



Rec. zool. Surv. India : 110(Part-1) : 31-34, 2010

ON SOME NEW RECORDS OF TESTACIDS (PROTOZOA) FROM PENCH NATIONAL PARK, MAHARASHTRA, INDIA

L. BINDU AND A.K. DAS*

Zoological Survey of India, M-Block, New Alipore, Kolkata-700053

E-mail : bindulajapathi@yahoo.com

*Emeritus scientist, Zoological Survey of India, Kolkata

INTRODUCTION

Pench National Park is situated in the Satpura hills to the North of Nagpur, Maharashtra. It encompasses an area of 256 sq. km. and is a mixed deciduous forest. The protistan fauna of Pench National Park is totally untouched. In view of the above point collections were made from different ponds spread over the park as part of the faunistic survey of the Maharashtra state of Zoological Survey of India, Kolkata. The study has yielded 13 new reports of testate amoebae, belonging to 5 genera spread over 3 families in 2 orders from the National Park.

SYSTEMATIC ACCOUNT

Phylum SARCOMASTIGOPHORA

Subphylum MASTIGOPHORA

Class PYTOMASTIGOPHORA

Order ARCELLINIDA

Family ARCELLIDAE

1. *Arcella discoides* Ehrenberg 1843

1843. *Arcella discoides* Ehrenberg, *Ber. k. Akad. Wiss.*, Berlin, p. 139.

1928. *Arcella discoides* Ehrenberg : Deflandre *Arch. Protistenkd.* 64, p. 256.

Material examined : 5exs., 28.ix.2007, freshwater; Reg. No. 2497; Coll. Bindu. L.

Diagnosis : Test spherical, planoconvex in profile and circular in front view; height of the dome about one-fourth to one-third of the diameter of the test.

Distribution : India : Andhra Pradesh, Arunachal Pradesh, Himachal Pradesh, Manipur, Meghalaya,

Mizoram, Nagaland, Tripura, Uttarakhand and West Bengal.

Remarks : First report from Maharashtra.

2. *Arcella vulgaris* Ehrenberg, 1830 (1832)

1830. (1832) *Arcella vulgaris* Ehrenberg, *Abh. K. Akad. Wiss. Berlin.* P. 40.

1928. *Arcella vulgaris* Ehrenberg. *Arch. Protistenkd.*, 64, p. 219.

Material examined : 4 exs., 28.ix.2007, freshwater; Reg. No. 2500; Coll. Bindu. L.

Diagnosis : Test usually light yellow, discoid, circular in front view, hemispherical in lateral view with basal border rounded or slightly prominent and rounded; height of the test about half the diameter, aperture circular, entire and central.

Distribution : India : Andhra Pradesh, Arunachal Pradesh, Himachal Pradesh, Manipur, Nagaland, Sikkim and West Bengal.

Remarks : First report from Maharashtra.

Family CENTROPYXIDAE

3. *Centropyxis aculeata* (Ehrenberg, 1832)

1832. *Arcella aculeata* Ehrenberg, *Abh. Preuss-Akad. Wiss.*, Berlin. P.40

1857. *Centropyxis aculeata* (Ehrenberg) Stein, *S. bohn. Ges. Wiss.*, Prague, 5 (10), p. 41.

Material examined : 6 exs., 28.ix.2007, freshwater; Reg. No. 2495; Coll. Bindu. L.

Diagnosis : Test compressed in ventral view, cap-shaped in lateral view; fundus obtusely rounded and furnished with few spines (usually 4-6), divergent at

the border of the test, arranged in a single somewhat regular row; aperture eccentric and circular or oval, test brownish, frequently encrusted with quartz crystals and sometimes with sand particles.

Distribution : India : Andhra Pradesh, Arunachal Pradesh, Himachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Orissa, Rajasthan, Sikkim, Tripura and West Bengal.

Remarks : First report from Maharashtra.

4. *Centropyxis laevigata* Penard, 1890

1890. *Centropyxis laevigata* Penard. *Mem. Soc. Phrys.*, Geneve, 31 (2). p. 151.

1902. *Centropyxis laevigata* Penard, *Faune Rhizopodique du basin du Leman*, Geneve. P. 306.

1929. *Centropyxis laevigata* Deflandre, *Arch. Protistenkd.*, 67, p. 363.

Material examined : 4exs., 28.ix.2007, tree moss, Reg. No. 2504; Coll. Bindu. L.

Diagnosis : Test yellowish brown, nearly circular in ventral view, usually slightly compressed in one side; in lateral view test nearly hemispherical, being broader at posterior extremity, aperture eccentric, obliquely invaginated having apertural bridges and its outer margin broadly rounded.

Distribution : India : Sikkim, Mizoram and West Bengal.

Remarks : First record from Maharashtra.

5. *Centropyxis minuta* Deflandre, 1929

1929. *Centropyxis minuta* Deflandre, *Arch. Protostenkd.*, 67, p. 366.

1879. *Difflugia constricta* Leidy, *Freshwater Rhizopods of North America*, p. 18, figs. 15-16.

1902. *Difflugia constricta* Penard, *Fauna Rhizopodique du basin du Leman*, Geneve, p. 299, figs. 13-14.

Material examined : 3exs., 28.ix.2007, freshwater; Reg. No. 2516; Coll. Bindu. L.

Diagnosis : Test small, grayish or brown, less conspicuous, more or less circular in ventral view, subspherical in lateral view with slightly more elevated posterior part; aperture circular and eccentric, test encrusted with siliceous particles.

Distribution : India : Andhra Pradesh, Arunachal Pradesh, Assam, Jammu & Kashmir, Manipur, Meghalaya, Mizoram, Sikkim, Nagaland, Tripura, Uttarakhand and West Bengal.

Remarks : First report from Maharashtra.

6. *Centropyxis spinosa* (Cash and Hopkinson, 1905) Deflandre, 1929

1905. *Centropyxis aculeata* var. *spinosa* Cash and Hopkinson. *The British Freshwater Rhizopoda and Heliozoa*, 1, p. 135.

1929. *Centropyxis spinosa* (Cash and Hopkinson) Deflandre, *Arch. prptistenkd.*, 67, p. 353.

Material examined : 3exs., 28.ix.2007, freshwater; Reg. No. 2499. Coll. Bindu. L.

Diagnosis : Test brownish, more or less circular and considerably flat and furnished with variable number of spines, usually 6-8; spines frequently curved and distributed irregularly on dorsal side; aperture eccentric, lobate or circular with irregular border; test chitinous with quartz crystals.

Distribution : India : Andhra Pradesh, Arunachal Pradesh, Himachal Pradesh, Manipur, Maharashtra, Meghalaya, Nagaland, and West Bengal.

Remarks : First report from Pench National Park.

Family EUGLYPHIDAE

7. *Assulina muscorum* Greef, 1888

1879. *Assulina seminulum* (Partim) Leidy, *Freshwater Rhizopods of North America*, pl. 37. figs. 15, 16, 26,

1888. *Assulina muscorum* Greef, *Sitzber. Ges. nat. Marburg.* p. 117.

1915. *Assulina muscorum*; Cash, Wailes and Hopkinson, *The British Freshwater Rhizopoda and Heliozoa*, 3, p. 55.

Material examined : 2exs., 28.ix.2007, freshwater; Reg. No. 2509; Coll. Bindu. L.

Diagnosis : Test small, yellowish to dark brown and sometimes colourless, oviform compressed, truncate anteriorly, aperture composed of imbricated oval or elliptical platelets, usually arranged in alternating diagonal rows, sometimes irregular; aperture terminal, elliptical, bordered by a thin chitinous membrane with undulate or irregularly dentate margin, aperture with pronounced and distinctly lobed collar of organic cement.

Distribution : India : Arunachal Pradesh, Assam, Manipur, Maharashtra, Mizoram, Sikkim, Tripura and West Bengal.

Remarks : First report from Pench National Park.

8. ***Euglypha acanthophora*** (Ehrenberg, 1842) Perty, 1849
1842. *Diffflugia acanthophora* Ehrenberg, *Abh. Acad. Berlin*, 1841 (1842), pp. 413, 444, pl. 4., fig. 36.
1848. *Euglypha acanthophora* Perty, *Mitth. Nat. Ges. Bern.*, p. 45.
1915. *Euglypha acanthophora* : Cash, Wailes and Hopkinson, *The British Freshwater Rhizopoda and Heliozoa*, 3, p. 8.
- Material examined* : 8exs., 28.ix.2007, freshwater; Reg. No. 2496; Coll. Bindu. L.
- Diagnosis* : Test ovoid or slightly elongated towards aperture, not compressed, aperture circular, bordered by one or occasionally two rows of finely serrated apertural platelets; test platelets elliptical, some platelets of posterior half and at the base of fundus prolonged into spines, spines usually 4-7 in number.
- Distribution* : India : Andhra Pradesh, Maharashtra, Manipur, Meghalaya Nagaland and West Bengal.
- Remarks* : First report from Pench National Park.
9. ***Euglypha rotunda*** Wailes and Penard, 1911
1911. *Euglypha rotunda* Wailes and Penard. *Proc. R. Irish Acad.*, 31, pp. 17, 41, 60-62, pl. 4, Figs. 19 a-g.
1915. *Euglypha rotunda* : Cash, Wailes and Hopkinson, *The British Freshwater Rhizopoda and Heliozoa*, 3, p. 31, pl. 34, fig. 9; pl. 35, figs. 14-16. text fig. 121.
- Material examined* : 4exs., 28.ix.2007, freshwater; Reg. No. 2517; Coll. Bindu. L.
- Diagnosis* : Test small, oviform, glabrous, compressed, test platelets oval, about twice as long as broad, slightly imbricated, aperture circular, bordered by eight apertural platelets; apertural platelets with one median tooth bent towards interior of the aperture and 2 pairs of lateral teeth, platelets of the test oval and imbricated.
- Distribution* : India : Arunachal Pradesh, Assam, Jammu and Kashmir, Himachal Pradesh, Meghalaya, Mizoram, Tripura and Uttarakhand.
- Remarks* : First report from Maharashtra.
10. ***Euglypha strigosa*** (Ehrenberg, 1872) Leidy, 1878
1871. (1872) *Diffflugia strigosa* Ehrenberg, *Abh, Akad. Berlin*, p. 143, pl. 2B. Fig. 31.
1878. *Euglypha strigosa* Leidy, *Proc. Acad. Philad.*, p. 172.
1915. *Euglypha strigosa* : Cash, Wailes and Hopkinson, *The British Freshwater Rhizopoda and Heliozoa*, 3, p. 28. pl. 36, Figs. 1-6, pl. 39, figs, 1-4, text fig. 120.
- Material examined* : 4exs., 28.ix.2007, freshwater; Reg. No. 2503; Coll. Bindu. L.
- Diagnosis* : Test ovoid-elliptic in transverse section, compressed, several stout spines emerging from the junction of the test platelets singly or sometimes in pair, aperture circular, bordered by 10-12 denticulated thickened platelets, each with one sharply bent median tooth and 2-3 pairs of lateral teeth.
- Distribution* : India : Himachal Pradesh, Sikkim and Uttarakhand.
- Remarks* : First report from Maharashtra.
11. ***Euglypha tuberculata*** Dujardin, 1841
1841. *Euglypha tuberculata* Dujardin, *Zooph. Infus.* P. 251.
1915. *Euglypha tuberculata* : Cash, Wailes and Hopkinson, *The British Freshwater Rhizopoda and Heliozoa*, 3, p. 13, pl. 33, figs. 6-7, pl. 35, figs. 3-5, text figs, 112-114.
- Material examined* : 6exs., 28.ix.2007, freshwater; Reg. No. 2494; Coll. Bindu. L.
- Diagnosis* : Test elongate-oviform, not compressed, test platelets round or broadly oval, imbricating, giving a regular hexagonal design, aperture circular, bordered by 8-12 finely serrated platelets arranged in a single row.
- Distribution* : India : Andhra Pradesh, Arunachal Pradesh, Assam, Jammu and Kashmir, Maharashtra, Meghalaya, Manipur, Nagaland, Sikkim, Tripura, Uttarakhand and West Bengal.
- Remarks* : First report from Pench National Park.
12. ***Trinema enchelys*** (Ehrenberg, 1838) Leidy, 1878
1838. *Diffflugia enchelys* Ehrenberg (Partim), *Infusionsth.*, p. 132. pl. 9, figs. 4a-b.
1915. *Trinema enchelys* : Cash, Wailes and Hopkinson. *The British Freshwater Rhizopoda and Heliozoa*, 3, p.86. pl. 47. figs. 1-10, pl. 48, figs 1-3, text figs. 1-3.
- Material examined* : 3exs., 28. ix. 2007, freshwater; Reg. No. 2503, Coll. Bindu. L.
- Diagnosis* : Test hyaline, elliptic, formed of siliceous circular large platelets, scarcely overlapping as well as smaller platelets of different sizes in between large ones; aperture circular, oblique, invaginated, bordered by toothed apertural platelets.

Distribution : India : Arunachal Pradesh, Himachal Pradesh, Meghalaya, Mizoram, Nagaland, Uttarakhand and West Bengal.

Remarks : First report from Maharashtra.

13. *Trinema lineare* Penard, 1890

1890. *Trinema lineare* Penard, Mem. Soc. Geneve, 31, p. 187, pl. 11, figs. 5-17.

1915. *Trinema lineare* : Cash, Wailes and Hopkinson, *The British Freshwater Rhizopoda and Heliozoa*, 3, p. 91. pl. 47, figs. 11-21 and text fig. 153.

Material examined : 3exs., 28. ix. 2007, freshwater; Reg. No. 2501; Coll. Bindu. L.

Diagnosis : Test hyaline and elliptic formed of circular platelets of different sizes, aperture circular, oblique, invaginated, bordered by toothed apertural platelets.

Distribution : India : Arunachal Pradesh, Assam, Himachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Tripura and West Bengal.

Remarks : First report from Maharashtra.

SUMMARY

A study has been undertaken on the protozoan fauna from the water samples collected from the ponds of Pench National Park, Maharashtra. The result shows the presence of 13 new records of testacid protozoans coming under 3 families and 2 orders.

ACKNOWLEDGEMENT

The author is grateful to the Director, Zoological Survey of India, Kolkata for the necessary facilities provided.

REFERENCES

- Cash, J. and Hopkinson, J. 1905. *The British Freshwater Rhizopoda and Heliozoa*. Vol. I, Rhizopoda, part I. Ray Society, London.
- Cash, J. and Wailes, G. H. 1915. *The British Freshwater Rhizopoda and Heliozoa*. Vol. III, Rhizopoda, Part III. J. Ray Society, London.
- Decloitre, L. 1962. Le genre *Euglypha* Dujardin *Arch. Protistenkd.*, **106**(1) : 51-100.
- Deflandre, G. 1928. Le genre *Arcella* Ehrenberg. *Arch. Protistenkd.*, **64** : 152-287.
- Deflandre, G. 1929. Le genre *Centropyxis* Stein. *Arch. Protistenkd.*, **67** : 322-375.
- Leidy, J. 1878. Species of *Euglypha*, *Trinema*, *Pamphagus* and *Cyphoderia*. *Proc. Acad. Philad* : 171-173.
- Penard, E. 1890. Etus sur les Rhizopodes d' eau douce. *Mem. Soc. Phys. Hist. nat. Geneve.*, **31** : 1-230.
- Penard, E. 1902. *Faune Rhizopodique du Bassin du Leman*. 714 pp. Kundig, Geneve.