CHAPTER IV

Procamallanus chauhanensis n.sp.
PROCAMALLANUS Baylis, 1923

The genus *procamallanus* was established by Baylis (1923) for *P. laeviconchus* (Wedl, 1862) as its type. While creating the genus he also described a second new species from a siluroid fish in Africa. The third species of the genus, *P. parasiluri* was described by Fujita (1927) from Japan, again from the siluroid fish. Travassos (1928) added three more species to the genus, namely *P. inopinatus*, *P. iherengi* and *P. rarus* from siluroid fishes in Brazil. Baylis (1929) discovered another species, *P. xenopodis* from a batrachial (Toad) in Egypt.

Agrawal (1930) reported *P. mehrii* from an Indian siluroid fish. Tornquest (1931) prepared a monograph on Cucullanidae and Camallanidae, in which the author revise the genus and added one more species *P. sphaeroconchus* from a siluroid fish in Europe. Viz and Pereira (1934) recorded two species, *P. hilarii* and *P. amarali* from fish of Brazil. Pearse (1935) added another species, *P. kerri* from a Siamese fish basing his description on a single female. In the same year six more species were added to the genus; three of these *P. wrighti*, *P. fariasi* and *P. barroslomae* by Pereira from Brazil; *P. sigani* by Yamaguti from Japan;
P. fulvidraconis by Li from China, and P. planoratus by Kulkarni from India, all from siluroid fishes.

In the subsequent year, Pereira added one more species P. crearnsis from Brazil. Later on in 1937, P. slomei was described by Southwell and Krishner from batrachian (Toad) in South Africa. Johnston and Mawson (1940) reported another species. P. murreyensis from a fish of Australia. From Japan, Yamaguti (1941) described P. lonis in a fish. In 1946 another species was described by Annereaux and also gave a comprehensive key of all the known species of the genus.

Kung in 1948 added another species P. brevis to this genus from a batrachian host of Africa. The six species, of which five were new, P. heteropneustus, P. clarius, P. singhi, P. hyderabadensis, P. viviparus and procammallanus sp. were described by Ali (1954) from fishes in Hyderabad (India). Thus, there are altogether 30 species of the genus described so far, majority of which are reported from fishes, while only three species are described from batrachians (Toad) host.

On the basis of differences in the characters of the spicules Ali (1957) divided this genus into

**Procamallanus chauhanensis** s. sp.
(Plate 1 Fig.1,2; Plate 2 Fig.3,4; Plate 3 Fig. 5,6,7)

The present worm is a common parasite of the siluroid fish *Mystus seenghala* in Vindhya region. It was obtained from the stomach of the fishes on several occasions. They were found attached to the wall of the stomach and had to be detached carefully by means of forceps.

The fresh and living worms appears to be reddish in colour. It is a common feature to the species collected here as well as those described by previous authors. These are the thinnest worm recovered by the author sofar. The body of the worm is of almost uniform thickness with slightly attenuated extremities,
the head end being truncated and the tail end pointed in both the sexes. The female is longer than the male. The length of body varies from 3.05 - 3.15 mm. in male and 5.58 - 6.02 mm. in the female. These worms are very thin, their width not exceeding 0.076 in male and 0.125 mm. in the female. The cuticle is delicate, thin and finally transversely striated. The striations are 4-5 apart in the middle region of the body.

The excretory pore is very prominent and open on the ventral surface. It is situated at a distance of 0.22 mm. from the anterior end in the male and 0.26 mm. in the female. It leads into a prominent posterirly directed excretory duct.

The nerve ring surrounds the oesophagus near its anterior end. It is located at 0.067 - 0.069 mm. from the head end in male and 0.14 - 0.145 mm. in the female.

The number and position of the cephalic papillae is the same as found in other species of the genus. A pair of head with a laterally situated amphid between them. The mouth opens into buccal capsule which is roughly cylindrical, serves to distinguished the species. Its walls are thickest at the base and gradually decrease in thickness towards the apex. The
buccal capsule measures 0.05 - 0.06 mm. in length and 0.025 - 0.03 mm. in width in the male and 0.074 - 0.076 mm. in length and 0.039 - 0.04 mm. in width in the female.

The buccal capsule leads into the oesophagus which is composed of two portions an anterior short muscular and a posterior long glandular part. It measures 0.24 - 0.31 mm. and 0.35 - 0.42 mm. respectively in length in the male and 0.27 - 0.37 mm. and 0.37 - 0.40 mm. in female. The total length of the oesophagus is 0.60 - 0.74 mm. in male and 0.64 - 0.78 mm. in the female which forms 1/5th and 1/9th the body length in the two sexes respectively.

MALE CHARACTERS

(Plate 2 Fig.4, Plate 3 Fig.6,7)

The males are much smaller than the females. The tail is evenly tapering from the caudal extremity. The distance between the tip of the tail and cloacal opening is 0.068 - 0.070 mm. The tail is provided with caudal alae which are fairly well developed measuring 0.30 - 0.33 mm. in length. There are ten pairs of costiform caudal papillae, six pairs being preanal and four pairs postanal in position.
A pair of cuticular processes characteristic of the genus is present immediately behind the third pair of postanal papillae. The pair of postanal papillae lies isolated near the tip of the tail.

The testis lies in the anterior one third of the body and it extends almost to the base of the muscular portion of the oesophagus, where it reflexes to end in the posteriorly directed tip. At about the middle of the body, it leads into the vasdeferens of the same width. This is followed by the seminal vesicle which narrows to form short ejaculatory duct, opening into the cloaca.

The spicules are quite unequal and dissimilar in shape. It is noteworthy that they are heavily chitinized as compared with those of the previously described worms. The left spicules is 0.19 - 0.21 mm. and the right 0.43 - 0.50 mm. in length. The length of the two spicules are in the ratio of 3:1 the shorter being the left. The left spicules attains its maximum thickness in the middle and has a hook like tip and a broad anterior end. The large right spicule is of almost uniform diameter with finely pointed tip and a slightly expanded head.
FEMALE CHARACTERS

(Plate 1 Fig.2, Plate 2 Fig.3, Plate 3 Fig.5)

The females are thicker and twice longer than the males. The tail is short and bluntly pointed, measuring 0.037 mm. in length. It is about 1/160th of the body length.

The single filiform ovary approaches the posterior end of the oesophagus where it recurves to join the oviduct which leads into a seminal receptacle. The uterus runs posteriorly to open into the vagina, which is also connected with the blind, sac like opposite limb of the uterus.

The vagina is comparatively long about 2.83 - 3.2 mm. and runs in the straight line to open at the vulva. The vulva is quite prominent due to the presence of well developed lips. The worm liberates active motile larvae into the water.

HOST : Mystus seenghala
LOCATION : Stomach
LOCALITY : Lalpa Talab, Rewa
DISCUSSION

The worm is closely resembles to *Procamallanus fulvidraconis* Li, 1935 and *P. singhi* described previously, but differs markedly from the both of them in the size and proportion of the spicules. In *P. fulvidraconis* the spicules are extremely unequal while their length ratio in *P. singhi* is 5:1 and in the present new worm the ratio is 3:1.

The number of caudal papillae also varies in *P. singhi* and *P. chauhanensis*, there being eleven in the former and ten in the latter. The caudal alae are relatively shorter in *P. chauhanensis* than those present in *P. singhi*.

In *P. singhi* the tail of the female terminates in two short processes while in the new species under discussion its end in a bluntly rounded tip devoid of processes. The two worms also differ markedly in body measurements. Hence, the author, feels justified to erect a new species for the worm described there.

It is therefore, concluded that the species described here is a new to science. It is proposed to
name it as *P. chauhanensis* after honourable Prof. B.S. Chauhan former Director, Zoological Survey of India and Vice-Chancellor Saugar University and eminent helminthologist of India.

Professor W. A. Nizami
Collection
PLATE 1

Explanation of figures

*Procamallanus chauhanensis* n. sp.

**Fig. 1** End on view of head.

**Fig. 2** Tail region of female.
   Lateral view.
PLATE 2

Explanation of figures

_Procamallanus chauhanensis_ n. sp.

**Fig. 3** Anterior region of female.
Lateral view.

**Fig. 4** Head end of male.
Lateral view.
PLATE 3

Explanation of figures

_Procamallanus chauhanensis_ n. sp.

Fig. 5 Vulvar region of female.

Showing vulva, vagina and uterus.

Fig. 6 Tail region of male.

Ventral view.

Fig. 7 Spicules ventral view.