



MORPHOLOGICAL INVESTIGATION OF A NEW SPECIES OF AZYGIA, DIESING, 1854 FROM FRESHWATER FISH CHANNA PUNCTATUS (BLOCH) IN BULDHANA DISTRICT (M.S.) INDIA

C. A. Khillare¹, V. N. Lohiya² and R. N. Khade^{*1}

¹Department of Zoology, Late Pushpadevi Patil Arts and Science College, Risod, Tq. Risod Dist. Washim (M.S.) India-444506.

²Department of Zoology, Late Pundlikrao Gawali Arts and Science Mahavidyalaya, Shirdar (Jain), Tq. Malegaon Dist. Washim (M.S.) India-444504

ABSTRACT

The current examination manages the deliberate perception of another types of *Azygia acetabulata* from new water fish *channa punctatus*. The worm is near all types of family *Azygia* in everyday short, tube shaped, non spinous, dorsoventrally smoothed center expansive end and thin foremost and back end. Oral sucker is little and present encompass the tip piece of the body. The ventral sucker on hip bone socket is bigger than oral sucker which oval in shape, put at foremost finish of body after oral sucker. Bladder 'y' molded stretches out dependent upon somewhat back to rear testis. Cirrus pocket stretched. The oviduct started from the ovary and opens at oocyte. Vitellaria are follicular and organized on different sides from ventral sucker to rear finish of body. Eggs are oval, operculated, various.

Keywords: *Azygia*, Buldhana, *Channa punctus*,

INTRODUCTION

The variety *Azygia* was initially portrayed by Looss, 1899. Inside the subfamily *Azygiinae*, *Azygia* is separated from variety *Otodistomum* by its sidelong excretory channels which end independently in the foremost locale as well as the area of genital pore which is close to hip bone socket in *Azygia*. Ward (1917), Manter (1926), Van Cleave and Mueller (1934) and Dawes (1947) Stukard (1956), Wootton (1957); Gibson (2002) with varying decisions in regards to what establishes species-level differences. These creators have shown that variety have been happened in the morphology of *Azygia*. Manter (1926) synonymized *Azygia loossii*, Marshall and Gilbert, 1905 with *A. angusticauda* and 7 different names with *Azygia longa* (Leidy 1851), and alongside *A. acuminata* Goldberger, 1911 considered the family to have 3 delegate species in North America. Van Cleave and Mueller (1934) have synonymized number of types of *Azygia* for North America diminishing them to two, specifically *A. angusticauda* and *A. longa*. Dawes (1947) in any case, thought about just a solitary animal types (*A. lucii*) in Europe. Nonetheless, Stukard (1956) dismissed this choice, re-raised *Azygia* Sebago Ward, 1910 from Manter's synonymy with *A. longa* and proposed that *A.*

aminata was equivalent of *A. sebago*. Wootton (1957) restored *A. acuminata*, concentrated on the existence pattern of this worm and gave dichotomous key to the species he considered substantial. A significant part of the disarray in this variety encompass the suspicions that individuals from this species can contaminate different host species and that they show now and then gigantic contrasts in a few morphological qualities along these lines. As of late *Azygia aphredoderi* raised by Michel A. Barger (2014) from Pirate Perch, *Aphredoderus sayanus* in the Big Thicket National safeguard, Texas, U.S.A.

The present morphological examination manages record of new types of class *Azygia* for example *Azygia acetabulata*, sp.nov. in new water fish *Channa punctus* at Wankhed, Tehsil Sangrampur, Dist. Buldhana (M.S.) India.

MATERIAL AND METHODS

In time of investigation of Piscean Helminths, 12 out of 80 freshwater fish *Channa punctus* (Bloch.) from Wankhed Tehsil, Dist. Buldhana were contaminated by 19 trematodes during January 2013 to December 2014.

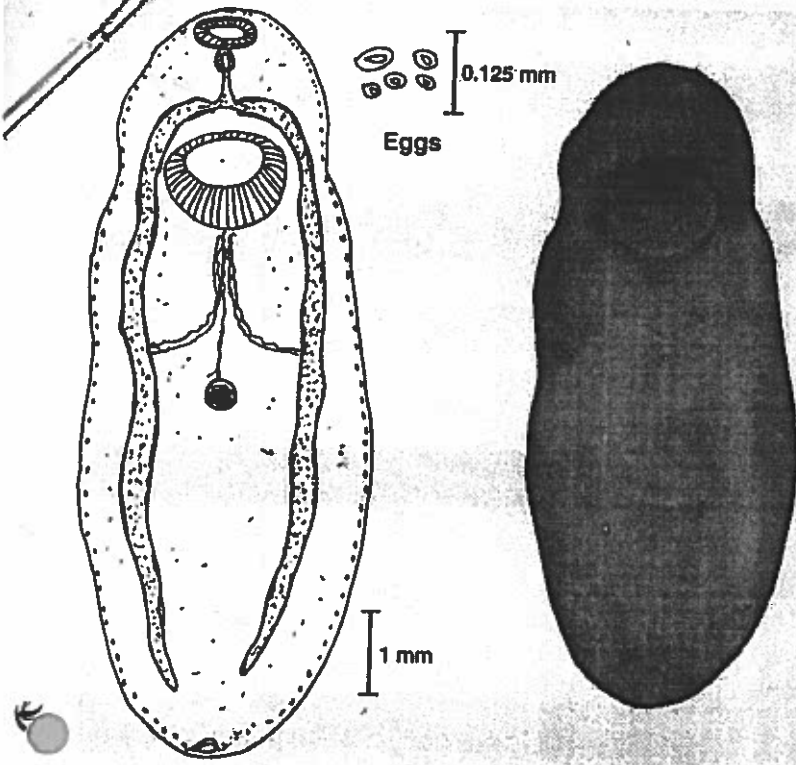
All trematodes were protected in 4% hot formalin, six examples are stained by Harris haematoxylin and Borax carmine, got dried out by series of alcoholic grades, cleared in xylene, mounted in Canada amber and drawings are made with the assistance of Camera Lucida. All estimations are expressed in millimeters except if in any case expressed.

RESULT AND DISCUSSION

Description:-

In light of perception and estimation of 06 examples with characters of the variety. Body short, tube shaped, non spinous, dorsoventrally leveled center expansive end and restricted foremost and back end, body marginally straightforward, it measure 7.500 (7.600-7.900) long and 2.850 (2.600 - 3.100) in width.

Oral sucker is little and present encompass the tip piece of the body. It is oval in shape and measures 0.259 (0.245-0.274) long and 0.412 (0.392-0.432) in width. Pharynx is medium behind the oral sucker, bulbous it measures 0.101 (0.095-0.107) long and 0.094 (0.089 - 0.099) in width. Oesophagus is exceptionally short it measures 0.358 (0.342 - 0.374) long and 0.062 (0.050-0.074) in width. Digestive caeca medium cylinder like and goes through the body and end close to rear finish of body it measures 5.555 (5.345-5.765) long and 0.038 (0.034-0.042) in width. The ventral sucker or hip bone socket is bigger than oral sucker which oval in shape, set at foremost finish of body after oral sucker, it measures 1.013 (0.812-1.214) long and 1.117 (0.923 - 1.311) in broadness.



Figs. *Azygia acetabulata*, sp. nov.

Excretory pore at the back finish of the body, bladder y^m molded stretch out dependent upon somewhat back to rear testis it measures 1.599 (1.456-1.743) long and 0.077 (0.070-0.085) in broadness.

Testicles enormous, roundabout spread center to back finish of the body, front testis somewhat more modest than back testis and measures 0.110 (0.104-0.117) long and 0.145 (0.115-0.176) in width.

Cirrus pocket lengthened, present before ventral sucker, somewhat dynamically positioned, it measures 0.399 (0.312-0.367) long and 0.085 (0.082-0.890) in width, it comprises of vesicular original is, ejaculatory conduit and little cirrus it measures 0.082 (0.078-0.087) long and 0.021 (0.016-0.026) in width. Genital pore present before ventral sucker, adjusted in shape it estimates 0.07 width.

Ovary oval in shape, pre-testicular, somewhat covering uterus, it measures 0.187 (0.177-0.198) long and 0.257 (0.241-0.274) in breadth. Receptaculum seminis present before ovary which is adjusted in shape. The oviduct began from the ovary and opens at oocyte. Vitellaria are follicular and organized on different sides from ventral sucker to rear finish of body.

Uterine loop, present transitionally among ovary and back line of ventral sucker. It measures 5.334 (5.123-5.546) long and 0.363 (0.312-0.415) in width. Eggs are oval, operculated, various, it measures 0.043 (0.041-0.046) long and 0.014 (0.013-0.016) in expansiveness.

Discussion:-

The variety *Azygia* has a long and muddled ordered history (Manter, 1926; Stunkard, 1956; Wootton, 1957; Gibson, 2002), with varying decisions in regards to what comprises species-level contrasts. Manter (1926) synonymized *Azygia loossii*, Marshall and Gilbert, 1905 with *A. angusticauda* and 7 different names with *Azygia longa* (Leidy, 1851), and alongside *Azygia acuminata*, Goldberger, 1911 considered the variety to have 3 agent species in North America. Van Cleave and Mueller (1934) recommended that *A. taper* was an equivalent of *A. longa*. In any case, Stunkard (1956) dismissed this choice, re-raised *Azygia sebago*, Ward, 1910 from Manter's synonymy with *A. longa*, and recommended that *A. taper* was an equivalent of *A. sebago*. Wootton (1957) revived *A. acuminata*, concentrated on the existence pattern of this worm and

ve a dichotomous key to the species he considered legitimate. A large part of the disarray in this family encompasses the presumption that individuals from these species can taint various host species and that they show once in a while enormous contrasts in a few morphological attributes along these lines.

In spite of this general disarray and the synonymy with *A. loossii* portrayed over, the personality of *A. angusticauda* as a particular structure has been perceived by all past creators (Wootton, 1957). In any remaining types of *Azygia* in North America, the balls are as close or nearer to mid-body just like the ventral sucker, i.e., both the balls and the ventral sucker are arranged exceptionally far to the foremost. Conversely, examples of *A. angusticauda* have balls and a ventral sucker situated posteriorly, i.e., the balls are near the back end and the ventral sucker is near mid-body. This distinction is evidently not the aftereffect of differential development in various locales of the body (at any rate, not altogether) on the grounds that both Sillman (1962) for *A. longa* and Stunkard (1956) for *A. Sebago* diagrammed adolescent worms with the ventral sucker and balls to the front, as in the grown-up structures. The new species is additionally the main known individual from the class in which the ventral sucker is bigger than the oral sucker, the converse of which is referred to by Gibson (2002) as a person of the sort *Azygia*.

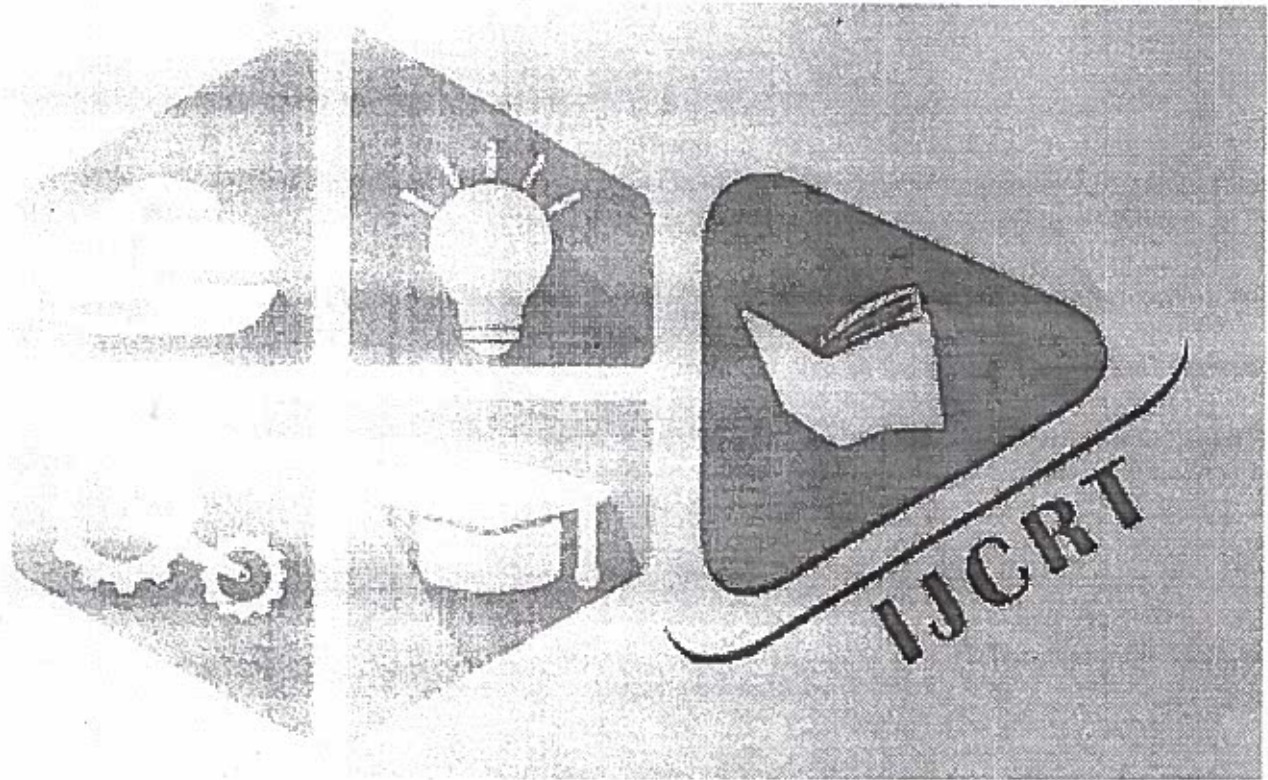
The *Azygia acaetabulata*, Sp. nov. varies from as of late depicted *Azygia aphredoderi*, Michel A. Barger (2014) having Body short, strong, tightening towards back end, wide at vastest point, close to ventral sucker. Oral sucker sub-terminal, pharynx wide, oesophagus exceptionally short; caeca tangled anteriorly, average and dorsal to vitellaria in back piece of body, ending Excretory bladder terminal, testicles couple middle in back portion of rear body, original vesicle and standards prostatica rounded, held inside prostatic sac quickly, normal gonopore discharges into sinus with wide, level opening. Ovary quickly pre-testicular, Vitellaria follicular, sidelong and extra-caecal, reaching out from back 1/3 of ventral sucker and gathered from Pirate Perch, *Aphredoderus sayanus* in the Big Thicket National protect, Texas, U.S.A.

The above noted characters are sufficiently substantial to raise another species subsequently the name *Azygia acaetabulata*, sp.nov. is proposed after the enormous estimated, astounding *acaetabulum*.

REFERENCES

1. Dayal, J. (1938). Trematode parasites of Indian fishes, part II. *Ind. Jour. Rudder*, 1(2):93 - 116.
2. Deshmukh, V. S. (2015). Biosystematic examinations on some helminth parasites of freshwater fishes. *Ph.D Thesis, S.R.T.M. University, Nanded, M.S. India* 1-347.
3. Furtado, J. E. and L. Chauhan (1971). Two new helminth species from the fish *Channamicropatters* Cuvier (*Ophiocephallus*) Malaysia. *Folio Parasit* 18:365.
4. Gibson, D. I. (2002). Chapter 4: Superfamily *Azygioidea* Luhe, *Keys to the Trematoda*, CAB International and the Natural History Museum, London, U.K. 1:19-24.
5. Goldberger, Joseph (1911). Some known and three new endoparasitic trematodes from American freshwater fish. *Bull. Hyg. Lab.*, 71: 7-35.
6. Gupta, S. P and S. L. Verma (1977). On some trematode parasites of freshwater fishes. *Riv. Parasit.* 37 (2/3): 171-182.
7. Hassan, A. A., B. Akinsanya and W. A. Adegaju (2010). Impact of helminth parasites on *clarias gariepinus* and *synodontis clarias* from Lekki Lagoon, Lagos, Nigeria. *Reports and Opinions*, 2(11):42-48.
8. Kaw, B. I (1950). Trematodes from Kashmir. *Ind. Jour. Helm.* 2:107-110.
9. Khalil, L and F. Polling (1997). Check list of the helminthes parasites of the African fresh water fishes University of North, Department of zoology, *Republic of South Africa*, 184.
10. Marshall, W. S and N. C. Gilbert (1905). Three new trematodes found principally in black bass. *Zool. Jahrb. Syst.*, 22: 477-488.
11. Michel A. Barger (2014). A new species of *Azygia* (Trematoda: Azygiidae) From Pirate peach, *Aphredorussayanus* (Aphredoredoderidae) in the Big Thicket National Preserve, Texas U.S.A. *Comparative Parasitology*, 81(2):257-259.

12. Nagaty, H. F (1930). A new *Anaporrhutine* trematode genus and species, *Nagmia yorki* with a review of the classification of the sub-family.
13. Stunkard, H. W (1955). The life-cycle of *Azygia sebago* Ward, 1910. *J. Parasitol.*, 41 (suppl.): 35.
14. Stunkard, H. W (1956). The morphology and life history of digenetic trematode *Azygia Sebago*, Ward, 1910. *Biol. Bull. Woods Hole.*(111): 248-268.
15. Woolcock, N (1935). Digenetic trematodes from Some Australian fishes. *Parasitol*, 27: 309-331.
16. Wooton, D. M (1957). Note on the life cycle of *Azygia acuminata*, Goldberger, 1911 (Azygiidae-Trematoda). *Biol. Bull.* (113): 488-498.
17. Yamaguti, S. (1958). Systema Helminthum Vol. I. The digenic Trematodes of vertebrates. *Int. Sci. Pub. New York.* 1575.
18. Yamaguti, S. (1971). Synopsis of digenetic trematodes of Vertebrates, Keigaku Publishing Co. Tokyo Japan. 1-1074.
19. Yamaguti, S. (1975). A synoptical review of life histories of digenetic trematodes of vertebrates. Keigaku Publishing Co. Tokyo, Japan, 1-590.




 IQAC
 Co-ordinator
 Late Pushpadevi Patil Arts & Science
 College, Risod Dist. Washim-444506




 Principal
 Late Pushpadevi Patil Arts & Science
 College Risod Dist-Washim