

ON TREMATODES FROM WILD DUCKS IN RANGOON.

By B. S. Gogate.

(From the Biological Department, University of Rangoon.)

Two ducks were dissected. The first, *Anas poecilorhyncha* Forester 1781, contained only three specimens of *Echinostoma revolutum* (Froelich 1802) Looss 1899. The second, *Dendrocygna javanica* (Gmelin 1789), was more heavily parasitized containing both Trematodes and Nematodes. The Trematodes consisted of two genera of Echinostomes and one genus of Schistosomes. The former were obtained from the intestine and the latter from clotted blood in the body-cavity. As the bird reached the laboratory sometime after it was shot, a detailed examination of the blood could not be carried out.

I am indebted to Prof. F. J. Meggitt for his suggestions and criticism in the preparation of the manuscript.

Echinostoma revolutum (Froelich 1802) Looss 1899.

The only feature in which the parasites differ from the description of Lühe (1909, p. 69) is the size. The biggest of them is only a little longer than the smallest mentioned in the description.

Host.—*Anas poecilorhyncha* Forester 1781.

Location.—Intestine.

Locality.—Rangoon.

Paryphostomum testitrifolium, sp. nov.

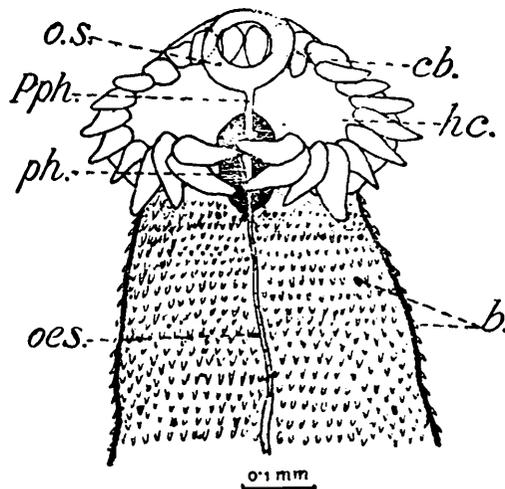
Description.—Body elongated, 3.5-5¹, armed with spines in front of ventral sucker, anterior end narrower than posterior. Maximum width (in region of testes) 0.555-0.952. Head collar strongly developed, with a single row of marginal spines, 27 in number, unbroken dorsally. Ventrally collar spines gathered into two “*end groups*” of 4 spines each.

Outermost spine of each end group 0.108-0.115 × 0.044-0.0479; other marginal spines 0.064-0.101 × 0.03-0.0324. Oral sucker subterminal, 0.115 × 0.128. Prepharynx small, 0.027 long. Pharynx globular, 0.135 × 0.093. Oesophagus approximately 0.464 long. Rami of intestine starting in front of the ventral sucker and running posteriorly nearly to posterior end of body. Ventral sucker very large, 0.547 × 0.539, enclosing a spacious cup-shaped cavity. Genital pore median anterior to ventral sucker, posterior to intestinal bifurcation.

Testes branched, trifoliate, each with two anterolateral and one postero-median branches, lying one behind the other in the median line in the hinder half of the body. Posterior testis larger than anterior.

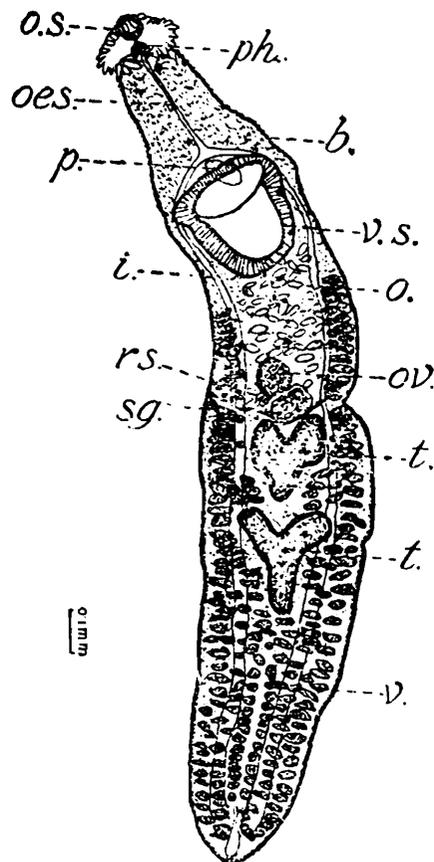
¹ All measurements are given in millimetres.

Cirrus-pouch moderately developed, 0.197×0.0945 , dorsal to ventral sucker and oblique to its axis.



TEXT-FIG. 1.—*Paryphostomum testitriolium*, sp. nov.—Head region.¹

Ovary globular, 0.17×0.165 , situated slightly to one side of the median line of body, pretesticular, separated from anterior testis by the length of the shell gland complex. Latter prominent, bigger than ovary, 0.19×0.275 in median line of body. Receptaculum-semiinis small,



TEXT-FIG. 2.—*Paryphostomum testitriolium*, sp. nov.—Entire worm.

¹ ABBREVIATIONS USED IN TEXT-FIGURES.

b., body spines; cb., collar spines; hc., head collar; i., intestine; o., ova; oes., oesophagus; os., oral sucker; ov., ovary; p., cirrus-pouch; ph., pharynx; Pph., prepharynx; rs., receptaculum-semiinis; sg., shell gland; t., testes; v.s., ventral sucker; v., vitelline glands.

approximately 0.055 diameter posterior to ovary. Vitellaria extending from behind the ventral sucker to the posterior end of body, extra and overcaecal and occasionally intercaecal in the ovarian and testicular regions, distinctly intercaecal in post-testicular region, filling the whole post-testicular part of body with loosely packed follicles. Transverse vitelline ducts running along anterior margin of anterior testis, opening into a small vitelline reservoir. Uterus short not much coiled, pre-testicular and intercaecal. Vagina passing dorsal to ventral sucker. Ova small, numerous, 0.0771×0.0409 .

Host.—*Dendrocygna javanica* (Gmelin 1789).

Location.—Intestine.

Locality.—Rangoon.

The genus *Paryphostomum* Dietz 1909, type-species *P. radiatum* (Dujardin 1845) Dietz 1909 from *Phalacrocorax carbo*, has been characterized by "the presence of a double row of collar spines." Edwards (1927) redescribed this type-species and amongst other minor differences, he found that the collar spines invariably occurred in a single dorsally unbroken row. In view of this observation, corroborated by those given above, either the original diagnosis is inaccurate in this respect or the constancy of the character is dubious; in either case no generic importance can be attached to it and the diagnosis should be altered to "Collar spines in a single or double dorsally unbroken row"

The presence of a double row of collar spines together with differences in the shape and disposition of the testes and cirrus sac, separate the present form from *P. segregatum* Dietz 1909 and *P. indicum* Bhalerao 1931.

It agrees with *P. radiatum* (Dujardin 1845) in the possession of a single row of collar spines, and the number constituting the row, but differs in (1) the ratio of its suckers; (2) the trifoliate nature of its testes; (3) the size and shape of the cirrus sac; and (4) the Anseriform host.

The differences being sufficient for the creation of a new species for which I propose the name *P. testitriifolium* in view of the trifoliate nature of its testes.

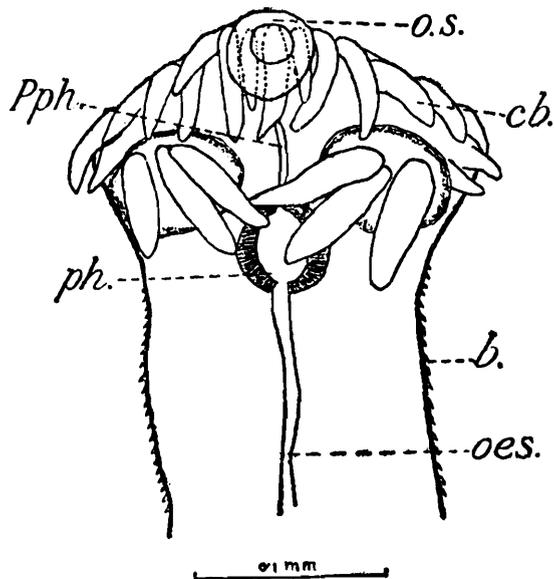
Key for the species of the genus *Paryphostomum* Dietz 1909—

- | | |
|---|--------------------------------------|
| 1. Collar spines in a single row | 2. |
| Collar spines in a double row | 4. |
| 2. Testes 4-5 lobed rosette-shaped | <i>P. radiatum</i> (Dujardin 1845). |
| 3. Testes 3 lobed, two anterolateral and one postero-median lobe | <i>P. testitriifolium</i> , sp. nov. |
| 4. Collar spines 27 in number, cirrus sac not extending behind ventral sucker | <i>P. segregatum</i> Dietz 1909. |
| 5. Collar spines 42 in number, cirrus sac extending behind ventral sucker | <i>P. indicum</i> Bhalerao 1931. |

***Petasiger minutissimus*, sp. nov.**

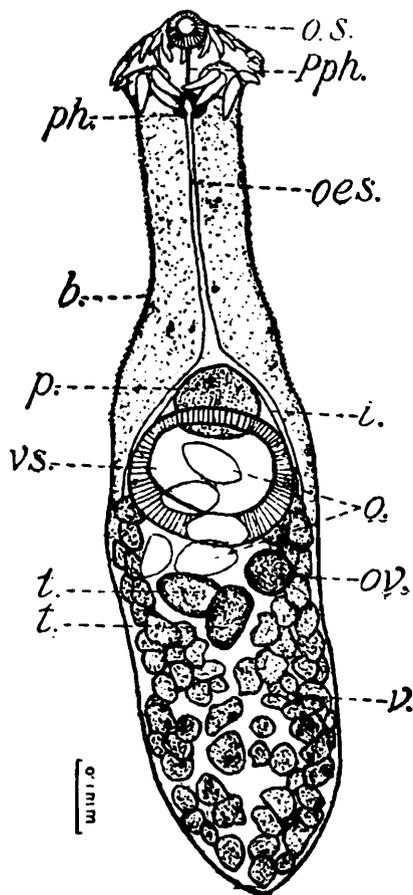
Description.—Body small, elongated, 0.984-1.338, anterior end narrower, with well-developed head collar bearing 23 collar spines, of which 17 spines are arranged in a single dorsally uninterrupted row, each spine $0.0368-0.0613 \times 0.01-0.0171$, the remaining 6 spines being in two ventral "end groups", each containing three spines, $0.0552-0.073 \times$

0.015-0.0225, borne on a very much raised portion of the collar. Maximum width of the body in region immediately behind ventral sucker—0.291-0.349. Body anterior to ventral sucker covered with spines. Oral sucker almost circular, 0.045-0.053. Prepharynx 0.05-0.06 long.



TEXT-FIG 3.—*Petasiger minutissimus*, sp. nov.—Head region.

Pharynx globular, 0.0495-0.05. Oesophagus thin, 0.3-0.33 long. Intestinal caeca narrow, branching some distance in front of ventral sucker, from the posterior margin of the ventral sucker completely hidden under excessively developed vitelline follicles.



TEXT-FIG. 4.—*Petasiger minutissimus*, sp. nov.—Entire worm.

Ventral sucker prominent, central, broader than long, 0.1771-0.195 × 0.198-0.226. Genital pore anterior to ventral sucker, immediately ventral to intestinal bifurcation.

Testes oval, partly overlapping and with long axes almost at right angles to each other. Anterior testis a little behind posterior margin of ventral sucker, transverse to axis of body; posterior with long axis parallel to body. Cirrus-pouch broader than long, 0.113 × 0.121, dorsal to ventral sucker, approximately half covered by anterior margin of ventral sucker, the other half lying between it and the intestinal bifurcation.

Ovary ovoid, 0.0633-0.064 × 0.066, close to ventral sucker, lateral, partly in zone of anterior testis, in some specimens, in others partly covered by posterior margin of the ventral sucker. Receptaculum seminis and shell gland obscured by the vitelline follicles. Vitelline follicles, in thick lateral bands in ovarian and testicular regions extending from level of posterior margin of ventral sucker to posterior end of body, and filling loosely median field also in post-testicular region leaving only a narrow median space.

Uterus short, pretesticular. Ova few, large, 0.0592-0.093 × 0.0368-0.048.

Host.—*Dendrocygna javanica* (Gmelin 1789).

Location.—Intestine.

Locality.—Rangoon.

Of the species of the genus *Petasiger*, Dietz 1909, the Burmese form most closely resembles *P. neocomense* Führmann 1928, with which it has in common the following characters :—

1. Single dorsally uninterrupted row of collar spines, with two *end groups* borne on a much raised portion on the ventral aspect.

2. Shape and the disposition of testes.

3. The position of the ovary.

It differs, however, in the following points :—

1. The total number of collar spines, and the number of spines constituting the *end groups*.

2. The distribution of the vitelline follicles.

3. The overlapping of the testes.

4. The size and shape of the cirrus-pouch.

5. The shape and size of the body and the Anseriform host.

The present form, therefore, constitutes a new species, for which I propose the name *P. minutissimus*, separating it from the other species of the genus by the characters given in the following key :—

- | | |
|---|--------------------------------------|
| 1. Collar spines in double row | 2. |
| Collar spines in single row | 4. |
| 2. Spines 27 in number. Anterior end narrowed into a neck; cirrus-pouch round | <i>P. excretus</i> Dietz 1909. |
| 3. Spines 19-21 in number. Anterior end not narrowed into a neck; cirrus-pouch elongated and oblique | <i>P. pungens</i> (V. Linstow) 1893. |
| 4. Spines 27 in number. Cirrus-pouch elongated and parallel to the axis of the body. Posterior end more narrow. Vitelline follicles sparse and mostly lateral, not reaching posterior end | <i>P. neocomense</i> Führmann 1928. |

5. Spines 19 in number. Anterior end narrowed into a neck and cirrus-pouch elongated and oblique. Posterior end more narrow. Vitelline glands not reaching posterior end, mostly lateral . *P. nitidus* Linton. 1928.
6. Spines 23 in number. Cirrus-pouch round. Posterior end rounded. Vitelline follicles filling median field in post-testicular region, reaching posterior end *P. minutissimus*, sp. nov.

Genus **Ornithobilharzia** Odhner 1912.

Ornithobilharzia sp.

Two immature male specimens were obtained from blood already clotting. Length 9.5, Breadth 0.488. Spines and tubercles present on the body. Oral sucker 0.196 in diameter. Ventral sucker pedunculated, 0.472 × 0.417. Intestinal caeca long, running independently for most of their lengths, joining to form a common caecum approximately 0.52 from the posterior end. Testes approximately 70, circular, feebly developed. Cirrus-pouch rudiment posterior to ventral sucker. Gynacophoric canal well developed.

Host.—*Dendrocygna javanica* (Gmelin 1789).

Location.—Vascular system (?).

Locality.—Rangoon.

REFERENCES.

- Bhalerao, G. D. (1931).—Two new trematodes from Reptiles: *Paryphostomum indicum* N. Sp. and *Stunkardia dilymphosa* N. G. N. Sp.
Parasitology, XXIII, 99-102.
- Dietz, E. (1910).—Die Echinostomiden der Vögel.
Zool. Jahrb. Suppl. 12, pp. 265-512.
- Edwards, E. E. (1927).—On the anatomy of the trematodes *Paryphostomum radiatum* Dietz 1909.
Parasitology, XIX, pp. 245-259.
- Führmann, O. (1927).—*Petasiger neocomense* Nov. Sp.
Bull. Soc. Neuchâtel, sci. nat. LII.
- Linton, E. (1928).—Notes on trematode parasites of Birds.
Proc. U. S. Nat. Mus. LXXIII, art. 1.
- Lühe, M. (1909).—Die Süßwasserfauna Deutschlands H. 17.
- Price, E. W. (1929).—A synopsis of the trematode Family Schistosomidae with descriptions of new genera and species.
Proc. U. S. Nat. Mus. LXXV, art. 18.