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A new species of tapeworm diplopylidium felisae (Diplopylidium, Beddard, 1913) from Felis Domesticus

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Abstract
In this study, the description of new species diplopylidium felisae n. sp. is reported from Felis domesticus at Udgir Dist. Latur. This species different from all known species of the genus, with charecters like scolex tapering anteriorly and broad posteriorly. Neck long, slightly broad anteriorly and narrow posteriorly. Mature segment longer than broad with double set of gonads, testes 50-55 in number, ovary bilobed located in center of segment. Oocyte small and rounded.

Keywords: tapeworm$_1$, diplopylidium$_2$, felis domesticus$_3$. Diplopylidium felisae n.sp$_4$

1. Introduction
The genus Diplopylidium is erected by beddard, 1913 with types species D. genettae from Genatta dongolana. Latter on the following species are added to this genus.
D. acanthotretum (parona, 1887) [2] witenberg, 1932 [3]., D. fabulosum meggitt, 1927 syn. of Joyeuxiella pasqualae Diamare, 1893) [5] Hughes, Baker and Dawson, 1941 [8]., D. monoophorum (Luhe, 1898) [10] Dollfus, 1951., D. fortunatum Meggitt, 1927 syn. Of joyeuxiella pasqualeli (Diamare, 1893) [5] Hughes, Baker and Dawson, 1941 [8], D. nolleri skrjabin,1924 syn. Dipylidium trinchesel of Lopez-Neyra and Munoz-Medina, 1921 [9], Lopez-Neyara, 1928, Joyeux and Baer, 1936 [7], Lopez-Neyra, 1944 [9] and Dendrolaphis tristispujatti, 1949, D. quinquecoronatum Lopez-Neyra at Munoz-Medina, 1921, Munoz-Medina, syn. of D. acanthotretum (parona, 1866) [2] Hughes, Baker and Dawson, 1941 [8], Lopez-Neyra, 1941 [9], Lopez-Neyra, 1944 [9], D. skrjbini popov, 1935 [19], D. trinchesii (Diamare, 1892) [6], probably cysticercus acanthotreta Parona, 1887 [2]; Parrot and Joyeux 1920 [7]; Lopez-Neyra and Munoz-Medina, 1921 and Lopez-Neyra, 1927 [9], D. triseriale (Luhe, 1898) [10] Lopez-Neyra, 1927 [9], D. zschokkei (Hungerbuhler, 1910) Hughes, Baker and Dawson, 1941 [8].
These 11 species are considered valid by S. Yamagutti, 1959 [22] and later on no species is added to this genus.

2. Material and Method
Nine specimens of the cestode parasite, were collected from the intestine of felis domesticus at Ashiv Tq. Ausa Dist. Latur (M.S) India. The cestode were fixed in 4% formalin. The parasites are stained with Harris haematolixin and prepared whole mount slides, for anatomical studies. The drawing are made with aid of camera lucida. All measurement in mm.

3. Description
Nine specimens, of the cestode parasites, were collected from the intestine of a cat, Felis domesticus, at Udgir, Dist. Latur, Maharashtra state, India,
The worms are medium in length and with thin musculature, immature, mature and gravid proglottids.
The scolex is medium in size, oval in shape, indistinctly marked off from the strobila, tapering anteriorly, broad posteriorly, longer than broad and measures 0.623 in length and 0.218 to 0.398 in breadth. The rostellum is medium in size, oval in shape, armed with 4 circles of hooks, first circle 20, second circle 20, third circle 14, fourth circle 12 and measure and 0.097 in length and 0.136 in breadth. The rostellar hooks are 66 in number, small and large, bipronged, medum in size and larger hooks measure 0.0534 in length and 0.004 in breadth. Smaller hooks 0.032 in length and 0.003 in breadth. The rostellar sac in medium in size, oval in shape, elongatadted, extending up to middle part of the suckers and measures 0.170 in length and 0.131 to 0.97 in breadth. The scolex bears four suckers, which are medium in size, oval in shape, overlapping on each other; arrange in too pairs, and measure 0.148 to 0.121 in length and 0.112 to 0.097 in breadth.
The neck is long, slightly broad anteriorly, narrow posteriorly and measures 0.631 in length and 0.316 to 0.243 in breadth.
The mature segments are longer than broad, almost three times longer than broad, slightly broader anteriorly, narrow posteriorly, with straight or slightly convex lateral margin, containing double set of reproductive organs and measure 0.824 in length and 0.315 to 0.436 in breadth. The testes are medium in size, round is shape, situated antero-posterior to ovary, more postovarian, few pretovarian, in the central medulla, in a single field, 50-55 (53) in number, scatreed throhghout the segment and measure 0.048 to 0.024 in diameter. The cirrus pouch on each side is large in size, cylindrical in shape, curved, situated at 1/4th from the anterior margin of segment, directed anteriorly and measures 0.200 to 0.215 in length and 0.029 to 0.048 in breadth. The cirus is thin tube, slighted convoluted, contened within the cirrus pouch and measures 0.191 to 0.200 in length and 0.009 to 0.014 in breadth. The vas deferens is short, slightiy convoluted, directed anteriorly and measuren0.048 in length and 0.009 in breadth.
The ovary on each side distinctly bilobed, lobes almost unequal in length, with few short, blunt, round acini, in the center of segment, surrounded by testes anteriorly and

posteriorly and measures 0.135 to 0.145 in length and 0.048 to 0.057 in breadth.

The vagina is a thin tube, start from the genital pore, run obliquity, takes a turn, run posteriorly, reaches and opens in to the ootype and measures 0.250 to 0 .291 in length and 0.009 to 0.014 in breadth. The ootype is small in size, round in shape, situated in between two ovarian lobes and measures 0.024 diameter.

The genital atrium on each side, medium in size, oval in shape, highly muscular, bilateral in position and measures 0.024 to 0.048 in length and 0.097 to 0.121 in breadth. The genital pores on each side are small in size, round in shape, bilateral in position, situated at 1/4th from anterior margin of the segments and measures 0.019 in length and 0.024 in breadth.

The gravid segments are longer than broad, almost three times longer than broad, with numerous eggs and measure 0.873 in length and 0.510 to 0.795 in breadth.

The egg oval in shape, with 6 hooks (i. e. onchospheres) and measure 0.803 to 0.856 in length and 0.677 to 0.714 in breadth.

The vitellaria gland is oval, compact, medium in size, post-ovarian, with irregular margin and measures 0.057 in length and 0.212-0.097 in breadth.

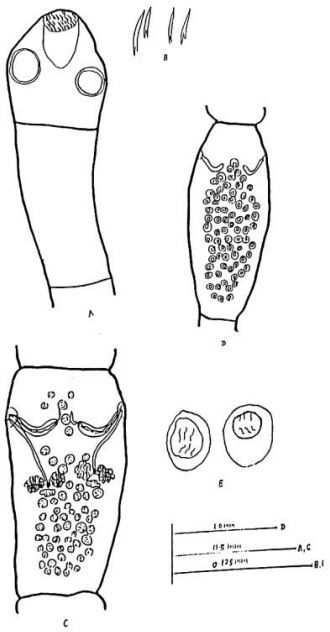

Fig 1: Diplopylidium felisae n.sp.

a. Scolex, B. Hooks, C. Mature segment, D. Gravid segment, E. Eggs.

4. Discussion and Result

After going through the litereture, the worm under discussion comes closer to Diphylodium trinchesii, D. fabulosum, D. triseriale and D. quinquecoronatum in some characters, but differs from them in many characters, which are as follows:

1. The present cestode, is having the rostellum medium in size, oval in shape, with 4 circles of hooks, with 66 hooks, in four rows, smaller and larger in size; testes 50-55 (53) in number, medium in size, round in shape, mostly postovarian, few anterior; cirrus pouch large in size, cylindrical in shape, at 1/4th from anterior margin of the segments, ovary distinctly bi-lobed, lobes almost unequal, with few short, blunt acini and the genital pores bilateral, small in size, round in shape, at 1/4th from the anterior margin of the segment.
2. The present tapeworm, differs from D. trinchesii which is having the rostellum with 78-85 hooks, in 4 circles; testes 41 in number, ovary bi-lobed, ovarian lobes spherical and the genital pores in first third or fourth of the segment margin.
3. The present worm differs from D. fabulosum which is having the rostellum with 4 circles of hooks, testes 36-39 in number, cirrus pouch 0.217 – 0.280 in length and 0.035 – 0.050 in breadth and the genital pores in first fourth of the segment margin.
4. The present from, differs from D. triseriale which is having the rostellum with 3 circles of hooks, neck absent, testes 39-44 in number, cirrus pouch 0.080 in length and 0.050 – 0.060 in breadth and the genital pores in first third or fourth of the segment margin.
5. The present cestode, differs from D. guinguecoronatum which is having the rostellum with 5 circles, rarely 4 circles of hooks; neck absent, testes 48-64 in number, cirrus pouch 0.150 in length and 0.050 in breadth and the genital pores in the first fourth or fifth of the segment margin.

5. Conclusion

The above noted character are enough, to erect a new species, for these worms and hence the name Diplopylidium felisae n. sp. is proposed, after the generic name of the host.

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