REDESCRIPTION OF FLAGELLATE PROTOZOAN PARASITE CYPTOBIA CYPRINI IN CULTIVABLE FRESHWATER FISH FROM PARBHANI DISTRICT, (M.S) INDIA

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Abstract : The present paper deals with redescription of flagellate protozoan parasite of the genus *Cyptobia cyprini* in cultivable freshwater fish *Cyprinus carpio* from Parbhani District (M.S) India. The protozoan parasite was identified on the basis of their morphological characteristics. After going through the comparative study it is found that the present *Cryptobia species* is somewhat nearer to *C. cyprini* with the characters as length; width of body; length of anterior flagella and some other characters, hence it is redescribed as *Cryptobia cyprini*. As per available references on internet, author thinks that Present *Cryptobia* protozoan parasite is might be first time reported in Marathwada region (M.S) India. So far there is very little work done on *Cryptobia* in India.

IndexTerms **- Protozoan, flagellate, *Cryptobia cyprini*, *Cyprinus carpio*, Yeldhari reservoir..**

I. INTRODUCTION

Genus *Cryptobia* belongs to the family Cryptobiidae. The genus *Cryptobia* includes 52 species that infect the body surface, gills, bloodstream or the digestive tract of many species of marine and freshwater fishes. Of these, 47 species are endo parasites that live either in blood or the digestive tract. And 5 species are ecto parasites that attached to the fish skin and specially gill. According to [1] out of 52 species of *Cryptobia*, forty species of these parasites are haemoflegellate which are found in the bloodstream. Some of these parasites are known to cause disease and are responsible for killing commercially important fish species such as *Cryptobia salmositica* which causes disease and mortality in all *Onchorhynchus spp*. in North America and Norway.

Cryptobia from the gills and skin of freshwater fish usually have a triangular body shape, with a blunty rounded anterior and tapered or pointed posterior. The kinetoplast is usually in an anterior lateral position. One flagellum extends in front of the body and other runs backward along the body surface, sometimes forming a narrow margin or membrane and then extends free posteriorly.

II. MATERIAL AND METHOD

For the study of protozoan parasites live or freshly killed cultivable fishes were collected weekly from Yeldhari reservoir of Parbhani district (M.S) from June 2010 to May 2012. For Flagellates Protozoan parasites blood smear slides were prepared by placing small drop of blood near one end of clean microscopic slide and carrying that drop across, with moving slide holding at about 40 0 angle . The dried slide stained with Geimsa stain for 20 to 60 minutes. (Dilute solution of Geimsa stain 1 drop of stain to 1 ml of distilled water). After drying the smear, mounted with Canada balsam. The identification of Protozoan is based on [2].

III. RESULT:

The present *Cryptobia* Flagellate protozoan parasite (Fig.1) isolated from freshly killed *Cyprinus carpio* was collected from Yeldhari reservoir of Parbhani district (M.S) India. During the study period from June 2011 to May 2012, total 95 fishes were examined for isolation of present parasite; out of which only 04 fishes found infected with *Cryptobia* parasites.

As per available references on internet, author thinks that Present *Cryptobia* protozoan parasite is might be first time reported in Marathwada region (M.S) India. So far there is very little work done on *Cryptobia* in India.

The study is based on entirely on light microscope observation these unfortunately do not reveal details of some important structure that can be seen in electron microscope. Never the less Techniques used for staining and impregnation bring out enough details to make slides preparation useful for comparison species with previously described species.

Present *Cryptobia* protozoan parasites is small in size, triangular, elongate both ends are rounded it measure 31.6 µm in length and 6.4 µm in width. It has two unequal flagella one at anterior end and other is at posterior end.

Anterior flagella is shorter than posterior one and it measures 10.4 µm in length while posterior flagella is long wipe like and it measures 16.8 µm in length. It is thick at the flagellar pocket and gradually become thin and pointed towards the reaching end.

The nucleus is rounded and located in the middle of the body. The entire nucleus stained darker with Geimsa stain therefore nucleolus not clearly visible. It measure 9.6 µm in diameter.

The Kinetoplast as stained darker with Geimsa stain it is clearly visible and situated towards the anterior end. It is somewhat kidney shaped and measures 6.4 µm in length and 1.2 µm in width.

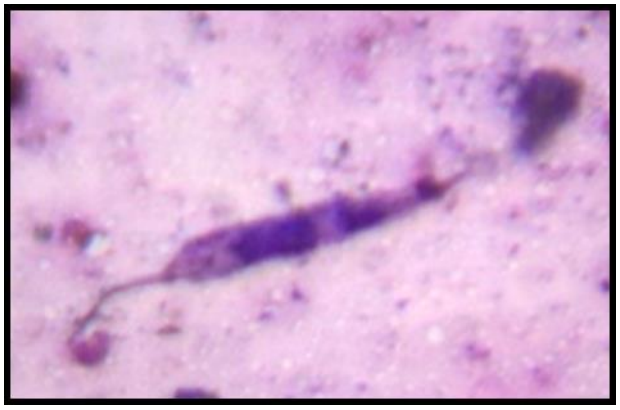

Figure1. Magnification of Cryptobia cyprini (redescirbe sp.)

IV. DISCUSSION

For comparison and to avoid multiple repetitions in the closely related Cryptobia species which previously described are summarized as follows,

When comparing the body length of present Cryptobia species (31.6 µm) with previously described species, which is found nearer to *Cryptobia cyprini* [3] and differ than the others described species, as in C. cataractae [4] 17 (14.7 – 18.9) µm, in C. salmositica [5] 14.9 (6.0 - 25. 0) µm, C. branchailis [6] 10.5 (7.5 - 11.6) µm and in C. acipenseries [7] it is 21 – 24 µm.

By comparing width of present species with previously described species, we found that 6.4 µm width of present species which is similar to only C. cyprini [3] and differ than other described species as in *C. cataractae* [4] 2 (1.54 – 2.2) µm, in *C. salmositica* [5] 2.5 (1.3 – 4.0) µm, in *C. branchialis* [6] 4.1(2.8 – 4.6) µm, and in *C. acipenseris* [7] 3.1 – 9.3 µm. After comparing the length of anterior flagella, it is found that present Cryptobia parasite is having 10.4 µm length of anterior flagella which is similar to *C. cyprini* [3] and differ than other described species, as 11 (9.6 – 13.2) µm in *C. cataractae* [4], 16.1 (6.5 - 27.0) µm in *C. salmositica* [5], 8.7 (6.1 - 10.2) µm in *C. branchialis* [6].

Posterior flagella of present species are 19.6 µm length which show similarities with only *C. branchialis* [6] and differ than other previously described species as in *C. cyprini* [3] it is 8.3 - 16. 7µm, in *C. cataractae* [4] 14 (11 – 16.4) µm, in *C. salmositica* [5] 9.0 (4.0 – 17.0) µm, not mentioned in *C. acipenseris* [7]. When comparing the nucleus of present species with previously described species it is found that in present species nucleus is 9.6 µm in diameter which is found totally different than other described species as, 1 – 1.5 µm in *C. cataractae* [4], 1.5 – 3.5 µm in *C. salmositica* [5], not mentioned in *C. cyprini* [3], *C. branchialis* [6] and *C. acipenseris* [7].

By comparing the Kinetoplast of present species with previously described species it is 6.4 µm in length and 1.2 µm in width in present species which is totally differ than other described species as in *C. cataractae* [4] it is 2.6 - 3.1 µm, in *C. salmositica* [5] 2.0 – 9.0 µm, in *C. cyprini* [3], *C. branchialis* [6] and *C. acipenseris* [7]not mentioned by their authors.

After going through the comparative study it is found that the present Cryptobia species is somewhat nearer to C. cyprini [3] with the characters as

Length of body
Width of body
Length of Anterior flagella
Position of Nucleus and Kinetoplast

Therefore the present Cryptobia protozoan parasite turned out C. cyprini; hence it is redescribed as Cryptobia cyprini [3].

Genus - Cryptobia
Type species – Cryptobia cyprini [3]
(Redescribed)
Host – *Cyprinus carpio*
Habitat – Blood
Locality – Yeldhari reservoir
Date of collection – 10 December 2011.

IV References:

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