

Studies on Digenetic Trematodes of Vertebrates Part. III. On three Echinostomes from Avian Hosts

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Parallelotestis garzetai n. sp. (Plate. 1. Figs. 1-4)

Only one specimen of this form was collected from the liver of white egret, *Egretta garzetta* (Linnaeus) obtained locally from Lucknow.

Description: Body elongated, 9.0 mm. long, 3.0 mm. in maximum width in testicular region. Posterior extremity attenuated. Cuticle spinous over whole body. Head collar terminal, 0.29 mm. long, 0.60 mm. wide. Collar spines 24 uninterrupted dorsally, arranged in double rows. Of these 4 corner spines, 0.06 to 0.12 mm. long. Oral sucker terminal, spherical, 0.25 mm. in diameter. Prepharynx small; pharynx 0.5 mm. long, 0.25 mm. wide. Esophagus tubular, 1.0 mm. long, dividing into two simple intestinal caeca extending upto hind end of body. Ventral sucker preequatorial, subspherical, larger than oral sucker, 0.85 mm. long, 1.0 mm. wide at 2-3 mm. i.e. one third from anterior end of body.

Genital pore submedian, just behind intestinal bifurcation, lying close to right intestinal caeca at 1.9 mm. from anterior end of body.

Excretory bladder Y-shaped; excretory pore terminal.

Testes spherical, entire, symmetrical, intercaecal and post equatorial. Testes 0.53 mm. in diameter, almost equal at 5.0 mm. from anterior end of body. Cirrus sac saccular, 0.90 mm. long, 0.60 mm. wide lying between ventral sucker and intestinal bifurcation. Vesicula seminalis sacular, 0.5 mm. long, 0.4 mm. wide; pars prostatica 0.21 mm.

long, 0.11 mm. wide. Cirrus eversible, 0.52 mm. long, 0.43 mm. wide, proximal part armed with spines. Space between vesicula seminalis and pars prostatica surrounded by a large number of prostate gland cells.

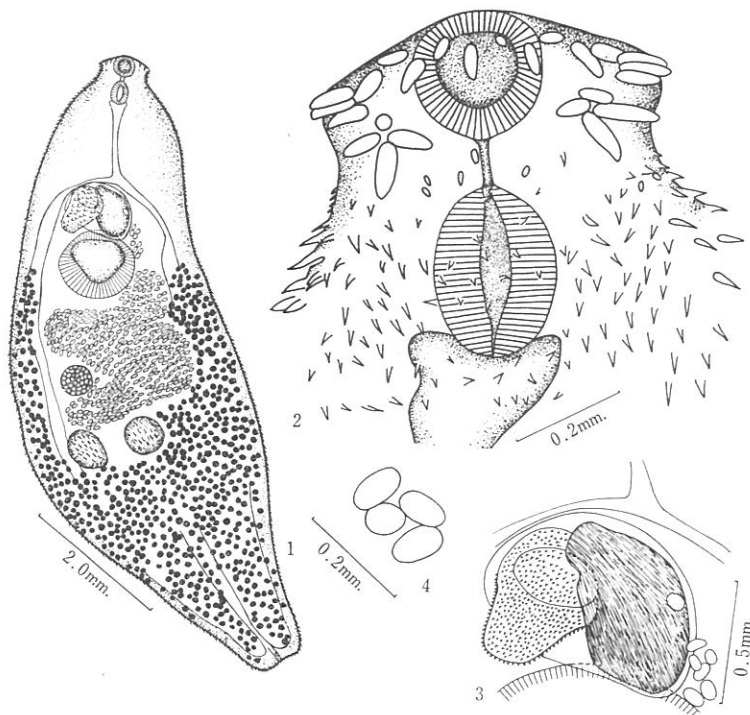
Ovary submedian, spherical, preequatorial, intercaecal lying on right side of body, 0.4 mm. in diameter at 4.25 mm. from anterior end of body. Vitellaria small, extensive, extending from middle of ventral sucker upto hind end of body filling in space by meeting in median line. Uterus filled with a large number of eggs lying between ventral sucker and testes. Metraterm opens to left of cirrus sac by a separate female pore. Eggs oval, 0.07 to 0.09 mm. long and 0.05 to 0.07 mm. wide.

Host: White egret, *Egretta garzetta* (Linnaeus)

Location: Liver

Locality: Lucknow.

Discussion: Belopolskaia (1954) erected the genus *Parallelotestis* with *P. horridus* as its type species. Srivastava O. N. (1958) established another genus *Proechnocephalus* with *P. tarai* as its type species. Srivastava P.S. (1960) described another new genus *Proechnocephalus* with *P. egreti* as its type species from a cattle egret, *Bubulcus ibis coromandus* from Raipur. Burton (1960) described *P. kafuensis* from great white Heron, *Egretta alba melanorhyncha* from Northern Rhodesia and considered *Proechnocephalus* as a synonym of *Parallelotestis* Gupta (1964) described *P. indicus* from the liver of *Bubulcus ibis coromandus* and was in agreement with Burton for the synonymy of *Proechnocephalus* with *Parallelotestis*. The author is also in agree-



Pl. 1. *Parallelotestis garzettai* n. sp.

1. *Parallelotestis garzettai* n. sp. Dorsal view.
2. Head collar (enlarged)
3. Cirrus sac (enlarged)
4. Eggs

ement with Burton and Gupta in considering *Proechinocephalus* as a synonym of *Parallelotestis* as they are identical except in the number of collar spines.

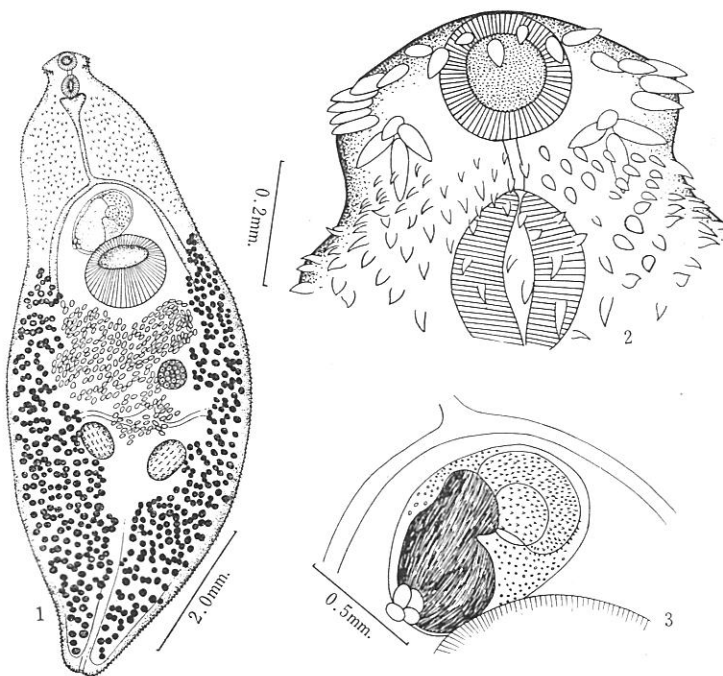
Kaushal (1970) considered *P. egreti* Srivastava, 1960 as a synonym of *P. tarai* without giving any reason. The author is not in agreement with Kaushal in favour of the synonymy and considers them to be distinct.

The new form differs all the known species of the genus *Parallelotestis* in the extension of vitellaria from middle of ventral sucker upto hind end of body and in the number of collar spines. The new form further differs from *P. kafuensis* in having testes equal and symmetrical instead of subequal and oblique. The new form can further be distinguished from *P. indicus* and *P. egreti* in having equal testes instead of subequal and from *P. tarai* in having ovary spherical instead of being slightly oval.

Accordingly it is regarded as a new species with the specific name *P. garzettai* n. sp.

Parallelotestis egreti Srivastava, 1960
(Plate. 2. Figs. 1-3)

Only one specimen of this form was collected from liver of a cattle egret, *Bubulcus ibis coromandus* (Linnaeus) from Lucknow, Description: Body elongated, spinous 8.7 mm. long, 3.4 mm. wide in testicular region. Head collar terminal, 0.32 mm. long, 0.65 mm. wide. Collar spines 26 uninterrupted dorsally arranged in double row. Of these 4 corner spines, 0.05 to 0.11 mm. long. Oral sucker terminal, spherical, 0.25 mm. in diameter. Prepharynx small; pharynx 0.25 mm. long, 0.20 mm. wide. Oesophagus 1.12 mm. long divides into two simple intestinal caeca extending upto hind end of body. Ventral sucker subspherical, larger than oral



Pl. 2. *Parallelotestis egreti* Srivastava, 1960

1. *Parallelotestis egreti* Srivastava, 1960 ventral view
2. Head collar (enlarged)
3. Cirrus sac (enlarged)

sucker, 1.0 mm. long, 1.2 mm. wide at 2.5 mm. from anterior end of body.

Genital pore submedian, slightly away from intestinal bifurcation at 2.2 mm. from anterior end of body.

Excretory bladder Y-shaped; excretory pore terminal.

Testes oval, entire, symmetrical, intercaecal and lying in third quarter of body. Right testis 0.55 mm. long, 0.40. wide at 5.0 mm. from anterior end of body. Left testis 0.65 mm. long, 0.40 mm. wide at 5.45 mm. from anterior end of body. Cirrus sac saccular, 0.95 mm. long, 0.55 mm. wide. Vesicula seminalis saccular, 0.48 mm. long, 0.39 mm. wide; pars prostatica 0.2 mm. long, 0.3 mm. wide; cirrus eversible, provided with spines, 0.41 mm. long, 0.35 mm. wide. Space between vesicula seminalis and pars prostatica surrounded by a large number of prostate gland cells.

Ovary submedian, spherical, preequatorial,

intercaecal, 0.4 mm. in diameter at 4.4 mm. from anterior end of body. Vitellaria follicular extending from anterior level of ventral sucker upto hind end of body. Uterus filled with large number of eggs lying between ventral sucker and testes. Eggs oval, non operculated, 0.07 to 0.11 mm. long, 0.06 to 0.07 mm. wide.

Host: Cattle egret, *Bubulcus ibis coromandus* (Linnaeus)

Location: Liver

Locality: Lucknow.

Discussion: The present form resembles closely to *Parallelotestis egreti* Srivastava, 1960 but however differs from it in having 26 collar spines instead of 25, in the position of cirrus pouch and genital pore, in the shape of tester and in the relative size of various organs. These differences are considered as individual specific variations.

Key to the species of the genus *Parallelotestis* Belopolskaia, 1954.

1. Testes obliquely tandem
 *P. kafuensis* Beverly Burton, 1960
 Testes symmetrical 2
2. Vitellaria extending from middle of
 ventral sucker to hind end of body
 *P. garzettai* n. sp.
 Vitellaria extending from anterior level of
 ventral sucker to hind end of body 3
3. Testes equal 4
 Collar spines 27 *P. horridus* Belopolskaia,
 1954
 Collar spines 23 *P. tarai* Srivastava, 1958
4. Testes subequal
 Collar spines 22 *P. indicus* Gupta &
 Gupta, 1964
 Collar spines 25 *P. egreti* Srivastava,
 1960

Pegosomum egreti Srivastava, 1957
 (Plate. 3. Figs. 1-3)

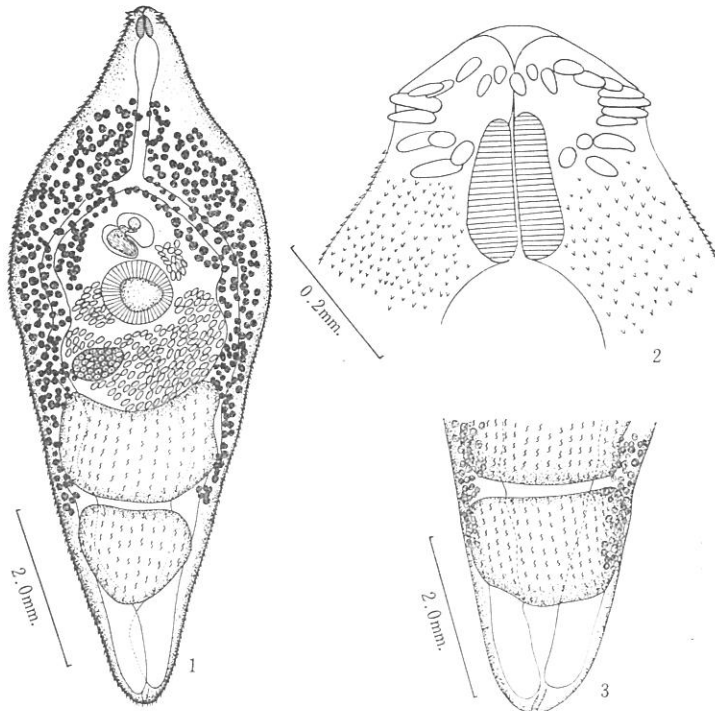
Seven specimens of this form were col-

lected from the liver of white Egret, *Egretta garzetta* (Linnaeus) from Lucknow.

Description: Body elongated, spinous, 7.7 to 9.1 mm. long, 2.2 to 3.2 mm. wide, attenuated towards both ends. Head collar weakly developed, 0.15 to 0.2 mm. long, 0.30 to 0.40 mm. wide. Collar spines 25 uninterrupted dorsally arranged in double row. Of these, 4 corner spines, 0.06 to 0.07 mm. long. Oral sucker lacking. Pharynx 0.25 to 0.40 mm. long, 0.20 to 0.30 mm. wide. Oesophagus tubular, 1.1 to 1.8 mm. long, dividing into two narrow simple or undulating intestinal caeca extending upto hind end of body. Ventral sucker spherical, preequatorial, 0.70 to 0.80 mm. long. 0.7 to 0.9 mm. wide at 2.4 to 3.2 mm. from anterior end.

Genital pore median or submedian, a little in front of ventral sucker at 2.0 to 2.8 mm. from anterior end of body.

Excretory bladder Y-shaped; excretory



Pl. 3. *Pegosomum egreti* Srivastava, 1957
 1. *Pegosomum egreti* Srivastava, 1957 Ventral view
 2. Head collar (enlarged)
 3. Hind body showing extension of vitellaria

pore terminal.

Testes large, entire, postequatorial and tandem. Anterior testis 0.9 to 1.3 mm. long, 1.6 to 2.4 mm. wide at 4.0 to 5.1 mm. from anterior end of body. Posterior testis smaller than anterior testis, 1.1 to 1.3 mm. long, 1.0 to 1.8 mm. wide at 5.9 to 6.4 mm. from anterior end of body. Cirrus sac sacular, 0.6 to 0.9 mm. long, 0.15 to 0.3 mm. wide lying between ventral sucker and intestinal bifurcation. Vesicula seminalis 0.5 to 0.6 mm. long, 0.15 to 0.3 mm. wide; pars sprostatica 0.2 to 0.6 mm. long, 0.05 to 0.20 mm. wide; cirrus eversible, 0.5 to 1.6 mm. long, 0.2 to 0.4 mm. wide. Space between vesicula seminalis and pars prostatica surrounded by a large number of prostate gland cells.

Ovary submedian, entire, oval, 0.4 to 0.55 mm. long, 0.4 to 0.7 mm. wide at 3.8 to 4.5 mm. from anterior end of body. Oötype surrounded by a large number of Mehl's gland cells situated postero-lateral to ovary. Vitellaria follicular, extending from a little anterior to middle of oesophagus upto hind end of anterior testis or middle of posterior testis, confluent across median line between middle of oesophagus and cirrus pouch and cover intestinal caeca at places. Uterus filled with a large number of eggs and lying between ventral sucker and anterior testis. Eggs oval, non operculated, 0.09 to 0.1 mm. long, 0.07 to 0.08 mm. wide.

Host: White egret, *Egretta garzetta* (Linnaeus)

Location: Liver

Locality: Lucknow

Discussion: The present form resembles closely to *P. egretti* Srivastava, 1957 but however differs from it in the extension of vitellaria from a little anterior to middle of oesophagus upto hind end of anterior testis or middle of posterior testis instead of from middle of oesophagus upto anterior margin of posterior testis, in having ovary entire instead of slightly lobed and in the relative size of various organs. These differences are considered as individual specific variations.

Summary

Three species of echinostome trematodes are described and discussed. One of these *Parallelotestis garzettae* n. sp. is new to science. The proposed synonymy of the genus *Proechinocephalus* Srivastava, 1958 with *Parallelotestis* Belopolskaia, 1954 is discussed. A key to the species of the genus *Parallelotestis* Belopolskaia, 1954 is given.

Type specimens of these forms described in this paper will be deposited in Dr. G. S. Thapar's Helminthological Collection, Lucknow.

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