i>Nesokia indica</i> (short-tailed Indian mole rats)
Location	Intestine.
Locality	Crop fields of Gharu, Sindh.
Number of hosts examined	55.
Number of hosts infected	1.
Number of specimens recovered	2 males and 2 females.

The description is based on 4 specimens (2 males and 2 females). The male specimen is 2.717-3.343 in length. Its body width ranges from 0.08991-0.13986. Head diameter is about 0.0199-0.0266. Cervical alae and lateral alae are totally absent. Anterior end is comparatively narrower than the posterior end of specimen. Caudal alae is well developed, originating from a distance of 2.184-2.564 to 2.634-3.110 from anterior end. Caudal papillae are well defined including 3-4 preanal, 1-2 postanal papillae. Two spicules are present, one is long and the other is short. Gubernaculum is 0.0233-0.0299 in length. Anal opening is 2.627-3.253 from anterior end. Tail is small, only 0.08991 long.

Female is about 1.748-1.998 in length and 0.049-0.073 wide. Head diameter is 0.0166. Cervical alae is 0.036-0.039 long, while the lateral

alae originating from the 0.033-0.046 and 0.233-0.229 from head. Caudal alae and caudal papillae are absent. Preanal vulva is located 1.448-1.688 from the anterior region. Anal opening is 1.518-1.848 far from head. Tail is 0.149-0.166 in length.

Fig. 1. *Curvicaudatum fatimae* n.gen. n. sp; a, anterior region of female; b, tail with anal opening; c, egg inside the body of female; d; caudal region of male; e, anterior region of male.

Family SPIRURIDAE Oerely 1885

Hind end of the male is spirally coiled, bears lateral alae and papillae. Lips present. The position of vulva in female is variable. Tail long and whole animal is spirally coiled. Spicules unequal and dissimilar.

Subfamily SPIRURINAE Railliet 1915

Mouth with or without definite lips, buccal capsule without ring-like or spiral thickenings. Cephalic and oesophageal regions not ornamented with cuticular plaques. Parasites of birds and mammals.

CURVICAUDATUM, new genus

Generic diagnosis

Very small, delicate nematodes, barely visible with naked eyes. Males comparatively larger in size than the females. Oral opening appears to be unarmed, cephalic cuticle simple. Buccal cavity little cuticularized, weakly developed. Below the circum oral region there lies a pair of lateral blackish, pointed, linear structures. Anterior posterior extremities bending laterally in females while the posterior extremity most portion of the body. The anterior cephalic region inflated with thin cuticle upto some distance, at the end of which is a pair of lateral papillae. The body cuticle appears to be smooth. Oesophagus divided, with anterior muscular part shorter than posterior glandular part.

Discussion

Present specimens were recovered from the intestine of the short-tailed Indian mole rat, *Nesokia indica*. They are placed in the family Spiruridae Oerely 1885 and subfamily Spirurinae Railliet 1915 as they possess the following characters: Posterior most end of the male is spirally coiled, bears lateral alae and papillae. Tail of female long and whole worm is spirally coiled. Spicules in male unequal and dissimilar. Buccal capsule without ring-like or spiral thickenings. Cephalic and oesophageal regions not ornamented with cuticular plaques.

The subfamily possess fourteen (14) genera namely:

1. *Travassospirura* Monning 1938 having mouth opening surrounded by a pentagonal chitinous ring.
2. *Spirura* Blanchard 1849 have buccal capsule unarmed and 4 pairs of preanal papillae.
3. *Spiruracerca* Erickson 1938 have preanal papillae of 10 pairs.
4. *Castronodus* Singh 1934 having armed buccal capsule with tooth like processes and 7 pairs of preanal papillae.
5. *Petrowoskpirura* Machulskii 1952, have 6 mouth lips, 6 head papillae and vulva in anterior 3rd of the body.

Fig. 2. *Curvicaudatum fatimae* Entire male specimen.

6. *Skrjabinocercina* Machulskii 1952, having 4 mouth lips, 4 head papillae and vulva in front of anus.
7. *Spirocerca* Railliet and Henry 1911, without definite lips but very large and prominent pulp of cephalic papillae.
8. *Chlamydothroca* Chandler 1954, having mouth opening with thick chitinous ring, elevated pseudolips and 4 cephalic papillae.
9. *Didelphonema* Wolfgang 1953, having mouth opening with complete chitinous ring, pseudolips and double cephalic papillae in four sets.
10. *Spiruroides* Cameron and Parnell 1933, mouth opening without lips or chitinous ring, buccal capsule with teeth.
11. *Habronema* Diesing 1861, have lips unarmed.
12. *Protospirura* Seurat 1941, mouth with large lips and papillae.
13. *Chitwoodspirura* Chabaud and Rousselot, 1956, mouth with well developed lips and papillae.
14. *Denticulospirura* Johnston and Mawson 1941, has caudal region different from the observed specimen.

The present specimens are closer to the genus

Spirura Blanchard 1849 in possessing similar characteristics but markedly differ in having a typical, fully curved posterior most region in the male specimens. Lips membranous, very thin and delicate. Below the circum oral region, there is a pair of lateral blackish, pointed linear structures. No chitinous ring and teeth are present in mouth opening.

No species of genus *Spirura* Blanchard 1849 has been reported previously from Pakistan. Only one species *S. narayani* (Mirza and Basir, 1938) from *Herpestes mungo* was reported from India which is totally different from the present specimens which have the posterior most region of male typically curved and form a hook-like appearance and is also from a different rodent host.

Differences in the caudal region of present male specimens and also the rudimentary lips of recovered specimen suggest to propose a new genus *Curvicaudatum* in the subfamily with a new species *fatimae*. *Nesokia indica* the short-tailed Indian mole rat is a new host record for the genus in Gharu, Sindh, Pakistan.

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