A New Species of *Circumoncobothrium maruliusae* Sp. Nov. From Freshwater Fish *Channa marulius* (Hamilton 1822) from Godavari Basin (M.S), India

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**Abstract:** The present communication deals with the description of a new species of genus *Circumoncobothrium maruliusae* Sp. Nov. from freshwater fish *Channa marulius* from Godavari basin provided new data on their morphology. The present form differ from the known species of the genus in the shape and size of the scolex, number of hooks and arrangement of rostellum, shape of segment, number of testes, position of cirrus pouch and arrangement of vitellaria.

**Key words:** *Circumoncobothrium maruliusae* Sp. Nov. · *Channa marulius* (Hamilton 1822) · Godavari Basin.

**INTRODUCTION**


**MATERIALS AND METHODS**

The present specimens were recovered from the intestine of the freshly killed freshwater fish *Channa marulius* (Hamilton 1822) from Godavari Basin during the period of June 2009-May 2011. Each fish was dissected and examined in all parts like fins, gills, scales and visceral organs under a microscope. Fishes were opened up dorso-ventrally and the internal organs examined. The entire digestive system was removed and placed in a Petri dish with physiological saline. Infection of each group of parasites was treated as follows: collected parasites were first relaxed and then fixed in hot 4% formalin and stain using Harris haematoxyline. Stained parasites were washed in distilled water, dehydrated in ascending grades of alcohol, cleared in xylene, mounted in D.P.X. Drawings were made using a camera Lucida.

**Description:** All the cestodes are long, consisting of scolex, immature, mature and gravid proglottids.
The present worm differs from \textit{C. aurangabadensis} [2] in having the scolex broad in the middle and narrow at both the ends, hooks 42 in numbers, presence of neck and testes 135-145 in numbers.

- The present tapeworm differs from \textit{C. raoi} [2] in having scolex broad in the middle and narrow at both the ends, hooks 46 in numbers, arranged in single circle, neck present, testes 210-215 in numbers.

- The present parasite differs from \textit{C. gachuai} [2] in having the scolex pear shaped, hooks 46 in numbers, neck present, mature proglottids squarish, testes 375-400 in numbers, vitellaria follicular, arranged in two rows and reported from \textit{Ophiocephalus gachua}, in India.

- The present tapeworm distinguishes from \textit{C. shindei} [3] in having the scolex narrow anteriorly and broad posteriorly, hooks 49 in numbers, neck present, testes 260-275 in numbers, evenly distributed and ovary dumb-bell shaped.

- The present worm differs from \textit{C. bagarius} [2] in having the scolex distinct, narrow anteriorly and broad posteriorly and testes 130-150 in numbers.

- The present tapeworm differs from \textit{C. vadgaonensis} [7] in having the scolex triangular, hooks 34 in numbers, neck present and testes 230-240 in numbers.

- The present tapeworm differs from \textit{C. khami} [1] in having the scolex cylindrical, hooks 48 in numbers, lancet shaped, mature proglottids squarish, testes 190-200 in numbers, evenly distributed, vitellaria follicular and reported from \textit{Ophiocephalus} Sp. in India.

- The present parasite differs from \textit{C. yamaguti} [5] in having the scolex distinct, narrow anteriorly and broad posteriorly and testes 130-150 in numbers.


- The present tapeworm differs from \textit{C. vadgaonensis} [7] in having the scolex triangular, hooks 56 in numbers, neck present, testes 490-510 in numbers and vitellaria follicular.

- The present cestode differs from \textit{C. baimaii} [8] in having the scolex pear shaped, hooks 48 in numbers, neck present, testes 88-100 in numbers, ovary compact and reported from \textit{Mastacembelus armatus} in Chang Mai.

- The present worm differs from \textit{C. punctatus} [9] in having scolex rectangular, hooks 40-50 in numbers, neck present, mature proglottids squarish, testes 140-150 in numbers, vitellaria follicular, arranged in 3-6 rows and reported from \textit{Ophiocephalus punctatus}, in India.

The present worm comes closer to all the known species of the genus \textit{Circumoncobothrium} Shinde [24] in general topography of organs, but differs due to some characters from following species.

\begin{itemize}
  
  \item The present cestode differs from \textit{C. ophiocaphali} Shinde, 1968 in having distinct scolex, broad in the middle and tapering at both the ends, rostellar hooks 80 in numbers, presence of neck, ovary compact, single conical mass, vitellaria follicular and reported from \textit{Ophiocephalus leucopunctatus}, in India.

\end{itemize}

\textbf{DISCUSSION}

The genus \textit{Circumoncobothrium} was established by Shinde in 1968 as a type species \textit{C. ophiocaphali} from \textit{Ophiocephalus leucopunctatus}. The present worm comes closer to all the known species of the genus \textit{Circumoncobothrium} Shinde [24] in general topography of organs, but differs due to some characters from following species.
The present worm differs from *C. armatusae* in having scolex triangular, hooks 58 in numbers, neck present, testes 90-100 in numbers, ovary compact and vitellaria follicular, arranged in 3-4 rows on lateral side of the segments.

The present parasite differs from *C. mastacembelusae* [10] in having scolex pear shaped hooks 30 in numbers, testes 130-140 in numbers, ovary compact and vitellaria follicular, arranged in 2-3 rows on each lateral side.

The present cestode differs from *C. armatusae* (minor) [11] in having scolex triangular, hooks 58 in numbers, testes 190-200 in numbers and vitellaria follicular.

The present form differs from *C. manjari* [12] Tat and in having the scolex triangular, hooks 48 in numbers, in single circle, neck present, testes 128-145 in numbers, vitellaria follicular and reported from *Ophiocephalus gachua*, in India.

The present parasite differs from *C. vitellariensis* [13] in having scolex large, triangular, hook 48 in numbers, testes 250-260 in numbers and vitellaria follicular, arranged in 3-4 rows.

The present parasite differs from *C. cirrhinae* [14] in having scolex large, cylindrical, barrel shaped, hooks 56, rostellar, neck short, testes 300-305, medium, oval, ovary dumbbell shaped, medium.

The present parasite differs from *C. mehdii* [15] in having hooks 56 arranged in single circle, neck short, squarish, mature segment medium, squarish, testes 280-290 medium, ovary large, distinctly bilobed, vitellaria follicular, 3-4 rows.

The present cestode differs from *C. ambajogaiensis* [16] in having hooks 18-20 in numbers, neck absent, mature segment ten time broader than long, testes 250-300 in numbers, ovary bilobed, dumbbell shaped, vitellaria follicular.

The present worm differs from *C. yogeshwari* [17] in having hooks 53 in numbers, neck very short, testes 95-98 in numbers, vitellaria follicular, arranged in two rows.

The present worm differs from *C. purnae* [18] in having hooks 52 in numbers, neck absent, mature segment squarish, slightly broader than long, testes 230-235 in numbers, ovary bilobed and vitellaria follicular, arranged in 3-4 rows.

The present parasite differs from *C. naidu* [19] in having scolex cylindrical, hooks 40 in numbers, neck absent, testes 200-210 in numbers, medium rounded, ovary oval, single mass, compact, transversely elongated with acini.

The present cestode differs from *C. paithenensis*[20] in having scolex triangular, cylindrical, hooks 58, single circle in four quadrant, neck very short, mature segment two time broader than long, testes 70-80, oval and vitellaria follicular in two rows.

The present form differs from *C. thapari* [21] in having host *Ophiocephalus stratus*, hooks 52 in numbers, neck absent, testes 95 in numbers, medium, oval, ovary medium, lobed, vitellaria follicular 2-3 rows.

The present parasite differs from *C. jadhavae* [22] in having scolex triangular, domed, hook 35-45 in numbers, neck present, mature segment broader than long, testes 95-105 oval to round, ovary bilobed, vitellaria follicular, arranged in 2 rows.

The present worm differs from *C. clariasi* [23] having scolex triangular, hooks 48 in numbers, testes oval in shape 249-259 in numbers, vitellaria follicular arranged 2-3 rows, reported from *Clarias batrachus* in India.

**Key to the Species of the Genus *Circumoncobothrium*** [24]

| Neck present | 1 |
| Neck absent | 2 |
| 1) Vitellaria granular | 3 |
| Vitellaria follicular | 4 |
| 2) Mature segment squarish | 5 |
| Mature segment broader than long | 6 |
| 3) Scolex triangular | - |
| C. alli [6] |
| Scolex pear shaped | C. baimaii [8] |
| Scolex narrow anteriorly | C. Shindeii [20] broad |
| Posteriorly | 7 |
| Scolex broad in the middle narrow at both end | |
| Scolex cylindrical | C. cirrhinae [8] |
| 4) Mature proglottids squarish | 8 |
| Mature proglottids broader than long | 9 |
| 5) Testes 150-200 in numbers | - |
| Testes above 200 in numbers | - |
| 6) Hooks below 30 | - |
| C. ambajogaiensis [20] |
| Hooks in between 30-40 | - |
| C. mastacembelusae [13] |
| Hooks in between 40-50 | 10 |
| Hooks above 50 in number | 11 |
| 7) Testes below 200 | - |
| C. aurangabadensis [2] in number |
| Testes above 200 in number | - |
| C. raoii [21] | |
8) Scolex rectangular in shape - C. punctatusi [18]
Scolex pear shaped - C. gachuaui [4]
Scolex triangular - C. mehdi [15]
Hooks 30-50 in numbers - 12
Hooks 50-60 in numbers - 13
Hooks 60-70 in numbers - 14
Hooks 80 in numbers - C. ophiocephali [24]
10) Scolex triangular - C. vitellarianis [13]
Scolex cylindrical - C. naidui [20]
11) Testes in between 90-100 - C. thapari [21]
Testes in between 100-150 - C. yamaguti [5]
Testes in between 150-200 - C. armatusae [14]
Testes above 200 in numbers - C. bagariusi [3]
12) Testes in between 90-110 - C. jadhavei [22]
Testes in between 125-150 - C. Manjari [24]
Testes in between 250-260 - C. clariasi [23]
13) Testes in between 70-80 - C. paithenesis [21]
Testes in between 90-100 - C. yegeshwari
[17]
Testes in between 490-510 - C. vadgaonensis [16]

**REFERENCES**


