

FLORA AND FAUNA

2015 Vol. 21 No. 2 PP 225-229

ISSN 0971 - 6920

**FIRST REPORT OF A NEW CARYOPHYLLID WORM, *PSEUDOINVERTA ORAIENSIS* N.G.,N.SP. FROM *CLARIAS BATRACHUS* (LINN.)**

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**Received** : 21.8.15; **Accepted** : 12.10.15

**ABSTRACT**

A new cestode *Pseudoinverta oraiensis* n.g.,n.sp. is described from the fresh water catfish *Clarias batrachus* (Linn.) The present form differs from all the known genera of the family Capingentidae<sup>6</sup> in the shape of ovary and other characters.

Figures : 04

References : 15

Table : 01

KEY WORDS : Caryophyllidea, Catfish, Gohaninala Orai District Jalaun U.P.

**Introduction**

During the course of investigation of piscian tape worm, five fishes, *Carias batrachus* (Linn.) were collected from Gohaninala at Orai, District Jalaun (U.P). One of them harbored single cestode in its intestine. Detailed studies showed that it differs from other genera of the family Capingentide<sup>6</sup> in various characters.

**Material and Methods**

The Fishes were caught by the local fishman from Gohaninala at Orai, District Jalaun. Usual techniques for collection and preservation of the cestode were employed. Whole mounts were stained in Haemalum and cleared in xylol. Figures were drawn with camera lucida. All the measurements have been given in milimeters unless otherwise stated.

**Observation**

**(Generic Diagonosis of *Pseudoinverta oraiensis* n.g.,n.sp.)**

Large sized worm with flat, smooth, blunt

scolex without any spines, cushion and groove. Neck absent. Well developed cirrus pouch with internal seminal vesicle. Inverted U shaped ovary posteriorly located, lateral lobes of ovary situated in cortex and medullary regions while isthmus in medullary region. Receptaculum seminis absent. Mehis gland present, Postovarian follicles absent. Uterus extends posterior to ovary. Eggs oval, nonoperculate. Parasite of fresh water catfishes.

***Pseudoinverta oraiensis*** n.g.,n.sp. (Figs.1-4) (measurements in m.m. unless otherwise stated)

Cestode measures 23.0 in length and 3.6 in maximum width. Scolex smooth, blunt, well differentiated by a constriction, without any cushion or groove, measures 0.956X0.828. Neck absent.

Testes innumerable in number, oval to round measure 0.1-0.142X0.128-0.328(0.128X0.235) in medullary region located anterior to. cirrus pouch. Cirrus pouch oval to round, median measures 0.4X0.570. Internal seminal vesicle measures 0.1X0.2.

Female genitalia posteriorly situated.

Inverted U-shaped ovary measures 0.7X1.628 behind the cirrus pouch. Lateral lobes of ovary situated in cortex and in medullary regions and isthmus in medullary region.

Vitellaria measures 0.070-0.2X0.1-0.156 (0.156X0.135) partly cortical, partly medullary, innumerable in number mostly anterior to uterus. Receptaculum seminis absent. Mehlis gland measures 0.177X0.170 Uterus long nonglandular, coiled medullary situated posterior and anterior to the ovarian isthmus. Uterus extends 2.442 in length and 0.8-2.0(1.7) in width. Male and female genital pores open separately situated near the cirrus pouch. Eggs oval, nonoperculate measure 0.014-0.021X0.014-0.028(0.018X0.021).

### Result and Discussion

Presently twenty genera have been included in the family capingentidae<sup>6</sup>, order Caryophyllidea<sup>1</sup>.

This form comes closer to genera *pseudolytocestus*<sup>5</sup>, *Pseudocaryophyllus*<sup>3</sup>, *Pseudoadenoscolex*<sup>10</sup>, *Pseudoclariasis*<sup>12</sup>, *Pseudobatrachus*<sup>13</sup>, *Pseudobilobulata*<sup>17</sup>, *Pseudobeanata*<sup>18</sup>, *Pseudoauricularia*<sup>7</sup> and *Pseudounevenata*<sup>7</sup>.

The present form differs from *Pseudolytocestus*<sup>5</sup> in having well develop scolex, sac like internal seminal vesicle, absence of external seminal vesicle, extension of testes, inverted U-shaped ovary, distinct mehlis gland and uterus extended up to post ovarian region.

From *Pseudocaryophyllaeus*<sup>3</sup> it differs in having absence of neck, inverted U-shaped ovary and presence of mehlis gland.

From *Pseudoadenoscolex*<sup>10</sup> it differs in having differentiated scolex, sac like internal seminal vesicle, inverted U-shaped ovary, mehlis gland and uterus extended up to post ovarian region.

This form differs from *pseudoclariasis*<sup>12</sup> in having larger size worm, Inverted U-shaped ovary, presence of mehlis gland and non operculated eggs.

The Present form differs from *Pseudobatrachus*<sup>13</sup> in having large size worm, absence of neck, presence of internal seminal vesicle, inverted U-shaped ovary, presence of mehlis gland and nonoperculated eggs.

From *pseudobilobulata*<sup>17</sup> it differs in having sac like internal seminal vesicle, inverted U-shaped

ovary, presence of mehlis gland and nonoperculated eggs.

The present form differs from *pseudobeanata*<sup>18</sup> in having large size worm, absence of external seminal vesicle, inverted U-shaped ovary and presence of mehlis gland.

From *Pseudouricularia*<sup>7</sup> it differs in having larger worm, presence of internal seminal vesicle, inverted U-shaped ovary and presence of mehlis gland.

The present form differs from *pseudounevenata*<sup>7</sup> in having larger worm, inverted U-shaped ovary and presence of mehlis gland.

Thus the proposed new genus *Pseudoinverta* n.g. differs from all known genera of the family capingentidae<sup>6</sup>. In the light of above discussion the genus *Pseudoinverta* n.g. may be provisionally accommodated as a new genus.

New genus is named on the shape of ovary, while species is named after the place from it was collected.

Type species - *Pseudoinverta oraiensis*

Host - *Clarias batrachus* (Linn.)

Habitat - Intestine

Locality - Gohaninala at Orai, District Jalaun (U.P.)

Date of Collection-22/04/2000

number of Specimens- 01

Accession Number

Deposition - Parasitological Laboratory  
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Jhansi (U.P.) India

### Revised Key to the various genera of the family capingentidae<sup>6</sup>

1. Post-ovarin median vitellria present—————2  
Post-ovarian median vitellaria absent—————6
2. Uterine coils extend anterior to cirrus pouch,  
scolex with two large bothria—————*Capingens*<sup>4</sup>  
Uterine coils not extending anterior to cirrus  
pouch, scolex lacking bothria—————3
3. Ovary inverted A-shaped—————*Adenoscolex*<sup>2</sup>  
Ovary not as above—————4
4. Ovary dumbbell-shaped; scolex quite reduced;  
neck absent—————*Breviscolex*<sup>8</sup>  
Ovary otherwise; scolex well developed, neck

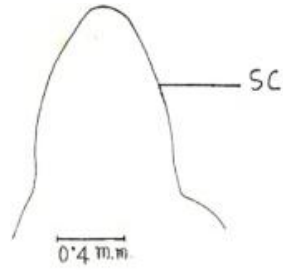


Fig. 1



Fig. 2

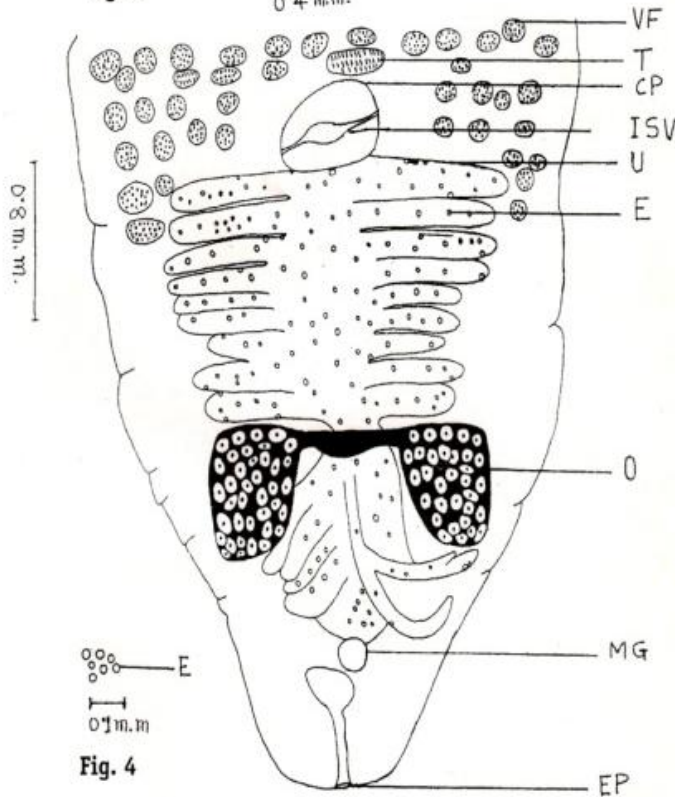


Fig. 3

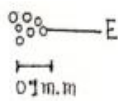


Fig. 4

*Pseudoinverta oraiensis* n.g., n.sp.,  
 Fig.1-Scolex (5X10),  
 Fig.2-Middle region of the body (5X10),  
 Fig.3-Posterior region of the body (5X10),  
 Fig.4-Eggs (5X10)

*Pseudoinverta oraiensis* n.g., n.sp.

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|--|--|--|--|
| present  | 5                                      | Ovary uneven bilobed                       | <i>Pseudounevenata</i> <sup>7</sup>      |
| 5. Ovary H- shaped   | <i>Edlintonia</i> <sup>11</sup>        | Ovary bean shaped                          | <i>Pseudobeanata</i> <sup>18</sup>       |
| Ovary band- shaped   | <i>Capingentoides</i> <sup>3</sup>     | 9. Neck small, ovary-bilobed               |  |
| 6. Ovary U- shaped, Uterine coils extending anterior to cirrus pouch     | <i>Spartoides</i> <sup>5</sup>         |  | <i>Pseudobilobulata</i> <sup>17</sup>    |
| Ovary U- shaped, uterine coils not extending anterior to cirrus pouch    | <i>Mystoides</i> <sup>9</sup>          | Neck Medium, ovary inverted A-shaped       |  |
| Ovary not U-shaped, uterine coils not extending anterior to cirrus pouch | 7                                      |  | <i>Pseudoheteroinverta</i> <sup>15</sup> |
| 7. Neck absent   | 8                                      | Neck Medium, ovary omega-shaped            |  |
| Neck present   | 9                                      |  | <i>Sukhpatae</i> <sup>16</sup>           |
| 8. Ovary H-shaped  | <i>Pseudolytocestus</i> <sup>5</sup>   | Neck medium, ovary M-shaped with long arms |  |
| Ovary inverted A- shaped   | <i>Pseudoadenoscolex</i> <sup>10</sup> |  | <i>Sudhaena</i> <sup>7</sup>             |
| Ovary fan-shaped   | <i>Pseudoclariasis</i> <sup>12</sup>   | Very long neck, ovary band-shaped          |  |
| Ovary inverted U-shaped  | <i>Pseudoinverta n.g.</i>              |  | <i>Pseudocaryphyllaeus</i> <sup>3</sup>  |
| Ovary ear- shaped  | <i>Pseudoauricularia</i> <sup>7</sup>  | Very long neck, ovary H-shaped             |  |
|  |  |  | <i>Pseudobatrachus</i> <sup>13</sup>     |
|  |  | Very long neck, ovary inverted A-shaped    |  |
|  |  |  | <i>Heeradevina</i> <sup>14</sup>         |

## References

- BENEDEN, P.J. VAN AND OLESSON, M. (1893) Kgl. Svernska vetenskapskad. hand. **25**:1-41.
- FOTEDAR, D.N. (1958) On a new cestode parasite (Proteocephalidae: Cestoda) *Kashmir Sci.*, **31**:17-32.
- GUPTA, S.P. (1961) Caryophyllaeids (cestoda) from freshwafer fishes of India. *Proc. Helminthol. Soc.*, **73**:183-186.
- HUNTER, G.W. III (1927) Notes on the Caryophyllaeidae of North America. *J. Parasitol.*, **14**:16-26.
- HUNTER, G.W. III (1929) New caryophyllaeidae from North America. *J. Parasitol.*, **15**:185-192.
- HUNTER, G.W. III and Hunter, W.S. (1930) Studies on the parasites of fishes of the Lake Champlain watershed. Annu. Rep. N.Y. state conservancy Dep. *Biol. Surv. Suppl.*, pp. 197-216.
- KHARE, R.K. (2006) 'Morphotaxonomy of Piscian cestodes and ecological observations of *Mastacembelus armatus* (Lacepede) in relation to parasitic infestation' Ph. D. Thesis, Bundelkhand Univ., Jhansi (U.P.) India pp. 1-185.
- KULAKOVASKAYA, O.P. (1962) *Breviscolex orientalis* n.g., n.sp. (Caryophyllaeidae. Cestoda) from fish in the Amur basin (In Russian). *Dokl. Acad. Nauk SSSR*, **143**:1001-1004.
- MATHUR, N. (1992) 'Morphotaxonomy of piscian cestodes and their ecological study in *Heteropneustes fossilis* (Bloch)' Ph.D. Thesis, Bundelkhand Univ., Jhansi (U.P.) India, pp.1-166
- MATHUR, N. AND SRIVASTAV, A.K. (1994) Study of a new cestode, *Pseudoadenoscolex fossilis* n.g., n.sp. from freshwater cat fish, *Heteropneustes fossilis* (Bloch) U.P. *J. Zool.*, **14**(1): 33-36.
- MACKIEWICZ, J.S. (1970) *Edlintonia ptychocheila* gen. n., sp.n. (Cestoidea: Capingentidae) and other caryophyllid tapeworms from cyprinid fishes of North America *Proc. Helminthol. Soc. Wash.* **37**:110-118.
- PATHAK, A (2002) 'Studies on the morphology, taxonomy and ecology of piscian cestode parasites of district Jalaun' Ph.D. Thesis, Bundelkhand Univ., Jhansi (U.P.) India pp. 1-244.
- PATHAK, A. AND SRIVASTAV, A.K. (2005) Morphotaxonomical study of a new cestode, *Pseudobatrachus chandrai* n.g., n.sp. from freshwater cat fish, *Clarias batrachus* (Linn.) *Ind. J. Environ. Sci.*, **9**(2):141-143.
- SRIVASTAV, A.K. AND LOHIA, S. (2002) Status of *Pseudobilobulata* n.g. (Capingentidae Hunter, 1930) with description of a new species from freshwater fish of Jhansi, Uttar Pradesh, India *Flora and Fauna*, **8**(2): 75-76.
- SRIVASTAV, A.K., SAHU, V.K. AND KHARE R.K. (2007) First report of a new Caryophyllid worm, *Pseudobeanata paleraensis* n.g., n.sp. from *clarias batarachus* (Linn.) *Flora and Fauna* 2007 **13** (2) 439-444.