CHAPTER V

Camallanus thaparansis n.sp.
CAMALLANUS Railliet et Henry 1915

The genus Camallanus was created by Railliet et Henry, 1915 for the species *C. undulatus* having buccal capsule of two lateral valves, without chitinous buccal cavity behind the valve of trident shape. Later on about twenty new species from Amphibia and thirteen species from Reptilian hosts added to this genus by various workers from different part of world. In India in 1922 first Baylis et Daubney obtained a new species *C. kachugae* from *Kachuga smithii* in Punjab. Karve (1930) reported another new species of *C. baylisi* in *Rana tigrina*. Moorthy (1937) recorded a new species *C. sweeti* from different fishes host such as *ophiocephalus gachua, Lepidocephalichthys tharmalis, Barbus* and *Gombusia* from south India.

Chakravorty (1939) redescribed *C. anabantis* in number of fishes such as *O. punctalis, Rasbora doniconius* etc. *C. salmonae* was added by Chakravorty in 1942 from the host *Salmo* sp. in Kashmir. Khera (1954) reported three new species of genus camallanus from different hosts. He obtained *C. unispiculus* from the intestine of the fish *Mastacembelus armatus* (Lacep); *C. atridentus* from *ophiocephalus punctatus* (Bloch) and *C. ranae* from the intestine of frog *Rana cynophylectis*. 
At present the member of this genus were obtained from fishes, Amphibian and Reptilian hosts. The described fishes species are as: *C. melanocephalus* (Rud, 1819); *C. papillifer* (Molin, 1858); *C. tridentatus* (Drasche, 1884); *C. truncatus* (Rud, 1914); Syn of *C. lacustris* (Zoega); Yorke and Maplestone (1926); *C. ancylodirus*, ward et Magath, 1917; *C. oxycephalus* Ward et Magath, 1917; *C. cotti* Fujita, 1927; *C. kirandensis* Baylis 1928; *C. wolgensis* Levashov, 1929; *C. anabantis* pearse, 1933; *C. ophiocephali* Pearse, 1933; *C. trichogasterae* Pearse, 1933; *C. sweeti* Moorthy, 1937; *C. zacconis* Li, 1941; *C. salmonae* chakravorty, 1942; *C. carangis* olsen, 1954; *C. hypophthalmichthys* Achmerov, 1954; *C. atridentus* Khera, 1956 and *C. unispiculus* Khera, 1956.

The described Amphibian nematodes of the genus *Camallanus* are as *C. nigrescens* V. Linstow 1906; *C. baylisi* Karve, 1930; *C. multiruga* Walton, 1932; *C. pipientis* Walton, 1935; *C. Kaapstaadi* Southwell et Kirshner, 1937; *C. mazabukae* Kung, 1948; *C. multilineatus* Kung, 1948; and *C. ranae* Khera, 1956.

Nematodes of Reptilian host has been recorded as *C. microcephalus* (Dugardin, 1845) Syn. *C. Confusus* Railliet et Henry, 1915, *C. cyathocephalus*, *C.

Camallanus thaparensis n. sp.

(Plate 4 Fig.8,9; Plate 5 Fig.10,11)

The present new species is represented by fifteen specimens, ten females and five males, recovered from the intestine of the frog, Rana cynophlectis at Chakghat Rewa.

The worms are short medium size and slender. The cuticle is delicate, thin and finally striated. The mouth is surrounded by six papillae, two of them lateral and four sub medium in position. The buccal
capsule is formed by two buccal valves. These buccal valves are broader than long. They are more broad anteriorly than posterior. The buccal valves measures 0.126 mm. in length and 0.169 - 0.18 in maximum breadth in female and 0.091 mm. in length and 0.12 - 0.13 mm. in maximum breadth in the male worms, excluding the posterior ring.

The buccal valves are strongly chitinized with 9-12 ridges on each side. There are 12 chitinous ridges in females where as 9-12 in male worms. Occasionally a small chitinized tooth like projection is present between two of the longitudinal ridges. The buccal capsule is separated from the oesophagus by a chitinous ring, followed by a small cavity which is also lined with chitinous ring. The chitinous ring has a diameter of 0.10 - 0.15 mm. in female and 0.079 - 0.86 mm. in male worms.

The trident is well developed except for its middle prong which is very small, being hardly visible. The middle prong of the trident measures 0.02 - 0.023 mm. in length in female and 0.012 mm. in males whereas the lateral prongs are 0.055 - 0.065 mm. in female and 0.05 - 0.06 mm. in male worms.
The oesophagus is divided into two portions: the anterior, club shaped, muscular portion and the posterior, cylindrical, glandular portion. The anterior portion of the oesophagus, however, is longer than the posterior portion. The anterior portion of oesophagus measures 0.69 - 0.74 mm. in length in female and 0.44 - 0.48 mm. in male. The posterior portion of the oesophagus is 0.58 - 0.62 mm. in length in female and 0.34 - 0.38 mm. in male nematodes.

There are three prominent, oesophageo-intestinal valves separate the posterior portion of the oesophagus from the intestine. The intestine is as broad as the posterior portion of the oesophagus. The lumen of the intestine is wider than the oesophagus. The cells of the intestinal wall can not be clearly distinguished. The intestine leads into a very short and narrow rectum, measuring 0.076 mm. in length in female. The rectum opens directly to the exterior at the anus in female. In male worms, the rectum opens into a cloaca which also receives the genital duct. The three rectal gland cells present at the junction of the intestine and the rectum.

The nerve ring surrounds the anterior portion of the oesophagus at its narrowest region. It is
situated at the distance of 0.24 - 0.26 mm. from the anterior end in female and 0.18 - 0.19 mm. in male worms.

The lateral cervical papillae are minute, fine and pointed. They are situated in the region of the anterior portion of the oesophagus at the distance of 0.29 mm. from the anterior end in female and 0.26 mm. in male worms.

FEMALE CHARACTERS

(Plate 4 Fig.9; Plate 5 Fig.10)

The female worms are medium in size and moderately broads. They measures 24 - 25.9 mm. in length and 0.54 - 0.58 mm. in diameter. The worms are blunt at both ends. The diameter of the head at its anterior angles is 0.107 - 0.125 mm. The tail is short finger shaped although its tip is bluntly pointed and slightly bifid at tip. It measures 0.18 - 0.2 mm. in length.

The vulva is pre-equatorial. In the specimen measuring 25 mm. in length. It is situated at the distance of 9.58 mm. from the anterior end. The vulvar opening is an oval slit like opening situated at the
The narrow muscular vagina runs posteriorly, measuring 1.4 - 1.5 mm. in length.

The vagina gives off two distended uterine tubes on opposite side. The coils of posterior uterine tube extend 0.29 - 0.32 mm. in front of the posterior end. The posterior limb of the uterine tube ends blindly, there is no ovary. The anterior limb of uterine tube ends in single anterior ovary which is situated at the distance of 0.25 - 0.5 mm. behind the anterior end of the intestine. The embryos measuring 0.29 - 0.13 mm. in length, having a blunt anterior end and thin pointed, gradually tapering, posterior end.

MALE CHARACTERS

(Plate 4 Fig.8; Plate 5 Fig.11)

The male worms measuring 6.75 - 7 mm. in length and 0.157 - 0.185 mm. in diameter. The dorso-ventral diameter of the head at its anterior angles is 0.064 mm. The tail is short, conical and pointed. It is 0.14 mm. in length and has a bifid tip. The male has well developed, broad caudal alae, which extend for a length of 0.55 - 0.59 mm. They measure 0.13 mm. in maximum width and end just behind of the bifid tip.
There are fourteen pairs of caudal papillae, out of which seven pairs are pre-cloacal, two pairs cloacal, and five pairs post-cloacal papillae. The posterior most, fifth pair of post-cloacal papillae is sessile and isolated the fourth pair. The fourth pair of post cloacal papillae is also isolated but pedunculated. The remaining three anterior pedunculated post-cloacal papillae are close together in a group. The two cloacal pairs of papillae are small and pedunculated. Except for the posterior two pairs of pre-cloacal papillae which are close together and near the cloaca, the pre-cloacal papillae are isolated and distributed at regular intervals. The pre-cloacal papillae have knob-like terminations. All the caudal papillae are ventro-lateral except the two cloacal pairs which are lateral in position.

There are two unequal, feably and imperfectly chitinized spicules. The right spicules is longer than the left and stout. It measures 0.455 mm. in length. It is alate throughout its length. The distal top of the spicule is simple there is no lateral barb or prong. The left spicule is poorly chitinized and less stout than the right spicule. It is slender and measures 0.33 - 0.36 mm. in length. A single testis is situated near the anterior end of intestine.
DISCUSSION

Walter (1935) formulated the characters of the five species the genus Camallanus obtained from the Amphibian host and pointed out their differences from one another. The five species are: Camallanus microcephalus (Dujardin, 1845) Railliet et Henry, 1915; Camallanus nigrescens (V. Linstow, 1845) Railliet et Henry, 1915; Camallanus baylisi Karve, 1930; Camallanus multiruga Walton, 1932 and Camallanus pipientis Walton, 1935. Southwell and Krishner (1937) recorded another species, Camallanus kaapstaadi, from the Clawed toad, Xenopus laevis in South Africa. Subsequently Kung (1948) added two more species, Camallanus mazabakae and Camallanus multilincatus from bull frogs in South Africa and Rana catesbiana from North America respectively.

The new species is closely resemble to Camallanus baylisi. However, it differs from Camallanus baylisi in size of the body and dimensions of the various structures; in possessing a bifid female tail; in having narrower caudal alae; in the number of post-caudal papillae; in size and chitinized condition of the left spicules and in the absence of prongs or barbs on the spicule.
In view of the characters exhibited, the worm obtained from frog *Rana cynophylectis* and described above is considered to be a new species. It is proposed to name as *Camallanus thaparansis* after the name of Professor G.S. Thapar.
PLATE 4

Explanation of figures

*Camallanus thaparansi* n. sp.

**Fig. 8** Anterior region of male.

**Fig. 9** Vulvar region of female.
Explanation of figures

_Camallanus thaparansis_ n. sp.

**Fig. 10** Tail region of female.

**Fig. 11** Tail region of male.
PLATE 5

FIG. - 10

FIG. - 11