PART I
Pseudophyllidea
Taeniidea
Anoplocephalidea
Hymenolepididea
Cotyloda Wardle, McLeod and Radinovsky, 1974.
Pseudophyllidea Carus, 1863.
Ptychobothriidae Luhe, 1902.
Circumoncobothrium Shinde, 1968.

*Circumoncobothrium pravaranagarensis* n.sp.

**INTRODUCTION**

The genus *Circumoncobothrium* was erected by Shinde (1968) from the intestine of a fresh water fish, *Ophiocephalus leucopunctatus*, as a type species, *C. ophiocephali*. Chinholikar (1976) described two new species of this genus i.e. *C. shindei* from a fresh water fish, *Mastacembellus armatus* and *C. bagarius* from *Bagarius* Sp.

Shinde (1976) described *C. khami* from *Ophiocephalus striatus*. Later on Jadhav and Shinde (1976) added two new species of this genus viz. *C. aurangabadensis* and *C. raoi* from a fresh water fish *Mastacembellus armatus* and *C. gachua*. Jadhav and Shinde (In press) from a fresh water fish, *Ophiocephalus gachua*.

The present communication, deals with the description of two new species, under the genus, as *C. pravaranagarensis* n.sp. and *C. godavariae* n.sp. reported from the intestine of *Mastacembellus armatus*, collected
at Mulanagar, and at Navur, Dist. Ahmednagar, M.S.,
India.

**DESCRIPTION**

Seven specimens, of the cestode parasites, were collected from the intestine of *Mastacembellus armatus* (cuv.and val) from Mula river, at Mulanagar, Tq. Rahuri, Dist. Ahmednagar, M.S., India; in the month of August 1990.

The scolex is medium in size, almost triangular in shape, long, broad at the base, tapering at the apex, with two bothria, extending upto the posterior end of the scolex and measures 1.516 in length and 0.492 to 0.947 in breadth. The scolex bears an armed rostellum, which is small in size, oval in shape and measures 0.379 in length and 0.265 in breadth. The rostellar hooks are 58 in number, arranged in a single circle. All hooks are straight, few slightly curved, single pronged, small and large in size. The smaller hooks measure 0.081 in length and 0.005 in breadth. The larger hooks measure 0.099 in length and 0.014 in breadth. The botheria are two in number, large in size, sac-like in appearance, narrow anteriorly, broad posteriorly, covers major portion of the scolex and measure 1.175 to 1.273 in length and 0.454 to 0.750 in breadth.
The neck is absent.

The mature segments are broader than long, almost six times broader than long, with irregular and unequal lateral margins and measure 0.242 to 0.561 in length and 2.653 to 2.895 in breadth. The testes are small in size, oval in shape, 135-141 in number, distributed in two groups, lateral to ovary, in the central medulla, unevenly distributed, bounded laterally by longitudinal excretory canals and measure 0.038 to 0.068 in length and 0.023 to 0.038 in breadth. The cirrus pouch is small in size, oval in shape, preovarian, obliquely placed, in the anterior half of the segments and measures 0.136 in length and 0.053 to 0.076 in breadth. The cirrus is thin, straight, contained within the cirrus pouch and measures 0.144 in length and 0.008 in breadth. The vas deferens is thin, short, turns obliquely, anteriorly and measures 0.114 in length and 0.008 in breadth.

The ovary is medium in size, distinctly bilobed, situated just posterior to the middle of the segments, ovarian lobes longer, almost unequal in size, extend laterally. Each lobe with 6-7 short, blunt, round acini, connected by a thin isthmus and measures 0.781 in length and 0.068 to 0.114 in breadth. The isthmus is thin, short and measures 0.152 in length and 0.038 in breadth. The
vagina is a thin tube, starts from the genital pore, runs posteriorly and obliquely reaches and opens into the ootype and measures 0.114 in length and 0.008 in breadth. The ootype is small in size, oval in shape, postero ventral to the isthmus and measures 0.030 in length and 0.015 in breadth.

The genital pores are small in size, round in shape, either to the left or to the right side of the middle of the segments and measure 0.023 in diameter.

The longitudinal excretory canals are medium in width and measure 0.023 to 0.030 in width.

The vitelline follicles are medium in size, oval in shape, distributed from the anterior to the posterior margin of the segments, in 2-3 rows on each side and measure 0.068 in length and 0.015 in breadth.

The gravid segments are broader than long, almost four times broader than long, with unequal length, with projections at the anterior and posterior corners of the segments, with convex lateral margins and measure 0.227 to 0.440 in length and 1.466 to 1.554 in breadth. The uterus is saccular, oval in shape and measures 0.758 in length and 0.220 to 0.288 in breadth. The uterus is filled by numerous eggs, which are oval, operculated and measure 0.042 to 0.052 in length and 0.016 to 0.021 in breadth.
Plate I

*Circumoncobothrium pravaranagarensis* n.sp.

A) Scolex

B) Rostellar hooks.

C) Mature segment.

D) Gravid segment.

E) Eggs.
DISCUSSION

The genus Circumoncobothrium is erected by Shinde in 1968 as a type species C. ophioccephali. Later on the following species are added to this genus:

6. C. gachai Jadhav and Shinde (In press).

The worm under discussion, is having the scolex medium, almost triangular, long, broader at base, narrow at apex; rostellar hooks 58 in number, rod shaped; neck absent, mature segments broader than long, six times broader than long; testes 135-141 in number, oval; ovary distinctly bilobed, lobes unequal, longer, with 6-7 acini, just posterior to the middle of the segments and vitellaria follicular, oval in shape, in 2-3 rows, on each lateral side of the segments.

1. The present cestode, differs from Circumoncobothrium ophioccephali which is having the scolex distinct, rostellar hooks 80 in number, round in shape; ovary a single, conical mass to irregular shaped band, lobes with 2-3 acini, near posterior border and vitellaria in 14 to 15 rows, on each side.
2. The present worm, differs from *C. aurangabadensis* which is having the scolex broader in the middle, narrow at both the ends; The rostellar hooks 42 in number, rod shaped; testes 135-145 in number, round in shape; ovary bilobed, each lobe with 3-4 acini, near posterior margin of segments and vitellaria granular, near the lateral margins.

3. The present tapeworm, differs from *C. raoni* which is having scolex broad in the middle, narrow at both the ends; the rostellar hooks 46 in number, rod shaped; testes 210-215 in number, round in shape, in two fields; ovary situated at almost near the posterior margin of the segments and vitellaria granular, at the lateral sides of the segments.

4. The present form, differs from *C. shindei* which is having the rostellar hooks 49 in number, rod shaped; testes 260-275(273) in number, round in shape; ovary dumb-bell shaped, lobes rounded, in the centre of segments and vitellaria granular.

5. The worm under discussion, differs from *C. bagarusi* which is having rostellar hooks 55 in number, rod shaped; testes 275-285(276) in number, in two fields; ovarian lobes with 5-6 globular acini, in the middle one third of
the segments and vitelline follicle with irregular shape, in 4-5 rows, on each side.

6. The present cestode, differs from *C. khami* which is having the scolex cylindrical, with even width, apical disc separated by notch; the rostellar hooks 48 in number, testes 190-200(194), round; ovary bilobed, each lobe compact and vitelline follicles round, in a single layer, near the lateral margins.

7. The present worm, differs from *C. gachuait* which is having the scolex pear shaped in appearance, rostellar hooks 46 in number, testes 375-400 in number, in two fields; ovarian lobes with 5-6 short, blunt acini and vitellaria follicular, corticular in position, in 1-2 rows on each side.

The distinct and differentiating characters, are given in a comparative chart, at the end.

These characters necessitate, the erection of a new species, for these worms and hence the name *Circumoncobothrium pravaranagarensis* n.sp. is proposed, after the locality, where the research work is carried out in the Padmashri Vikhe Patil College of Arts, Science and Commerce, Pravaranagar, Dist.Ahmednagar.
<table>
<thead>
<tr>
<th>Type species</th>
<th>Circumonocobothrium pravaranagarensis n.sp.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Host</td>
<td>Mastacemellus armatus. (Cuv. and Val.)</td>
</tr>
<tr>
<td>Habitat</td>
<td>Intestine.</td>
</tr>
<tr>
<td>Locality</td>
<td>Mulanagar, Dist. Ahmednagar, M.S., India.</td>
</tr>
<tr>
<td>Date of collection</td>
<td>29th August, 1990.</td>
</tr>
</tbody>
</table>
**Cotyloida**  Wardle, McLeod and Radinovsky, 1974.

**Pseudophyllidea**  Carus, 1863.

**ptychobothriidae**  Luhe, 1902.

**Circumoncobothrium**  Shinde, 1968.

**Circumoncobothrium godavariae** n.sp.

**DESCRIPTION**

Nine specimens, of the cestode parasites, were collected from the intestine of a fresh water fish *Mastacembellus armatus* from Godavari river, at Navur, Tq. Shrirampur, Dist. Ahmednagar, M.S., India; in the month of June, 1991.

The scolex is large in size, triangular in shape and appearance, broad at the base, tapering at the apex with two bothria, extending almost up to the posterior end of the scolex and measures 1.212 to 1.478 in length and 0.454 to 1.425 in breadth. The scolex bears medium rostellum, which is armed, protruded, large in size, dome shaped in appearance and measures 0.189 in length and 0.212 to 0.379 in breadth. The rostellar hooks are almost unequal in length, rod shaped, 60 in number, arranged in a single circle, in four quadrants and measure 0.024 to 0.076 in length and 0.003 to 0.009 in breadth. The bothria are long, large in size, sac like, oval in shape
and measure 1.076 to 1.175 in length and 0.189 to 0.523 in breadth.

The neck is absent.

The mature segments are small in size, thin, broader than long, almost nine to ten times broader than long, with convex lateral margins and projections at the anterior and posterior margin of the segments and measure 0.159 to 0.259 in length and 2.426 to 2.516 in breadth. The testes are small in size, round in shape 120-130 in number, unevenly distributed, in two groups, lateral to the ovary, in the central medulla on each side, bounded laterally by longitudinal excretory canals and measure 0.015 to 0.038 in diameter. The cirrus pouch is medium in size, oval in shape, transversely placed, preovarian, placed nearly in the centre of the segment, just anterior to the middle margin of the segments and measures 0.129 in length and 0.038 to 0.060 in breadth. The cirrus is thin, short, slightly coiled, contained within the cirrus pouch and measures 0.091 in length and 0.008 in breadth. The vas deferens is thin, short and measures 0.076 in length and 0.008 in width.

The ovary is small in size, bilobed, lobes almost equal in size, situated in the posterior half of the segments, but just posterior to the middle of the same,
connected by a thin isthmus, each lobe oval, compact and measures 0.492 in length and 0.038 to 0.060 in breadth. The isthmus is thin, long and measures 0.091 in length and 0.015 in breadth. The vagina is a thin tube, starts from the genital pore, takes a turn, runs posteriorly and obliquely, crosses the isthmus, reaches and opens into the ootype and measures 0.091 in length and 0.008 in breadth. The ootype is small in size, round in shape, postovarian and measures 0.015 in diameter.

The genital pores are small in size, oval in shape, preovarian and measure 0.038 in length and 0.023 in breadth.

The longitudinal excretory canals are thin and measure 0.015 to 0.030 in breadth.

The vitellaria are follicular, follicles small in size, oval in shape, distributed from the anterior to the posterior margin of the segments, in two to three rows, on each lateral side and measure 0.015 in length and 0.008 in breadth.

The uterus is saccular, in the centre of each gravid segment, contain numerous eggs, which are oval in shape, operculated and measures 0.440 in length and 0.076 to 0.114 in width. The eggs measure 0.031 to 0.055 in length and 0.012 to 0.023 in width.
Plate: II

_Circemoncobothrium godavariae_ n.sp.

A) Scolex
B) Rostellar hooks.
C) Mature segment.
D) Gravid segment.
E) Eggs.
DISCUSSION

The worm under discussion, is having the scolex large, narrow anteriorly, broad posteriorly; rostellar hooks 60 in number, unequal in length, rod shaped, in a single circle; neck absent, mature segments almost nine to ten times broader than long, testes 120-130 in number, round, unevenly distributed, in the central medulla; ovary bilobed, each lobe oval, just posterior to the middle of the segments and vitellaria follicular, small in size, oval in shape, in 2-3 rows, on each lateral side.

1. The present worm differs from Circumoncolothrium ophiocephali which is having scolex distinct, rostellar hooks 80 in number, testes 70-80 in number, round, in two lateral fields; ovary single, conical mass to irregular shaped band, thinner in the middle, expanded at lateral ends, near posterior border, with 2-3 well developed acini and vitellaria in 14-15 rows on each side.

2. The present tapeworm, differs from C.aurangabadensis which is having scolex broad in the middle, narrow at both the ends; rostellar hooks 42 in number, rod shaped; testes 135-145 in number, round, scattered throughout the segments; ovarian lobes with 3-4 acini, near posterior margin of the segments and vitellaria granular, near lateral margins.
3. The present cestode, differs from *C. moe* which is having scolex broad in the middle, narrow at both the ends, rostellar hooks 46 in number, testes 210-215 in number, round, arranged densely, in two fields; ovary bilobed, near the posterior margin of the segment, and vitellaria granular, at lateral sides of the segments.

4. The present worm, differs from *C. shinjuki* which is having the rostellar hooks 49 in number; testes 260-275 in number, round, evenly distributed; ovary dumb-bell shaped, lobes rounded, compact, in the centre of segments and vitellaria granular.

5. The present form, differs from *C. bagariusi* which is having the scolex narrow anteriorly, broad posteriorly; rostellar hooks 55 in number, testes 275-285 (276) in number, in two lateral fields, ovarian lobes with 5-6 globular acini, in middle one third of segment and vitelline follicles in 4-5 rows, on each side.

6. The present cestode, differs from *C. khami* which is having scolex cylindrical, with even width, apical disc separated by a notch; rostellar hooks 48 in number, lancet shaped, testes 190-200(194) in number, round evenly distributed; ovarian lomes compact, situated near posterior and centre of segment and vitelline follicles rounded, in a single layer, near the lateral margins.
7. The present tapeworm, differs from *C. gachua* which is having the scolex pear shaped in appearance, the rostellar hooks 46 in number, testes 375-400 in number, densely situated, in two fields; ovary bilobed, with 5-6 blunt acini, post equatorial and vitellaria cortical in position, in 1-2 rows on each side.

8. The worm under discussion, differs from *C. pravaranagarensis* n.sp. (described earlier), which is having long, triangular scolex, rostellar hooks 58 in number, large and small in size; testes 135-141 in number, oval, evenly distributed, in two fields; ovary bilobed, ovarian lobes with 6-7 short, blunt acini, situated just posterior to the middle of segment and vitellaria follicular, in 2-3 rows on each side.

The additional differentiating characters, are given in the comparative chart at the end.

These character are enough, to erect a new species, for these worms and hence the name *Circumoncobothrium godavariae* n.sp. is proposed after the river Godavari, from which the fish was collected.

<table>
<thead>
<tr>
<th>Type species</th>
<th><em>Circumoncobothrium godavariae</em> n.sp.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Host</td>
<td><em>Mastacembellus armatus</em></td>
</tr>
<tr>
<td>(Cuv. and Val.)</td>
<td></td>
</tr>
<tr>
<td>Habitat</td>
<td>Intestine.</td>
</tr>
<tr>
<td>Locality</td>
<td>Navur, Tq. Shrirampur,</td>
</tr>
<tr>
<td>Date of collection</td>
<td>Dist. Ahmednagar, M.S., India.</td>
</tr>
<tr>
<td></td>
<td>22 nd June, 1991.</td>
</tr>
</tbody>
</table>
Comparative chart showing the account of different species of *Circumnucobothrium* Shinde, 1968.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Scolex</td>
<td>Distinct, length 0.81, breadth 0.51.</td>
<td>Broad in the middle and narrow at both ends 1.68 x 0.91 in length and breadth respectively.</td>
<td>Broad in the middle and narrow at both ends, length 1.96, breadth 1.86.</td>
</tr>
<tr>
<td>Hooks</td>
<td>80, rod shaped, larger 0.050-0.055, smaller 0.024-0.048 in length</td>
<td>42, rod shaped, large 0.35, smaller 0.12 in length.</td>
<td>46, rod shaped, single circle.</td>
</tr>
<tr>
<td>Neck</td>
<td>present</td>
<td>present</td>
<td>present</td>
</tr>
<tr>
<td>Mature segment</td>
<td>Broader than long, length 0.34, width 1.83</td>
<td>Broader than long, length 0.52, breadth 2.11</td>
<td>Broader than long, length 0.35-0.43 and width 0.035-0.050</td>
</tr>
<tr>
<td>Testes</td>
<td>In two lateral fields, 70-80, 0.20-0.30 in diameter, round in shape.</td>
<td>Scattered throughout the segment, 135-145 in number, 0.03-0.07 in diameter, round in shape.</td>
<td>Rounded, arranged densely in two fields, 210-215 in number, measuring 0.127-0.147 in diameter.</td>
</tr>
<tr>
<td>Ovary</td>
<td>Single, conical mass to irregular shaped band, thinner in middle and expanded at lateral ends, lobes with 2-3 acini, situated near posterior border, length 0.36-0.40</td>
<td>Bilobed each lobe with 3-4 acini, situated near posterior margin of the segment.</td>
<td>Bilobed, situated at almost near the posterior margin of the segment, length 0.97-0.98.</td>
</tr>
<tr>
<td>Vitellaria</td>
<td>Follicular, in 14-15 rows on each side</td>
<td>Granular near lateral margin.</td>
<td>Granular, present at lateral sides of segments.</td>
</tr>
<tr>
<td>Host</td>
<td><em>Ophioccephalus leucopunctatus</em> <em>Mastoacembellus armatus</em></td>
<td><em>Mastoacembellus armatus</em></td>
<td><em>Mastoacembellus armatus</em></td>
</tr>
<tr>
<td>Characters</td>
<td>C. shindei</td>
<td>C. bagariusi</td>
<td>C. khedm</td>
</tr>
<tr>
<td>--------------</td>
<td>-----------</td>
<td>--------------</td>
<td>---------</td>
</tr>
<tr>
<td>Scolex</td>
<td>Narrow anteriorly, broad posteriorly length 1.56 breadth 1.21.</td>
<td>Narrow anteriorly, broad posteriorly, length 1.31 breadth 1.65.</td>
<td>Cylindrical, with even width, apical disc separated by notch, length 1.06 and width 0.38.</td>
</tr>
<tr>
<td>Hooks</td>
<td>49, rod shaped, larger 0.073 smaller 0.077 in length.</td>
<td>55, rod shaped, longer 0.093, smaller 0.003 in length.</td>
<td>48, lancet shaped, larger 0.065, smaller 0.007 in length.</td>
</tr>
<tr>
<td>Neck</td>
<td>present</td>
<td>Absent</td>
<td>Absent</td>
</tr>
<tr>
<td>Mature segment</td>
<td>Broader than long, length 0.37-0.40 breadth 1.79 (Gravid segment broader than long).</td>
<td>Broader than long, length 0.28-0.34 width 2.12.</td>
<td>Squarish, length 1.04 and width 1.14</td>
</tr>
<tr>
<td>Testes</td>
<td>Evenly distributed 260-275(273), 0.02-0.03 in diameter.</td>
<td>In two lateral fields, 275-285(276), 0.06-0.07 in diameter.</td>
<td>Evenly distributed 190-200(194), 0.04-0.05 in diameter.</td>
</tr>
<tr>
<td>Ovary</td>
<td>Bilobed, dumb-bell shaped with long isthmus, lobes rounded and compact.</td>
<td>Bilobed, in middle one third of the segment, each lobe with 5-6 globular acini, length 0.07.</td>
<td>Bilobed, each lobe compact, situated near posterior and centre of the segment, length 0.31.</td>
</tr>
<tr>
<td>Vitellaria</td>
<td>Granular</td>
<td>Large, follicles with irregular shape, in 4-5 rows on each side.</td>
<td>Single layer of round follicles, near the lateral margins.</td>
</tr>
<tr>
<td>Host</td>
<td>Mastacembellus armatus</td>
<td>Bugarius sp.</td>
<td>Ophioccephalus striatus</td>
</tr>
<tr>
<td>Characters</td>
<td>C. gachua Jadhav and Shinde (In press)</td>
<td>C. pravaranagarensis n.sp.</td>
<td>C. godavariae n.sp.</td>
</tr>
<tr>
<td>-------------------</td>
<td>----------------------------------------</td>
<td>----------------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Scolex</td>
<td>Pear shaped, length 0.72 breadth 0.45.</td>
<td>Long, narrow anteriorly, broad posteriorly, length 1.51, breadth 0.94.</td>
<td>Triangular, narrow anteriorly, broad posteriorly, length 1.47, breadth 1.42.</td>
</tr>
<tr>
<td>Hooks</td>
<td>46, larger 0.034 x 0.008, smaller 0.017 x 0.005 in length and breadth.</td>
<td>58, larger 0.099 x 0.014, smaller 0.061 x 0.005 in length and breadth.</td>
<td>60, rod shaped, larger 0.076 x 0.009, smaller 0.024 x 0.003 in length and breadth.</td>
</tr>
<tr>
<td>Neck</td>
<td>Present</td>
<td>Absent</td>
<td>Absent</td>
</tr>
<tr>
<td>Mature segment</td>
<td>Broader than long, length 0.68 and breadth 0.07.</td>
<td>Broader than long, length 0.561 and breadth 2.895.</td>
<td>Small, broader than long, length 0.259 and breadth 2.516.</td>
</tr>
<tr>
<td>Testes</td>
<td>Densely in two fields, 375-400 in number, 0.03 - 0.04 in diameter.</td>
<td>Unevenly in two fields, 135-141 in number, oval in shape, length 0.038 - 0.068 breadth 0.023-0.038.</td>
<td>Unevenly distributed, rounded, 120-130, lateral to ovary, 0.015-0.038 in diameter.</td>
</tr>
<tr>
<td>Vvary</td>
<td>Bilobed, postequatorial with short, blunt 5-6 acini, 0.14 in length.</td>
<td>Bilobed, each lobe with 6-7 short blunt acini, situated just posterior to the middle of the segment, 0.781 in length.</td>
<td>Bilobed, with long isthmus, lobes oval and compact posterior to the middle of the segments, 0.492 in length.</td>
</tr>
<tr>
<td>Vitellaria</td>
<td>Follicular, corticulair in position, 1-2 rows on each side.</td>
<td>Follicular, in 2-3 rows on each side.</td>
<td>Follicular, small oval, in 2-3 rows on each lateral side.</td>
</tr>
<tr>
<td>Test</td>
<td>Ophiocophalus gachua</td>
<td>Mastacembellus armatus</td>
<td>Mastacembellus armatus</td>
</tr>
</tbody>
</table>
A key to the species of genus Circumoncobothrium Shinde, 1968.

Presence of neck ... ... ... 1
Absence of neck ... ... ... 2

1. Scolex distinct ... ... ... C. ophioccephali
                   Shinde, 1968.
Scolex broad in the
middle and narrow
at both ends ... ... ... 3
Scolex narrow anteriorly
and broad posteriorly ... ... C. shindei Shinde and
                        Chincholikar, 1976.
Scolex pear shaped ... ... ... C. gachua Jadhav
                        and Shinde (In press)

2. Mature segments broader
    than long ... ... ... 4
Mature segments squarish ... ... C. khami Shinde, 1976.

3. Testes below 200 ... ... ... C. aurangabadensis
                        Jadhav and Shinde, 1976.
Testes more than 200 ... ... ... C. raoi Shinde and Jadhav, 1976.

4. Scolex triangular ... ... ... 5
Scolex narrow anteriorly
    and broad posteriorly ... ... C. bagariusi Chincholikar
                        and Shinde, 1976.

5. Testes rounded ... ... ... C. godavariae n.sp.
Testes oval ... ... ... C. pravaranagarensis n.sp.
Eucestoda

Wardle, McLeod and Radinovsky, 1974.

Taeniidea

Wardle, McLeod and Radinovsky, 1974.

Taeniidae

Ludwig, 1886.

Taenia

Linnaeus, 1758.

*Taenia rileyi* Lowen, 1929.

**DESCRIPTION**

Nine specimens of the cestode parasites, were collected from the intestine of a cat, *Felis domesticus* at Loni, Tq. Shrirampur, Dist. Ahmednagar, M.S., India; in the month of July, 1991.

The scolex is large in size, dome shaped in appearance, highly muscular, narrow anteriorly, broad posteriorly, indistinctly marked off from the strobila and measures 1.339 to 1.874 in length and 1.785 to 3.302 in breadth. The rostellum is large in size, round in shape, with double crown of hooks and measures 0.364 in diameter. The hooks are 36 in number, small and large in size, arranged in two circles. The small hooks measure 0.243 in length and 0.024 in breadth, whereas the large hooks measure 0.364 in length and 0.048 in breadth. The suckers are medium in size, arranged in four corners, oval in shape, equidistantly placed and measure 0.393 to 0.499 in length and 0.320 to 0.446 in width.
The neck is absent.

The mature segments are craspedote, broader than long, almost two times broader than long, with irregular lateral margins and projections at the anterior and posterior corners of the segments and measure 1.306 to 1.590 in length and 3.089 to 3.181 in width. The testes are 280 to 290 in number, small in size, oval in shape, evenly distributed, bounded laterally by longitudinal excretory canals, mostly preovarian, from the anterior margin of the segments to the ovary, few on ovarian lobes, few lateral to it and few posterior to the ovary, in the central medulla, in a single field and measure 0.034 to 0.057 in length and 0.045 to 0.068 in breadth. The cirrus pouch is large in size, cylindrical in shape, slightly curved, placed near the anterior margin of the segments and measures 1.193 in length and 0.113 to 0.158 in breadth. The cirrus is thin, unarmed, slightly coiled, contained within the cirrus pouch and measures 1.193 in length and 0.022 to 0.034 in width.

The vas deferens is short, wide, curved, runs upto the middle region of the segments and measures 0.352 in length and 0.011 to 0.022 in width.

The ovary is bilobed, placed at 1/3 rd from the posterior margin of the segments, in the central medulla, extends laterally and measures 1.193 in length and 0.225
to 0.304 in width. The ovarian lobes are large in size, oval in shape, with irregular margin, unequal in size, poral lobe slightly small and narrow, whereas the aporal lobe large and wide. The vagina is thick, wide, posterior to the cirrus pouch, starts from the genital pore, extends medially for a short distance, enlarges and forms the receptaculum seminis, runs straight up to the middle of the segments, then takes a curve posteriorly, runs in the middle of the segments, reaches and opens into the ootype and measures 1.817 in length and 0.068 to 0.113 in width. The receptaculum seminis is medium in size, oval in shape, posterior to the cirrus pouch and measure 0.225 in length and 0.135 in width. The ootype is medium in size, round in shape, postovarian and measures 0.091 in length and 0.079 in width.

The genital pores are medium in size, oval in shape, placed near the anterior margin of the segments, almost at 1/3 rd from the anterior margin of the same, irregularly alternate and measure 0.908 in length and 0.034 to 0.045 in width.

The longitudinal excretory canals are of medium size and measure 0.091 to 0.113 in width.

The vitelline gland is medium in size, compact, slightly triangular or bean shaped in appearance,
Plate: III

*Taenia rileyi* Lowen, 1929.

A) Scolex.

B) Rostellar Hooks.

C) Mature segment.
postovarian, near the posterior margin of the segments and measures 0.398 in length and 0.057 to 0.135 in width.

The gravid segments were not available.

**DISCUSSION**

The genus *Taenia* was erected by Linnaeus, 1758 as a type species *T. solium* in man; cosmopolitan.

After going through the literature, the worm under discussion, turned out to be *Taenia rileyi* Lowen, 1929.

The worm under discussion, resembles *T. rileyi* Lowen, 1929 in having the mature segments broader than long, vas deferens runs up to the middle of the segments, ovary bilobed and vagina posterior to cirrus pouch; but differs from it, in few characters, which are known as additional characters as follows:

1. The present cestode, differs from *T. rileyi* Lowen, 1929 in the shape of the scolex (dome shaped in apperance vs. globular).

2. The present tapeworm, differs from the same, in the number of testes (280-290 vs. 350-400).

3. The present form, differs from it in the shape and position of the cirrus pouch (cylindrical, near anterior margin of the segments vs. oval, curved, just anterior to the middle).

As the characters are minor, it is redescribed here,
as *Taenia rileyi* Lowen, 1929 from *Lynx canadensis*; Minnesota; where as the present worms, are being reported from *Felis domesticus* collected at Loni Tq. Shrirampur, Dist. Ahmednagar, M.S., India.

Type species *Taenia rileyi* Lowen, 1929.

Host *Felis domesticus*.

Habitat Intestine.

Locality Loni, Tq. Shrirampur, Dist. Ahmednagar, M.S., India.

Date of collection 2nd July, 1991.
Eucestoda

Wardle, McLeod and Radinovsky, 1974.

Anoplocephalides

Wardle, McLeod and Radinovsky, 1974.

Anoplocephalidae

Cholodkovsky, 1902.

Moniezia

Blanchard, 1891.

Moniezia (Blanchariezia) bharalae Shinde, Jadhav and Kadam, 1985.

DESCRIPTION

Nine specimens, of the cestode parasites, were collected from the intestine of a goat, Capra hircus, at Newasa, Tq. Newasa, Dist. Ahmednagar, M.S., India; in the month of May, 1991.

The worms were long, with thick musculature, with scolex, numerous immature and mature proglottids.

The scolex is large in size, almost quadrangular in shape, simple, unarmed, without rostellum, with four large suckers, broad anteriorly, narrow posteriorly and measures 0.834 in length and 0.781 to 1.205 in breadth. The suckers are medium in size, oval in shape, highly muscular, four in number, arranged in two pairs, one pair in each half of the scolex, just touching to each other in each pair, obliquely one behind the other and
measure 0.288 to 356 in length and 0.205 to 0.280 in breadth.

The neck is medium in length, uneven in width, slightly broad anteriorly, narrow posteriorly and measures 1.266 in length and 0.561 to 0.742 in breadth.

The mature segments are broader than long, almost two and half times broader than long, with double set of reproductive organs, with biconcave lateral margins, with projections at the anterior and the posterior corners of the segments and measure 1.643 to 1.964 in length and 4.320 to 4.517 in breadth. The testes are small in size, almost oval in shape, 220-230 (223) in number, occupy the whole segment, from one lateral side to the other, in the central medulla, in a single field, unevenly distributed and measure 0.071 to 0.125 in length and 0.054 to 0.089 in breadth. The cirrus pouch is medium in size, oval in shape, in the middle of the segments, slightly obliquely placed, directed anteriorly, extends upto the longitudinal excretory canals and measures 0.375 to 0.393 in length and 0.179 to 0.250 in breadth. The cirrus is thick, short, slightly curved, contained within the cirrus pouch, protruded at its tip and measures 0.340 to 0.357 in length and 0.036 to 0.054 in breadth. The vas deferens is short, thin, turns obliquely, towards the anterior
side of the segments and measures 0.411 to 0.571 in length and 0.036 to 0.054 in breadth.

The ovary on each side, is medium in size, distinctly bilobed, lobes unequal in size, compact, almost oval in shape, obliquely placed, in the middle or slightly posterior to the middle of the segments and measures 0.589 to 0.803 in length and 0.197 to 0.322 in breadth. The vagina is short, a thick tube, starts from the genital pore, anterior to the cirrus pouch, runs transversely and obliquely for a short distance, turns posteriorly, enlarges and forms the receptaculum seminis, crosses the ovarian isthmus, reaches and opens into the ootype and measures 0.821 to 1.000 in length and 0.036 to 0.054 in breadth. The receptaculum seminis is medium in size, sac-like, broader in the middle, narrow on both the sides, preovarian, obliquely placed and measures 0.535 to 0.624 in length and 0.179 to 0.233 in breadth.

The ootype is medium in size, oval in shape, postovarian, situated in the construction of the ovarian lobes and measures 0.125 to 0.143 in length and 0.107 to 0.125 in breadth.

The genital pores are small in size, oval in shape,
Plate: IV

*Moniezia (Blanchariezia) bharalae*

A) Scolex.

B) Mature segment.
in the middle of the segments and measure 0.179 to 0.215 in length and 0.036 to 0.054 in breadth.

The longitudinal excretory canals are medium in size and measure 0.071 to 0.089 in width.

The vitelline gland is large in size, almost oval in shape, with irregular margin, bears 6-9 short, blunt, round acini, postovarian, near the posterior margin of the segments and measures 0.197 to 0.215 in length and 0.143 to 0.161 in breadth.

The inter proglottidal glands are present in between the two adjacent segments, (i.e. between the anterior and the posterior margins of the segments), which are large in size, oval in shape, 38 to 40 in number, almost arranged in pairs, with thick musculature, situated in the central region of the margins, leaving space on each lateral side and measure 0.089 to 0.125 in length and 0.071 to 0.107 in breadth.

The gravid segments were not available.

**DISCUSSION**

The genus *Moniezia* was erected by Blanchard, 1891 as a type species *M. expansa* (Rudolphi, 1805) Yamaguti 1942.

The worm under discussion, on closer examination, turned out to be *Moniezia* (Blanchariezia)*bharalae* Shinde, Jadhav and Kadam, 1985. The present cestode, resembles it in
having the mature segments broader than long, vas deferens
short, ovary with unequal lobes, either in the centre or
in posterior half of the segments; inter proglottidal glands
in two rows etc. but differs from the same in few
characters, which are as follows:

1. The present tapeworm, differs from *Moniezia*
   (Blanchariezia) bharalae Shinde, Jadhav and Kadam, 1985
   in the breadth of the proglottids (Two and half times
   broader than long as against six to seven times broader
   than long).

2. The present worm, differs from it, in the
   number of testes (220-230 (223) as against 190-220).

3. The present form, differs from the same, in the
   position of the cirrus pouch (in the middle of the
   segments, extends medially upto the longitudinal
   excretory canals as against just anterior to the middle
   of the segments and extend medially beyond the longitudi-
   nal excretory canals).

   As the characters are minor, it is redescribed
   here, as *Moniezia* (Blanchariezia) bharalae Shinde,

   Shinde, Jadhav and Kadam, in 1985 reported their
   species from *Ovis bharal* at Aurangabad, M.S., India;
where as the present worms are being reported from
Capra hircus at Newasa, Tq. Newasa, Dist. Ahmednagar,
M.S., India.

Type species: Moniezia (Blanchariezia)


Host: Capra hircus.

Habitat: Intestine.

Locality: Newasa, Tq. Newasa,
          Dist. Ahmednagar, M.S., India,

Date of collection: 9th May, 1991.
Eucestoda

Wardle, McLeod and Radinovsky, 1974.

Anoplocephalidea

Wardle, McLeod and Radinovsky, 1974.

Linstowiidae

Fuhrmann, 1932.

Oochoristica

Luhe, 1898.

Oochoristica luheii n.sp.

DESCRIPTION

Eleven specimens, of the cestode parasites, were collected from the intestine of Varanus indicus at Sangamner, Tq. Sangamner, Dist. Ahmednagar, M.S., India; in the month of July, 1991.

The worms were large in size, with medium musculature, scolex, numerous immature and mature proglottids.

The scolex is medium in size, dome shaped in appearance, distinct, slightly wider than long, without rostellum and measures 0.326 to 0.530 in length and 0.379 to 0.629 in breadth. The suckers are four in number, large in size, round in shape, arranged in two pairs, one pair in each half of the scolex and measure 0.136 to 0.159 in length and 0.114 to 0.136 in breadth.

The neck is of medium length, wide, longer than broad and measures 1.00 to 1.402 in length and 0.500 to 0.644 in breadth.
The mature segments are medium in size, almost quadrangular in shape, two times broader than long, without projections at the anterior and the posterior corners of the segments, with uneven length and measure 0.788 to 1.061 in length and 1.652 to 1.683 in breadth. The testes are small in size, oval in shape 120 to 125 (121) in number, unevenly distributed, in a single field, postero-lateral to the ovary and measure 0.030 to 0.053 in length and 0.023 to 0.053 in breadth. The cirrus pouch is medium in size, cylindrical in shape, placed in the anterior one third region of the segments, transversely placed, curved anteriorly, opens marginally and measures 0.394 in length and 0.045 to 0.083 in breadth. The cirrus is thin, coiled, slightly broader towards the tip, contained within the cirrus pouch, unarmed and measures 0.379 in length and 0.008 to 0.015 in breadth. The vas deferens is medium in length, runs obliquely towards the anterior side, thin, coiled and measures 0.386 in length and 0.008 in breadth.

The ovary is large in size, distinctly bilobed, follicular, lobes unequal in size, almost in the centre of the segments, lobes with 5 to 11, long, separate, finger shaped, blunt acini and measures 0.341 to 0.644 in length and 0.265 to 0.454 in breadth. The isthmus is short,
wide and measures 0.152 in length and 0.076 in breadth.
The vagina is a thin tube, posterior to the cirrus pouch, starts from the genital pore, runs transversely, then turns posteriorly, enlarges and forms the receptaculum seminis, which crosses the isthmus, reaches and opens into the ootype and measures 1.137 in length and 0.015 to 0.023 in breadth.
The receptaculum seminis is medium in size, sac like, oval in shape, on the isthmus and measures 0.167 in length and 0.038 to 0.091 in breadth. The ootype is small in size, round in shape, postovarian, compact and measures 0.060 in diameter.

The genital atrium is small in size, oval in shape, slightly elevated, muscular and measures 0.098 in length and 0.038 in breadth. The genital pores are small in size, oval in shape, marginal at 1/3 rd from the anterior margin of the segments, irregularly alternate and measure 0.060 in length and 0.023 in breadth.

The vitelline gland is large in size, elongated, with 10-12 short, blunt, round acini, postovarian and measures 0.333 to 0.402 in length and 0.068 to 0.167 in breadth.

The gravid segments were not available.
Plate: V

Oochoristica luhei n.sp.

A) Scolex.

B) Mature segment.
DISCUSSION

The genus *Oochoristica* was erected by Luhe, 1898 as a type species, *O. tuberculata* in *Lacerta, Agama*, *Uromastics*, *Varanus*, etc, Europe, Also in *Coelopeltis* sp. in Morocco.

After going through the literature, the worm under discussion, in having the mature segments, either squarish or longer than broad; ovary bilobed, genital pores irregularly alternate, comes closer to *Oochoristica whitentoni* Steelman, 1939 *O. taborenensis* Loewen, 1934 and *O. cryptobothrium* Linstow, 1906; but differs from them in many characters, which are as follows:

1. The present cestode, differs from *O. whitentoni* which is having the scolex squarish, testes 100-150 in number, postovarian; neck long, mature segments squarish in shape, cirrus pouch oval, long and genital pores at 1/4 th from anterior margin of the segments.

2. The present tapeworm, differs from *O. taborenensis* which is having the scolex indistinctly marked off from the strobila testes 75 in number, ovary bilobed, lobes square in shape; mature segments larger, longer than broad and cirrus pouch small, oval.

3. The present form, differs from *O. cryptobothrium* which is having the scolex oval in shape, testes 90 in number, ovary indistinctly bilobed, cirrus pouch elongated, cylindrical and
vitelline gland triangular in shape.

The above noted characters, are valid enough to erect a new species, to accommodate these worms and hence the name

*Cochoristica luhei* n.sp. is proposed after Dr. Luhe, who has erected this genus.

<table>
<thead>
<tr>
<th>Type species</th>
<th><em>Cochoristica luhei</em> n.sp.</th>
</tr>
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<tbody>
<tr>
<td>Host</td>
<td><em>Varanus indicus.</em></td>
</tr>
<tr>
<td>Habitat</td>
<td>Intestine.</td>
</tr>
<tr>
<td>Locality</td>
<td>Sangamner, Tq. Sangamner,</td>
</tr>
<tr>
<td></td>
<td>Dist. Ahmednagar, M.S., India,</td>
</tr>
<tr>
<td>Date of collection</td>
<td>2nd July, 1991.</td>
</tr>
</tbody>
</table>
Anoplocephalidea Wardle, Mcleod and Radinovsky, 1974.
Linstowiidae Fuhrmann, 1932.
Oochoristica Luhe, 1898.

Oochoristica fibrata Meggitt, 1927.

DESCRIPTION

Seventeen specimens, of the cestode parasites, were collected from the intestine of a wall lizard, Hemidactylus coctaei at Rahta, Tq. Kopergaon, Dist. Ahmednagar M.S., India, in the month of July, 1991.

The worms were medium in size, with thick musculature, scolex, immature, mature and gravid proglottids.

The scolex is small in size, almost squarish in shape, distinctly marked off from the strobila, slightly broader than long, without rostellum and measures 0.073 to 0.104 in length and 0.130 to 0.159 in breadth. The suckers are large in size, almost round in shape, four in number, arranged in two pairs, one pair in each half of it and measure 0.057 to 0.071 in length and 0.062 to 0.078 in breadth.
The neck is long, wide, cylindrical, longer than broad, narrow anteriorly, broad posteriorly and measures 0.563 to 0.758 in length and 0.113 to 0.291 in breadth.

The mature segments are longer than broad, almost 2-3 times longer than broad, cylindrical in shape, with irregular, concave or convex lateral margins, without projections at the anterior and the posterior corners of the segments and measure 1.258 to 2.268 in length and 0.825 to 1.156 in breadth. The testes are medium to large in size, round in shape, evenly distributed, in the central medulla, in the posterior one third region of the segments, postovarian, posterior to the vitelline gland, 40-42 in number, in a single field, bounded laterally by longitudinal excretory canals and measure 0.053 to 0.121 in length and 0.053 to 0.112 in breadth. The cirrus pouch is small in size, cylindrical in shape, runs parallel to the anterior margin of the segments, situated in the anterior one third or one fourth of the segment, marginal and measures 0.209 to 0.218 in length and 0.024 to 0.049 in breadth. The cirrus is thin, coiled, contained within the cirrus pouch and measures 0.335 in length and 0.005 in breadth. The vas deferens is short, straight, thin and measures 0.155 in length and 0.005 in breadth.
The ovary is large in size, butterfly shaped in appearance, distinctly bilobed, with irregular margin, centrally placed, ovarian lobes unequal in size, each lobe with 8-10 short, blunt, round acini, situated just anterior to the middle of the segments and measures 0.417 to 0.606 in length and 0.121 to 0.282 in breadth. The poral lobe is small in size and measures 0.243 in length and 0.121 in breadth, where as the aporal lobe is slightly large in size and measures 0.316 in length and 0.121 in breadth. The isthmus is short, wide and measures 0.087 in length and 0.063 in breadth. The vagina is a thick, wide tube, starts from the genital pore, runs transversely, for a long distance, takes a turn, runs posteriorly, reaches and opens into the ootype and measures 0.752 in length and 0.010 to 0.024 in breadth. The ootype is medium in size, with irregular margin, oval in shape, postovarian, situated in the concavity of the ovarian lobes and measures 0.067 in length and 0.058 in breadth.

The genital atrium is medium in size, oval in shape, highly muscular, marginal, almost at the anterior one third or one fourth region of the segments and measures 0.170 to 0.180 in length and 0.087 to 0.112 in breadth. The genital
Plate: VI

Oochoristica fibrata Meggitt, 1927.

A) Scolex.
B) Mature segment.
C) Gravid segment.
D) Eggs.
pores are small in size, oval in shape, marginal, irregularly alternate and measure 0.063 in length and 0.024 in breadth.

The longitudinal excretory canals are wide and measure 0.019 to 0.024 in breadth.

The vitelline gland is large in size, triangular in shape, broad anteriorly, narrow posteriorly, postovarian, with compact margin and measures 0.072 to 0.218 in length and 0.087 to 0.175 in breadth.

The gravid segments are large in size, cylindrical in shape, longer than broad, almost three and half times longer than broad, fully contained with eggs, which are evenly distributed and measure 2.873 to 2.964 in length and 0.606 to 0.940 in breadth.

The eggs are medium in size, oval in shape and measure 0.044 to 0.50 in length and 0.035 to 0.046 in breadth.

**DISCUSSION**

The genus Cochoristica was erected by Luhe, 1898 as a type species *O. tuberculata* in *Lacetra, Eumeces, Cerastes, Agama, Uromastix, Varanus* etc.; Europe. Also in *Coelopeltis* sp. in Morocco.

After going through the literature, the worm under discussion, turned out to be *Cochoristica fibrata* Meggitt, 1927.
The present cestode resembles *O. fibrata* Meggitt, 1927 in having the scolex small, squarish; the mature segments longer than broad, cirrus pouch elongated, cylindrical and the genital pores irregularly alternate; but differs from it, in few characters, which are known as additional characters, as follows:

1. The present tapeworm, differs from *O. fibrata* Meggitt, 1927 in the number of testes (40-42 as against 35-56).

2. The present cestode, differs from it, in the structure of ovary (distinctly bilobed, butterfly shaped in appearance, with 8-10 short, blunt, acini as against bilobed, with 7-8 acini).

3. The present worm, differs from the same, in the position of the genital pores (at 1/3rd to 1/4th as against at 1/4th from the anterior margin of the segments).

As the characters are minor, it is redescribed here, as *Cochoristica fibrata* Meggitt, 1927 from *Boiga cyancus*, *B. multimaculata*, *Pityophis sayi* at Burma; where as the present worms, are being reported from *Hemidactylus coctaei* collected at Rahta, Tq.Kopergaon, Dist. Ahmednagar, M.S., India.
<table>
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<th>Type species</th>
<th>Cochoristica fibrata</th>
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</thead>
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<tr>
<td></td>
<td>Meggitt, 1927.</td>
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<tr>
<td>Host</td>
<td>Hemidactylus coctaei.</td>
</tr>
<tr>
<td>Habitat</td>
<td>Intestine.</td>
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<tr>
<td>Locality</td>
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</tr>
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<td>Date of collection</td>
<td>24th July, 1991.</td>
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Anoplocephalidea  Wardle, McLeod and Radinovsky, 1974.

Thysanosomidae  Fuhrmann, 1907.

Stilesia  Railliet, 1893.

**Stilesia indicus**  n.sp.

**INTRODUCTION**

The genus **Stilesia** is erected by Railliet in 1893 from *Ovis aries* in Europe, Asia and Africa, as **Stilesia globipunctata**. Later on *S. hepatica* was added to this genus by Wolffhugel in 1903 from sheep and goat in East Africa. **Stilesia vittata** was reported by Railliet in 1896 from *Camelus dromedarius* from Africa and India. **Stilesia okapi** is erected as new a species of this genus by Leiper in 1936, from Okapi in Africa; is regarded by Baer (1950), as a variety of **Stilesia globipunctata**. The author agrees with Baer to regard *S. okapi* as a variety of *S. globipunctata*.

Later on following species are added to this genus.

1. **S. leiperi** Kadam, Shinde and Jadhav, 1980.
2. **S. caballeroi** Kalyankar, Deshmukh and Hatwalkar, 1981.
4. **S. aurangabadensis** Majid, Shinde and Jadhav, 1982.

**DESCRIPTION**

Fourteen specimens, of the cestode parasites, were collected from the intestine of an ox, *Bos indicus* at Mamdapur, Tq. Shrirampur, Dist. Ahmednagar, M.S., India; in the month of November, 1990.

The worms were medium in length, with thin musculature, scolex, numerous immature, mature and gravid proglottids.

The scolex is small in size, almost oval in shape, distinctly marked off from the strobila, unarmed, without rostellum, broad in the middle, tapering at both the ends and measures 1.018 in length and 0.929 to 1.411 in breadth. The suckers are large in size, oval in shape, highly muscular, arranged in two pairs, one pair in each half of the scolex, overlapping on each other in each pair and measure 0.553 to 0.624 in length and 0.464 to 0.518 in breadth.

The neck is of medium length, uneven in width, slightly broad anteriorly, narrow posteriorly and measures 3.570 in length and 0.518 to 0.803 in breadth.

The mature segments are thin, broader than long, almost eleven to twelve times broader than long, with
indistinct segmentation, with convex lateral margins and measures 0.063 to 0.092 in length and 1.034 to 1.044 in breadth. The testes are large in size, oval in shape, 14-15 in number, in different segments, in two lateral groups, outside the longitudinal excretory canals, 7-8 in poral group, 6-7 in aporal group and measure 0.019 to 0.029 in length and 0.019 to 0.024 in breadth. The cirrus pouch is small in size, pear shaped in appearance, narrow proximally, broad distally, obliquely placed, situated in the middle of the segments and measures 0.126 in length and 0.010 to 0.029 in breadth. The cirrus is thin, slightly curved, contained within the cirrus pouch, unarmed and measures 0.097 in length and 0.005 in breadth. The vas deferens is short, thin, runs obliquely, towards posterior side of the segments and measures 0.039 in length and 0.005 in breadth.

The ovary is medium in size, follicular in shape, with irregular margin, with 10-12 small, short, round acini, situated on the inner side of the longitudinal excretory canals, almost in the centre of the proglottids and measures 0.092 in length and 0.043 to 0.049 in breadth. The vagina is a thin tube, starts from the genital pore, posterior to the cirrus pouch, runs transversely, curved,
reaches and opens into the ootype and measures 0.218 in length and 0.005 in breadth. The ootype is small in size, oval in shape, lateral to ovary, on the poral side and measures 0.010 in length and 0.005 in breadth.

The genital pores are small in size, oval in shape, marginal, at one third or at the middle of the segments, irregularly alternate and measure 0.019 in length and 0.005 in breadth.

The longitudinal excretory canals are narrow and measure 0.005 in breadth.

The gravid segments are large in size, almost quadrangular in shape, broader than long, almost two times broader than long, each gravid segment with a pair of paruterine organs and measure 0.192 in 0.249 in length and 0.399 to 0.408 in breadth. The uterus is replaced by a pair of paruterine organs, which are medium in size, oval in shape, with uterine cap, placed posterolaterally and obliquely, filled with eggs and measure 0.156 to 0.161 in length and 0.045 to 0.092 in breadth. The eggs measure 0.009 to 0.016 in length and 0.003 to 0.009 in width.
Plate: VII

*Stilesia indicusi* n.sp.

A) Scolex.

B) Mature segment.

C) Gravid segment.
DISCUSSION

The worm under discussion, in having testes 14-15 in number, comes closer to *S. globipunctata* Railliet, 1893, *S. hepatica* Wolffhüegel, 1903, *S. leiperi* Kadam, Shinde and Jadhav, 1980 and *S. kotdwarensis* Malhotra et Capoor, 1983; but differs from them, in many characters as follows:

1. The worm under discussion, in having the testes large, oval, 14-15 in number (7-8 poral and 6-7 aporal); cirrus pouch small, pear shaped, narrow proximally, broad distally, situated in the middle of the segments; ovary medium, follicular, with 10-12 short blunt, round acini, almost in the centre of the segments; vagina thin, posterior to the cirrus pouch and paruterine organs 2 in number in each gravid segment, medium, oval, with uterine cap and filled with eggs.

2. The present tapeworm, differs from *S. globipunctata* Railliet, 1893 in not having the testes 4-7 on each side, cirrus pouch pyriform, ventral to vagina; ovary some what globular, median to ventral vessel; vagina dorsal to cirrus pouch and paruterine organs develop from the uterus.

3. The present cestode, differs from *S. hepatica* Wolffhüegel, 1903 in not having the testes 6-7 on each
side, preovarian, in anterior half of the segments; cirrus pouch almost oval, ovary small, compact, oval; vagina anterior to cirrus pouch and paruterine organs situated internal to the longitudinal excretory vessel.

4. The present form, differs from *S. leiperi* Kadam, Shinde and Jadhav, 1980 in not having the testes 5-6 on each side, postero lateral to ovary; cirrus pouch elongated, cylindrical; ovary almost circular, compact, with small acini; vagina thin and paruterine organs develop from uterus, situated between dorsal and ventral excretory canals.

5. The present worm, differs from *S. kotdwarensis* Malhotra et Capoor, 1983 in not having the testes 1-12 in number in each segment, the number varies from segment to segment, maximum 6 on each side; cirrus pouch oval, ventral to longitudinal excretory canals and paruterine organs small, between dorsal and ventral longitudinal excretory canal.

Additional differentiating characters, with all the species reported till to date, are given in the comparative chart at the end.
The above noted characters, are valid enough, to erect a new species, for these worms and hence the name *Stilesia indicus* n.sp. is proposed, after the species name of the host.

<table>
<thead>
<tr>
<th>Type species</th>
<th><em>Stilesia indicus</em> n.sp.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Host</td>
<td><em>Bos indicus</em></td>
</tr>
<tr>
<td>Habitat</td>
<td>Intestine.</td>
</tr>
<tr>
<td>Locality</td>
<td>Mamdapur, Tq. Shrirampur,</td>
</tr>
<tr>
<td></td>
<td>Dist. Ahmednagar, M.S., India.</td>
</tr>
<tr>
<td>Date of collection</td>
<td>15th November, 1990.</td>
</tr>
</tbody>
</table>
A comparative chart showing the comparative account of *Stilesia* Railliet, 1893.

<table>
<thead>
<tr>
<th>Characters</th>
<th><em>S. globipunctata</em> Railliet, 1893</th>
<th><em>S. vittata</em> Railliet, 1896</th>
<th><em>S. hepatica</em> Walffhuegel, 1903</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Segments</td>
<td>Broader than long, distinct</td>
<td>Broader than long</td>
<td>Broader than long, craspedote.</td>
</tr>
<tr>
<td></td>
<td>segmentation</td>
<td>segmentation not distinct.</td>
<td></td>
</tr>
<tr>
<td>Testes</td>
<td>In two groups, 4-7 on each</td>
<td>In two groups, 5-9 on each</td>
<td>In two groups, 6-7 on each side,</td>
</tr>
<tr>
<td></td>
<td>side.</td>
<td>side.</td>
<td>prevarian, anterior half of the</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>segments.</td>
</tr>
<tr>
<td>Vas deferens</td>
<td>Not closely coiled between</td>
<td>Closely coiled between</td>
<td>Not closely coiled but extends</td>
</tr>
<tr>
<td></td>
<td>cirrus pouch and outer wall</td>
<td>cirrus pouch and outer</td>
<td>upto longitudinal excretory</td>
</tr>
<tr>
<td></td>
<td>of excretory vessel.</td>
<td>wall of excretory vessel.</td>
<td>excretory vessel.</td>
</tr>
<tr>
<td>Cirrus pouch</td>
<td>Small, pyriform, ventral to</td>
<td>Elongated, cylindrical,</td>
<td>almost oval.</td>
</tr>
<tr>
<td></td>
<td>vagina.</td>
<td>cirrus armed.</td>
<td></td>
</tr>
<tr>
<td>Ovary</td>
<td>Somewhat globular, median</td>
<td>Rounded, situated between</td>
<td></td>
</tr>
<tr>
<td></td>
<td>to ventral vessel</td>
<td>Small, compact, oval.</td>
<td></td>
</tr>
<tr>
<td>Vagina</td>
<td>Dorsal to cirrus pouch</td>
<td>Posterior to cirrus pouch.</td>
<td>Anterior to cirrus pouch.</td>
</tr>
<tr>
<td>Uterus</td>
<td>Globular, immediately dorsal</td>
<td>Transverse, large tube,</td>
<td>Transverse small tube, in the</td>
</tr>
<tr>
<td></td>
<td>and close to the ovary.</td>
<td>near anterior margin.</td>
<td>near the centre.</td>
</tr>
<tr>
<td>Paruterine organs.</td>
<td>From uterus paruterine organs</td>
<td>From uterus two big</td>
<td>Situated internal to longitudinal</td>
</tr>
<tr>
<td></td>
<td>develop.</td>
<td>paruterine organs develop,</td>
<td>excretory vessel.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>excretory vessel. internal to excretory vessels.</td>
<td></td>
</tr>
<tr>
<td>Host</td>
<td><em>Ovis aries</em></td>
<td><em>Camelus dromedarius</em></td>
<td><em>Capra hircus</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>Camelus bactrianus</em></td>
<td><em>Ovis aries</em></td>
</tr>
</tbody>
</table>

48
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Segments</td>
<td></td>
<td>Much broader than long.</td>
</tr>
<tr>
<td></td>
<td>Broader than long</td>
<td></td>
<td>Small, oval, near posterior margin of segments.</td>
</tr>
<tr>
<td></td>
<td>In two groups, 5-6 on each side, 11 on each side.</td>
<td>Small, oval, near posterior margin of segments.</td>
<td>In two groups, only 4 in each group.</td>
</tr>
<tr>
<td></td>
<td>posterolateral to ovary</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Testes</td>
<td>Forms a less dense bundle of convolutions anterior to</td>
<td>Very much coiled, reaching up to ovary.</td>
</tr>
<tr>
<td></td>
<td>Not closely coiled, but extends beyond longitudinal excretory</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>vessel</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cirrus pouch</td>
<td></td>
<td>Large, sac like.</td>
</tr>
<tr>
<td></td>
<td>Elongated, cylindrical,</td>
<td>Oven</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ary</td>
<td></td>
<td>Medium, almost round, compact without acini, in</td>
</tr>
<tr>
<td></td>
<td>Medium sized, almost circular, compact, with small acini.</td>
<td></td>
<td>the centre of the segments.</td>
</tr>
<tr>
<td></td>
<td>Vagina</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Posterior to cirrus pouch</td>
<td></td>
<td>Posterior to cirrus pouch.</td>
</tr>
<tr>
<td></td>
<td>Broad transverse tube, in anterior half of the segment, with</td>
<td></td>
<td>Sacular, thin transverse tube with 2 sacs.</td>
</tr>
<tr>
<td></td>
<td>two lateral sacs, having paruterine organs at distal end.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Uterine organs</td>
<td>Spherical, on postlateral surface.</td>
<td>Large, oval, located in sacs containing group of</td>
</tr>
<tr>
<td></td>
<td>Develop from uterus, situated between dorsal and ventral</td>
<td></td>
<td>eggs (10-15).</td>
</tr>
<tr>
<td></td>
<td>excretory canals.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ovis bharal</td>
<td>Capra hircus</td>
<td>Capra hircus</td>
</tr>
<tr>
<td>--------------</td>
<td>---------------------------------------------------</td>
<td>------------------------------------------</td>
<td>------------------------------------------</td>
</tr>
<tr>
<td>Segments</td>
<td>Much more broader than long.</td>
<td>Broader than long.</td>
<td>Broader than long.</td>
</tr>
<tr>
<td>Testes</td>
<td>In two lateral groups, round, 5-on each lateral side.</td>
<td>Oval to spherical, 0-9 in number on each lateral side.</td>
<td>Oval to spherical, 1-12 in number in each segment and the number varies from segment to segment maximum 6 on each side.</td>
</tr>
<tr>
<td>Vas deferens</td>
<td>Straight, reaches near to the excretory canal.</td>
<td>Coiled, extends up to longitudinal excretory canal.</td>
<td>Coiled reaches up to longitudinal excretory canal.</td>
</tr>
<tr>
<td>Cirrus pouch</td>
<td>Elongated, cylindrical, cirrus coiled.</td>
<td>Oval, extending halfway between lateral margin and longitudinal excretory canal.</td>
<td>Oval, extending half way across between lateral margin and ventral to longitudinal excretory canal.</td>
</tr>
<tr>
<td>Ovary</td>
<td>Medium, circular, compact.</td>
<td>Small, spherical.</td>
<td>Small, spherical.</td>
</tr>
<tr>
<td>Vagina</td>
<td>Thin tube, posterodorsal to cirrus pouch.</td>
<td>-</td>
<td>Posterior to cirrus pouch.</td>
</tr>
<tr>
<td>Uterus</td>
<td>Uterus with two lateral enlarged sacs which contain paruterine organs</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Paruterine organs</td>
<td>-</td>
<td>Small, 2 in number, One on each lateral side of segment.</td>
<td>Small, between dorsal and ventral longitudinal excretory canal.</td>
</tr>
<tr>
<td>Host</td>
<td>Ovis bharal</td>
<td>Capra hircus</td>
<td>Ovis aries</td>
</tr>
<tr>
<td>Characters</td>
<td>S.marathwadaensis Shinde, Jadhav and Phad, 1985.</td>
<td>S.indicus n.sp.</td>
<td></td>
</tr>
<tr>
<td>--------------------</td>
<td>-----------------------------------------------</td>
<td>-----------------</td>
<td></td>
</tr>
<tr>
<td>Segments</td>
<td>Broader than long.</td>
<td>Thin, 11-12 times broader than long.</td>
<td></td>
</tr>
<tr>
<td>Testes</td>
<td>Round, in two groups, 5-7 in number posteralateral to ovary</td>
<td>Large, oval, 14-15 in number(7-8 poral, 6-7 aporal), in two lateral groups.</td>
<td></td>
</tr>
<tr>
<td>Vas deferens</td>
<td>Straight, runs up to longitudinal excretory canal.</td>
<td>Short, thin, runs obliquely, towards posterior side of the segments.</td>
<td></td>
</tr>
<tr>
<td>Cirrus pouch</td>
<td>Oval, elongated, cylindrical, present at anterior margin of segment.</td>
<td>Small, pear shaped, narrow proximally, broad distally, situated in the middle of the segments.</td>
<td></td>
</tr>
<tr>
<td>Ovary</td>
<td>Medium, oval, compact, in anterior half of segments.</td>
<td>Medium, follicular, with 10-12 short, round acini, almost in the centre.</td>
<td></td>
</tr>
<tr>
<td>Vagina</td>
<td>Posterior side of cirrus pouch.</td>
<td>Thin, posterior to cirrus pouch.</td>
<td></td>
</tr>
<tr>
<td>Uterus</td>
<td>Uterus thin transverse tube, near anterior margin of segment with two large sacs.</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Paruterine organs</td>
<td>2 in number, oval in shape, large, containing group of (12-15) eggs at the centre.</td>
<td>2 paruterine organs, medium, oval, with uterine cap, filled with eggs.</td>
<td></td>
</tr>
<tr>
<td>Host</td>
<td>Capra hircus</td>
<td>Bos indicus</td>
<td></td>
</tr>
</tbody>
</table>
Eucestoda
Wardle, McLeod and Radinovsky, 1974.

Anoplocephalidea
Wardle, McLeod and Radinovsky, 1974.

Thysanosomidae
Fuhrmann, 1907.

Stilesia
Railliet, 1893.

Stilesia leiperi Kadam, Shinde and Jadhav, 1980.

DESCRIPTION

Fourteen specimens, of the cestode parasites, were collected from the intestine of a goat, *Capra hircus* at Babhaleshwar, Tq. Shrirampur, Dist. Ahmednagar, M.S., India; in the month of May, 1991.

The worms were fairly long, with thin musculature, scolex, numerous immature, mature and gravid proglottids.

The scolex is large in size, almost globular in shape, distinctly marked off from the strobila, unarmed, without rostellum, broad anteriorly, narrow posteriorly and measures 1.175 in length and 0.356 to 1.008 in breadth. The suckers are large in size, oval in shape, highly muscular, arranged horizontally almost in a line, in the anterior region of the scolex, all slightly overlapping on each other and measure 0.371 to 0.440 in length and 0.258 to 0.364 in breadth.
The neck is of medium length, uneven in width, slightly broad anteriorly, narrow posteriorly and measures 1.311 in length and 0.341 to 0.409 in breadth.

The mature segments are thin, small in size, broader than long, almost six to seven times broader than long, with indistinct segmentation, unequal in length, with convex lateral margins, with slight, short, blunt projections at the posterior corners of the segments and measure 0.126 to 0.209 in length and 1.214 to 1.258 in breadth. The testes are medium in size, oval in shape, in two lateral fields, 8-10 in number, in different segments, 4-5 on poral side, 4-5 on aporal side, outside the longitudinal excretory canals, towards the anterior side or at the middle of the segments and measure 0.034 to 0.043 in length and 0.029 to 0.039 in breadth. The cirrus pouch is medium in size, pyriform in appearance, situated at the anterior 1/3 rd to 1/4 th of the segments, obliquely placed, directed posteriorly and measures 0.112 in length and 0.019 to 0.039 in breadth. The cirrus is thin, slightly curved, unarmed, contained within the cirrus pouch and measures 0.107 in length and 0.005 in breadth. The vas deferens is short, thin, obliquely
placed, extends towards the anterior side of the segments, curved and measures 0.058 in length and 0.005 in breadth.

The ovary is a single mass, large in size, follicular, with irregular margin, with 6-8 short, blunt, round acini, placed mostly in the anterior half or in the centre of the segments, in side the longitudinal excretory canals and measures 0.083 in length and 0.049 to 0.063 in breadth. The vagina is a thin tube, arises from the genital pores, runs transversely and obliquely, situated posterior to cirrus pouch, curved, extends medially, reaches and opens in to the ootype and measures 0.340 in length and 0.005 to 0.010 in breadth.

The ootype is small in size, oval in shape, lateral to ovary, towards the poral side of it and measures 0.019 in length and 0.015 in breadth.

The genital pores are small in size, oval in shape, situated at the anterior 1/3rd to 1/4 th of the segments, marginal, irregularly alternate and measure 0.039 in length and 0.010 in breadth.

The longitudinal excretory canals are narrow and measure 0.005 in breadth.
Plate: VIII

*Syclesia leiperi* Kadam, Shinde and Jadhav, 1980.

A) Scolex.
B) Mature segment.
C) Transitional segment.
D) Gravid segment.
The gravid segments are small in size, almost curved, transversely elongated, broader than long, almost 11 to 12 times broader than long, contain a pair of paruterine organs, with convex lateral margins and measure 0.129 to 0.167 in length and 1.796 to 1.857 in breadth. The uterus is modified into a pair of paruterine organs in each gravid segment, which are oval in shape, with uterine cap, transversely placed and measures 0.174 to 0.197 in length and 0.083 to 0.091 in breadth.

**DISCUSSION**

After going through the literature and on closer observation, these worms proved to be *Stilesia leiperi* Kadam, Shinde and Jadhav, 1980. These worms resemble it in having the mature segments broader than long, vagina posterior to the cirrus pouch, structure of ovary and 2 paruterine organ. in each segment and many other characters, but differ from the same, in few characters, which are as follows:

1. The present worm, differs from *Stilesia leiperi* in the shape of the scolex (small, round as against large, globular).
2. The present tapeworm, differs from it, in the number of the testes (5-6 on each side as against 4-5 on pach side).

3. The present cestode, differs from the same, in the shape of cirrus pouch (cylindrical and elongated as against medium and pyriform in appearance).

As the character are minor, it is redescribed here as *Stilesia leiperi* Kadam, Shinde and Jadhav, 1980, Kadam, Shinde and Jadhav, 1980 reported their worms, from *Ovis bharal* at Aurangabad, M.S., India; where as the present worms, are being reported from *Capra hircus* at Babhaleshwar, Tq. Shrirampur, Dist. Ahmednagar, M.S., India.

Type species: *Stilesia leiperi* Kadam, Shinde and Jadhav, 1980.

Host: *Capra hircus*.

Habitat: Intestine.

Locality: at Babhaleshwar, Tq. Shrirampur Dist. Ahmednagar, M.S., India.

Hymenolepididea  Wardle, McLeod and Radinovsky, 1974.
Hymenolepididae  Railliet and Henry, 1909.
Hymenolepis  Weinland, 1858.

**Hymenolepis diminuta** Lopez-Neyra, 1944.

**DESCRIPTION**

Seventeen specimens of the cestode parasites, were collected from intestine of a rat, *Rattus rattus* at Shirdi, Tq. Kopergaon, Dist. Ahmednagar, M.S., India; in the month of February, 1991.

The worms were fairly long, thin, delicate, with scolex, immature, mature and gravid proglottids.

The scolex is small in size, almost globular in shape, distinctly marked off from the strobila and measures 0.087 to 0.156 in length and 0.149 to 0.209 in breadth. The rostellum is small in size, oval in shape, unarmed, slightly protruded and measures 0.009 in length and 0.021 in breadth. The rostellar sac is medium in size, oval in shape, extends posteriorly, upto the middle of the anterior pair of suckers and measures 0.064 in length and 0.033 to 0.040 in breadth. The suckers are large in size,
almost oval in shape, arranged in two pairs, one pair in each half of the scolex, equidistantly placed, overlapping on each other in each pair and measure 0.049 to 0.066 in length and 0.052 to 0.064 in breadth.

The neck is long, broad anteriorly, narrow posteriorly and measures 0.432 to 0.501 in length and 0.052 to 0.064 in breadth.

The mature segments are small in size, almost quadrangular in shape, transversely elongated, broader than long, almost three times broader than long, with convex lateral margins, without projections at the posterior corners of the segments and measure 0.379 to 0.466 in length and 1.064 to 1.165 in breadth. The testes are large in size, oval in shape, three in number, one poral and two aporal in position, in a triangle, lateral to ovary, inside the longitudinal excretory canals and measure 0.184 to 0.189 in length and 0.155 to 0.165 in breadth.

The cirrus pouch is small in size, slightly spindle shaped in appearance, obliquely placed, in the anterior half of the segments, extends towards the anterior margin of the same and measures 0.141 in length and 0.019 to 0.034 in breadth. The cirrus is thin, slightly curved, contained with in the cirrus pouch and measures 0.150 in length and 0.005 in breadth.
The vas deferens is thin, curved, short and measures 0.087 in length and 0.005 in width.

The ovary is medium in size, distinctly bilobed, with unequal lobes, obliquely placed, poral lobe larger than aporal one in the centre of the segments, compact and measures 0.311 in length and 0.072 to 0.083 in breadth. The vagina is wide, starts from the genital pore posterior to cirrus pouch, runs obliquely upto the longitudinal excretory canals, enlarges and forms the receptaculum seminis, turns posteriorly, reaches and opens in to the ootype and measures 0.485 in length and 0.015 to 0.024 in breadth. The receptaculum seminis is large in size, semicircular or bean shaped in appearance, broad in the middle, tapering at both the ends, situated in the anterior half of the segments and measures 0.383 in length and 0.039 to 0.078 in breadth. The ootype is small in size, round in shape, postovarian and measures 0.029 in diameter.

The genital pores are large in size, oval in shape, marginal, unilateral, situated at the anterior one third of the segments and measure 0.097 in length and 0.029 to 0.048 in breadth.

The longitudinal excretory canals are thin and measure 0.010 to 0.015 in width.
Plate: IX

*Hymenolepis diminuta* Lopez-Neyra, 1944.

A) Scolex.
B) Mature segment.
C) Gravid segment.
D) Eggs.
The vitelline gland is large in size, roughly triangular, lobulated, postovarian with irregular margin, having 11-12 short blunt, round acini and measures 0.165 in length and 0.049 to 0.107 in breadth.

The gravid segments are small in size, almost quadrangular, but elongated transversely, broader than long, almost two and half times broader than long, with convex lateral margins and measure 0.461 to 0.552 in length and 1.068 to 1.185 in breadth. The uterus is large in size, Saccular, completely occupy the centre of the gravid segments and divided into lobes. The eggs are large in size, oval in shape, non-operculated and measure 0.029 to 0.050 in length and 0.036 in breadth.

**DISCUSSION**

The genus *Hymenolepis* was erected by Weinland, 1858. As a type species *H. diminuta* Lopez-Neyra, 1944 in *Rattus, Mus, Apodemus, Citellus, etc.*, cosmopolitan, Also in man *Cercopithecus*.

After going through the literature, the worm under discussion, turned out to be *H. diminuta* Lopez-Neyra, 1944.

The present cestode, resembles it, in having the rostellum small, oval, the rostellar sac medium, mature segments broader than long, without projections at posterior corners of
the segments; testes 3 in number, 1-oral, 2-aporal, arranged in a triangle; cirrus thin, vagina posterior to the cirrus pouch and uterus saccular; but differs from it. in few characters, which are as follows:

1. The present tapeworm, differs from Hymenolepis diminuta in the size and shape of the scolex (small, globular Vs. round, spatulate).

2. The present worm, differs from the same, in the shape of the cirrus pouch (spindle shaped Vs. cylindrical).

3. The present form, differs from it, in the size, shape and structure of vitelline gland (large, roughly triangular, with irregular margin having 11-12 short, blunt, round acini Vs. medium, oval and compact).

As the characters are minor, it is redescribed here, as Hymenolepis diminuta reported from Rattus, Mus, Apodemus, Citellus, etc., cosmopolitan, where as the present worm is being reported from Rattus rattus at Shirdi, Tq. Kopargaon, Dist. Ahmednagar, M.S., India.

Type species

Hymenolepis diminuta

Lopez-Neyra, 1944.

Host

Rattus rattus.

Habitat

Intestine.

Locality

Shridi, Tq. Kopargaon, Dist. Ahmednagar, M.S., India.

Date of collection

Eucestoda

Wardle, McLeod and
Radinovsky, 1974.

Hymenolepididea

Wardle, McLeod and
Radinovsky, 1974.

Hymenolepididae

Railliet and Henry, 1909.

Oligorchis

Fuhrmann, 1906.

Oligorchis cyanocitti Coil, 1955.

DESCRIPTION

Ten specimens, of the cestode parasites, were collected from the intestine of a Myna, Acridootherus tristis at Songaon, Tq. Rahuri, Dist. Ahmednagar, M.S., India; in the month of August, 1990.

The worms were medium in length, with thin musculature, scolex, numerous immature and mature proglottids.

The scolex is large in size, almost triangular or dome shaped in appearance, distinctly marked off from the strobila, armed, narrow anteriorly, broad posteriorly and measures 0.114 to 0.170 in length and 0.107 to 0.196 in breadth. The rostellum is large in size, oval in shape, armed with a single circle of hooks and measures 0.017 in length and 0.031 in breadth. The rostellar sac is medium in size, cylindrical
in shape, extends posteriorly, upto the middle of the anterior pair of suckers and measures 0.087 in length and 0.036 to 0.042 in breadth. The hooks are medium in size, 10 in number, single pronged, like a blade, arranged in a single circle, unequal in size and measure 0.025 to 0.030 in length and 0.003 to 0.005 in breadth. The suckers are medium in size, oval in shape, arranged in two pairs, one pair in each half of the scolex, overlapping on each other in each pair and measure 0.062 to 0.075 in length and 0.042 to 0.050 in breadth.

The neck is of medium length, uneven in breadth, broad anteriorly, narrow posteriorly and measures 0.158 to 0.170 in length 0.094 to 0.132 in breadth.

The mature segments are broader than long, almost three and half times broader than long, craspedote, uneven in length, with convex lateral margins, with large, blunt conical projections at the posterior corners of the segments and measure 0.306 to 0.330 in length and 0.894 to 1.136 in breadth. The testes are medium to large in size, almost oval in shape, 7 in number, 5-aporal and 2-poral, in the central medulla, unevenly distributed, in two lateral fields and measure 0.087 to 0.146 in length and 0.092 to
0.150 in breadth. The cirrus pouch is small in size, cylindrical in shape, narrow proximally, broad distally, runs parallel to anterior margin of the segments, crosses the longitudinal excretory canals, slightly obliquely placed and measures 0.194 in length and 0.034 to 0.067 in breadth. The cirrus is thin, slightly curved, contained within the cirrus pouch and measures 0.180 in length and 0.005 to 0.010 in breadth. The internal seminal vesicle is large in size, oval in shape, contained within the cirrus pouch, posterior to the cirrus and measures 0.034 in length and 0.024 to 0.039 in breadth. The vas deferens is short, thin, runs obliquely towards the anterior margin of the segments and measures 0.067 in length and 0.005 in breadth.

The ovary is large in size, distinctly bilobed, in the central medulla, compact, ovarian lobes unequal in size and measures 0.471 in length and 0.112 to 0.150 in breadth. The poral lobe is oval in shape and measures 0.267 in length and 0.058 to 0.112 in breadth, whereas the aporal lobe is somewhat triangular in shape.
and measures 0.204 in length and 0.072 to 0.146 in breadth. The vagina is a thick, wide, long tube, arises from the genital pore, runs parallel to the cirrus pouch, posterior to cirrus pouch, turns upwards anteriorly, lie parallel to anterior margin of the segments, enlarges and forms an enormous receptaculum seminis, turns posteriorly, reaches and opens in to ootype and measures 0.301 in length and 0.014 to 0.019 in breadth. The receptaculum seminis is large in size, fusiform in shape, broad in the middle, tapering at both the ends, anterior to the poral lobe of the ovary and measures 0.248 to 0.301 in length and 0.039 to 0.072 in breadth. The ootype is small in size, oval in shape, situated postero ventral to the isthmus and measures 0.024 in length and 0.014 in breadth.

The genital pores are small in size, oval in shape, almost at one third from the anterior margin of the segments, unilateral and measure 0.121 in length and 0.014 to 0.024 in breadth.

The longitudinal excretory canals are of medium size and measure 0.019 to 0.024 in breadth.
Plate: X

Oligorchis cyanocitti Coil, 1955.

A) Scolex.
B) Rostellar hooks.
C) Mature segment.
The vitelline gland is medium in size, almost oval in shape, compact, postovarian, near the posterior margin of the segments and measures 0.097 in length and 0.029 to 0.049 in breadth.

The gravid segments were not available.

**DISCUSSION**

The genus *Oligorchis* was erected by Fuhrmann, 1906 as a type species *O. strangulatus* in *Elanoides furcatus*; Brazil.

After going through the literature, the worm under discussion, turned out to be *Oligorchis cyanocitti* Coi 1955.

The present cestode, resembles *O. cyanocitti* Coi 1955 in having the rostellum oval in shape, neck medium in length, vagina posterior to the cirrus pouch, enlarges and forms receptaculum seminis; but differs from it in few characters, which are known as additional characters, as follows:

1. The present cestode, differs from *O. cyanocitti* Coi, 1955 in the number of testes (7, 5-aporal and 2-portal as against 4).
2. The present tapeworm, differs from the same, in the structure and position of ovary (bilobed, lobes unequal, in the central medulla as against bilobed, large, at the anterior 3/4 th region of the segments).

3. The present worm, differs from it, in the position of genital pores (almost at 1/3 rd from the anterior margin of the segments as against midway of the proglottids).

As the character are minor, it is redescribed here, as Oligorchis cyanocitti Coit, 1955 from Cyanocitti stelleri at Mexico; where as the present worms are being reported from Acridotherus tristis collected at Songaon, Tq. Rahuri, Dist. Ahmednagar, M.S., India.

Type species Oligorchis cyanocitti Coit, 1955.

Host Acridotherus tristis.

Habitat Intestine.

Locality Songaon, Tq. Rahuri, Dist. Ahmednagar, M.S., India.

Date of collection 4th August, 1990.
Eucestoda  
Wardle, McLeod and Radionovsky, 1974.

Hymenolepididea  
Wardle, McLeod and Radionovsky, 1974.

Hymenolepididae  
Railliet and Henry, 1909.

Vampirolepis  
Spassky, 1954.

**Vampirolepis tristisae** n.sp.

**INTRODUCTION**

The genus *Vampirolepis* is erected by Spassky, 1954 with the type species, *V. Semenovi* spassky, 1954 from *Erythrina erythrina* at Smolensk, Oblast, Later on Malhotra and Capoor added *V. somariensis* from *Turdocides striatus* in 1980, at Allahabad, U.P., India, Later on no species is added to this genus.

The present communication, deals with the description of a new species, under the genus *Vampirolepis*, collected at Astgaon, Tq. Kopergaon, Dist. Ahmednagar, M.S., India.

**DESCRIPTION**

Thirteen specimens, of the cestode parasites, were collected from the intestine of a Myna, *Acridotherus tristis* at Astgaon, Tq. Kopergaon, Dist. Ahmednagar, M.S., India; in the month of October, 1991.

The worms were thin, short, with scolex, immature and mature proglottids.
The scolex is small in size, globular in shape, distinctly marked off from the strobila, broad in the middle, tapering on both the sides and measures 0.099 to 0.204 in length and 0.071 to 0.175 in breadth. The rostellum is small in size, oval in shape, slightly protruded at its tip, armed with a single circle of hooks and measures 0.017 in length and 0.038 in breadth. The hooks are ten in number, arranged in a single circle, unequal in size, stout, bipronged and measure 0.019 to 0.030 in length and 0.003 to 0.004 in breadth. The rostellar sac is large in size, cylindrical in shape, extends almost upto the posterior margin of the anterior pair of suckers and measures 0.068 in length and 0.017 to 0.023 in breadth. The suckers are medium in size, oval in shape, arranged in two pairs, one pair in each half of the scolex and measure 0.055 to 0.062 in length and 0.040 to 0.057 in breadth.

The neck is short, of medium width and measures 0.090 to 0.133 in length and 0.120 to 0.135 in breadth.

The mature segments are broader than long, almost two and half times broader than long, craspedote, with unequal length, with large, round, blunt projections at the posterior corners of the segments, with irregular lateral margins and measure 0.413 to 0.437 in length and
0.927 to 1.112 in breadth. The testes are large in size, oval in shape, three in number, one poral, two antiporal in position, in the central medulla, bounded laterally by longitudinal excretory canals, arranged in a triangle and measures 0.131 to 0.189 in length and 0.131 to 0.165 in breadth. The cirrus pouch is medium in size, cylindrical in shape, obliquely placed, in the anterior one third of the segments, extends beyond the longitudinal excretory canals and measures 0.223 in length and 0.039 to 0.072 in breadth. The cirrus is a thin tube, unarmed, slightly curved, contained within the cirrus pouch and measures 0.160 in length and 0.010 in breadth. The internal seminal vesicle is small in size, oval in shape and measures 0.049 in length and 0.015 to 0.024 in breadth. The vas deferens is thin, short, slightly coiled, extends upto the middle of the segments and measures 0.194 in length and 0.005 in breadth.

The ovary is medium in size, irregular in shape, indistinctly bilobed, in the central medulla, in the anterior half of the segments, lobes unequal in size and structure, each with 3-5, short, blunt, round acini and measures 0.257 in length and 0.072 to 0.155 in breadth. The vagina is a thin tube, starts from the genital pore, posterior to the cirrus pouch, runs transversely and obliquely,
Plate: XI

Vampirolepis tristisae n.sp.

A) Scolex.
B) Rostellar hooks.
C) Mature segment.
for a long distance, then turns posteriorly extends beyond the ovary, enlarges to form a small receptaculum seminis, reaches and opens into the ootype and measures 0.534 in length and 0.010 to 0.015 in breadth. The receptaculum seminis is small in size, oval in shape, postovarian, obliquely placed and measures 0.078 in length and 0.010 to 0.034 in breadth. The ootype is small in size, oval in shape, postovarian and measures 0.024 in length and 0.019 in breadth.

The genital atrium is medium in size, oval in shape, highly muscular, marginal and measures 0.072 in length and 0.067 to 0.087 in breadth. The genital pores are small in size, oval in shape, marginal, in the anterior half of the segments, irregularly alternate, almost at one third from the anterior margin of the same and measure 0.053 in length and 0.015 to 0.019 in breadth.

The longitudinal excretory canals are wide and measure 0.015 to 0.019 in width.

The vitelline gland is large in size, irregular in shape, with 5-6, short, blunt, round acini, postovarian, near the posterior margin of the segments and measures 0.112 in length and 0.072 to 0.102 in breadth.

DISCUSSION

The genus _Vampirolepis_ is erected by Spassky 1954, as type species _V. semenovi_ from Erythrina erythrina, Smolensk, Oblast. Later on Malhotra and Capoor added _V. somariensis_
in 1980, which was reported from *Turdoides striatus*. since then no species is added to this genus.

1. The worm under discussion, differs from both the above species, in the number of rostellar hooks (10 vs. 8-10 and 8-18 (13) respectively).

2. The present cestode, differs from them, in the number and arrangement of testes (3, arranged in a triangle, 1 poral, 2 antiporal vs. 3, overlap on each other, in a transverse row and 3, do not overlap, on each other in a transverse row respectively).

3. The present tapeworm, differs from them, in the structure of the cirrus pouch (cylindrical, medium, extends beyond the longitudinal excretory canals, in the anterior 1/3 rd of the segments vs. comparatively short, reaches upto the longitudinal excretory canals and elongated, narrow, extends, beyond the longitudinal excretory canals, reaches upto the centre of the segments respectively).

4. The present form, differs from them, in the structure of the ovary (indistinctly bilobed, in the anterior half of the segments, ovarian lobes with 3-5, blunt, round acini vs. median and bilobed, in the centre of the segment respectively).
5. The present cestode, differs from both of them, in the structure of the vitelline gland (large in size, irregular in shape, postovarian vs. median and triangular respectively).

Additional differentiating characters are given in the comparative chart at the end.

These distinct characters, are enough, to erect a new species, for these worms and hence the name *Vampirolepis tristisae* n.sp. is proposed after the species name of the host.

Type species *Vampiroepis tristisae* n.sp.

Host *Acriodotherus tristis*.

Habitat Intestine.

Locality Astgaon, Tq. Kopergaon, Dist. Ahmednagar, M.S., India.

Date of Collection: 4th October 1991.
Comparative chart showing the characters of the species of the genus *Vampirolepis* Spassky, 1954.

<table>
<thead>
<tr>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Rostellar hooks</td>
<td>8-10</td>
<td>8-18(13)</td>
<td>10</td>
</tr>
<tr>
<td>Scolex</td>
<td>-</td>
<td>-</td>
<td>Small, globular, distinctly marked off from strobila.</td>
</tr>
<tr>
<td>Testes</td>
<td>3, overlap each other in a transverse row.</td>
<td>3, do not overlap in a transverse row.</td>
<td>3, arranged in a triangle, 1-oral, 2-antiporal.</td>
</tr>
<tr>
<td>Cirrus pouch</td>
<td>Comparatively short reaches upto longitudinal excretory canal.</td>
<td>Elongated, narrow, extend beyond the longitudinal excretory canal, reaches upto the centre of the segment.</td>
<td>Cylindrical, medium extends beyond the longitudinal excretory canals, in the anterior 1/3rd of the segments.</td>
</tr>
<tr>
<td>Ovary</td>
<td>Median</td>
<td>Bilobed, in the centre of the segment.</td>
<td>Indistinctly bilobed, in the anterior half of the segments, lobes with 3-5 blunt, round acini.</td>
</tr>
<tr>
<td>Vitelline gland</td>
<td>Median, compact.</td>
<td>Median, triangular.</td>
<td>Large, irregular in shape, postovarian</td>
</tr>
<tr>
<td>Genital pore</td>
<td>-</td>
<td>-</td>
<td>Marginal, irregularly alternate.</td>
</tr>
<tr>
<td>Host</td>
<td><em>Erythrina erythrina</em></td>
<td><em>Turdoides striatus</em></td>
<td><em>Acriderthus tristis</em></td>
</tr>
</tbody>
</table>
SUMMARY: PART 1

The first part, deal with the cestodes of the orders Pseudophyllidea, Taeniidea, Anoplocephalidea and Hymenolepididea.

From the order Pseudophyllidea (family-Ptychobothridae) two new species are described - *Circumobothrium pravarnagarensis* n.sp. and *Circumobothrium godavarensis* n.sp. from *Mastacembelus armatus*.

From the order Taeniidea (family-Taeniidae) one species is redescribed as *Taenia rileyi* Lowen, 1929 from *Felis domesticus*.

From the order Anoplocephalidea (family-Anoplocephalidae) one species is redescribed as *Moniezia (Blanchariezia)bharalae* Shinde, Jadhav and Kadam, 1985 from *Capra hircus*; from family Linstowiidae one species is described *Oochoristica luhei* n.sp. from *Varanus indicus* and one species is redescribed as *Oochoristica fibrata* Meggitt, 1927 from *Hemidactylus coctaui* and from family-Thysanosomidae one species is described *Stilesia indicusi* n.sp. and one species is redescribed as *Stilesia leiperi* Kadam, Shinde and Jadhav, 1980.

From the order Hymenolepididea (family Hymenolepididae) one species is redescribed as *Hymenolepis diminuta* Lopez-Neyra, 1944 from *Rattus rattus*; one species is redescribed as *Oligorchis cyanocittii* Coeli, 1955 and one species is described *Vampirolepis tristisae* n.sp. from *Acridotherus tristis*.