

TWO NEW SPECIES OF *XYSTRETRUM* LINTON, 1910
(TREMATODA; GORGODERIDAE) FROM FISHES
OF QUEENSLAND, AUSTRALIA *

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ABSTRACT

Xystretrum moretonense sp. nov. from *Triacanthus biaculeatus* (Bloch) and *X. plicoporum* sp. nov. from Balistidae differ from all other species in the genus in possessing a prostatic vesicle with nucleated cells. Terminal genital ducts of species in the genus have been neglected. The terminal ducts of *X. caballeroi* Bravo-Hollis, 1954, and of *X. solidum* Linton, 1910, are described and contrasted.

RESUMEN

Xystretrum moretonense sp. nov. de *Triacanthus biaculeatus* (Bloch) y *X. plicoporum* sp. nov. de Balistidae difieren de todas las otras especies en el género porque poseen una vesícula prostática con células nucleadas. Los ductos genitales terminales de las especies del género han pasado inadvertidos. Los de *X. caballeroi* Bravo-Hollis, 1954, y de *X. solidum* Linton, 1910, se describen y comparan en este trabajo.

The trematodes described below are part of a collection made by the author at the University of Queensland, Brisbane, Australia, in 1963. The hosts were obtained from commercial fishermen operating in the region of Moreton Bay, and with the assistance of Peter Young, the a graduate student at the University of Queensland.

The trematodes were killed in formol-acetic-alcohol solution under light pressure of a coverglass; stained in Mayer's hematoxylin, and mounted in balsam or in permount. Measurements are in micra unless otherwise indicated.

Xystretrum moretonense sp. nov.
(Figs. 1-3)

Host: *Triacanthus biaculeatus* (Bloch); Triacanthidae; black-finned three spine.

Locality: Moreton Bay region, Queensland, Australia.

Location: Urinary bladder.

Number: 8 in 2 of 5 hosts.

Holotype: USNM Helminth. Coll. No. 71849.

Description: Body flask-shaped, with narrow forebody and wide, rounded hindbody; mostly smooth except for fine, pointed papillae around apertures of suckers; fine papillae also present on

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folds of cuticula; perhaps lost elsewhere. Transverse striae of hindbody inconspicuous, well separated, about 8 or 10 visible in mounted specimens, about 30 in living specimens. Length 1.995 to 3.800 mm; greatest width 1.045 to 1.995 mm. Forebody 0.722 to 1.425 mm long. or from about $1/3$ to $1/2$ body length. Oral sucker 335 to 536 wide; acetabulum 395 to 657 wide; sucker width ratio 1:1.08 to 1.22. Esophagus 100 to 256 long, muscular. Bifurcation nearer to oral sucker than to acetabulum. Ceca forming cyclocoel; postcecal space 201 to 523 long.

Genital pore median, slightly posterior to intestinal bifurcation, a thick-walled transverse slit. Testes symmetrical, well separated but between ceca, near middle of hindbody; they are unlobed, slightly lobed (crenulated), or, rarely, deeply lobed. Seminal vesicle a bent tube, with anterior half saccular, entering side of prostatic vesicle about $1/4$ from one side, and posterior half more slender and provided with a few gland cells. Prostatic vesicle saccular to ovoid, ventral to seminal vesicle; it is smaller or larger than saccular portion of seminal vesicle, and lined with nucleated cells. Pars prostatica a narrow tube ventral to prostatic vesicle. Cirrus short, thick-walled. Genital papilla absent or small.

Ovary ovoid, unlobed, anterior to and slightly separated from left (or in one case, right) testis. Vitellaria symmetrical, at or near level of ovary, and median to ovary; they are ovoid or, rarely, deeply lobed. Uterus in narrow coils extending posteriorly, then anteriorly, sometimes overlapping ceca slightly but not extending lateral to ceca; it has very short loops or coils in forebody, becomes a slender, muscular metraterm along side of prostatic vesicle, and opens into a shallow genital atrium. Eggs thin-shelled, often abnormal; mature eggs 32 to 38 by 18 to 22.

Excretory pore dorsal, immediately posterior to cyclocoel; vesicle not observed.

The name *moretonense* is for the locality, Moreton Bay.

Discussion: Most species named in the genus *Xystretrum* Linton, 1910, have been considered synonyms of *X. solidum* Linton, 1910. Such synonyms are *X. pulchrum* (Travassos, 1921) Manter, 1947; *X. papillosum* Linton, 1910; *Catoptroides aluterae* MacCallum, 1919; and *C. magnus* MacCallum, 1917. *Xystretrum caballeroi* Bravo-Hollis, 1954, was distinguished from *X. solidum* because the oral sucker was slightly larger than the acetabulum rather than *vice versa*. However, the figure of *X. caballeroi* has suckers of equal width, and two specimens in my collection have acetabula slightly wider than the oral sucker. *Xystretrum caballeroi* does differ distinctly from *X. solidum* in the character of the terminal ducts. The metraterm and the male duct unite at the base of a *ductus hermaphroditicus* which penetrates into the rather small genital papilla (Fig. 8). In my specimen, the seminal vesicle is a rather narrow tube.

Considering the number of investigators who have reported and figured *X. solidum* (including myself), it is surprising that no one has correctly noted the character of the large "cirrus" often protruding finger-like from the genital pore. This structure is actually a large papilla arising from the base of the genital atrium. It contains separate male and female ducts which open together at the tip of the lobe-like papilla (Fig. 7). Thus, it differs from the papilla of *X. caballeroi* in not containing a *ductus hermaphroditicus*.

Xystretrum moretonense differs from both the above species in that a genital papilla is lacking or small in size and not protuberant, or barely so. The male and female ducts open separately into a shallow atrium. A short but true cirrus

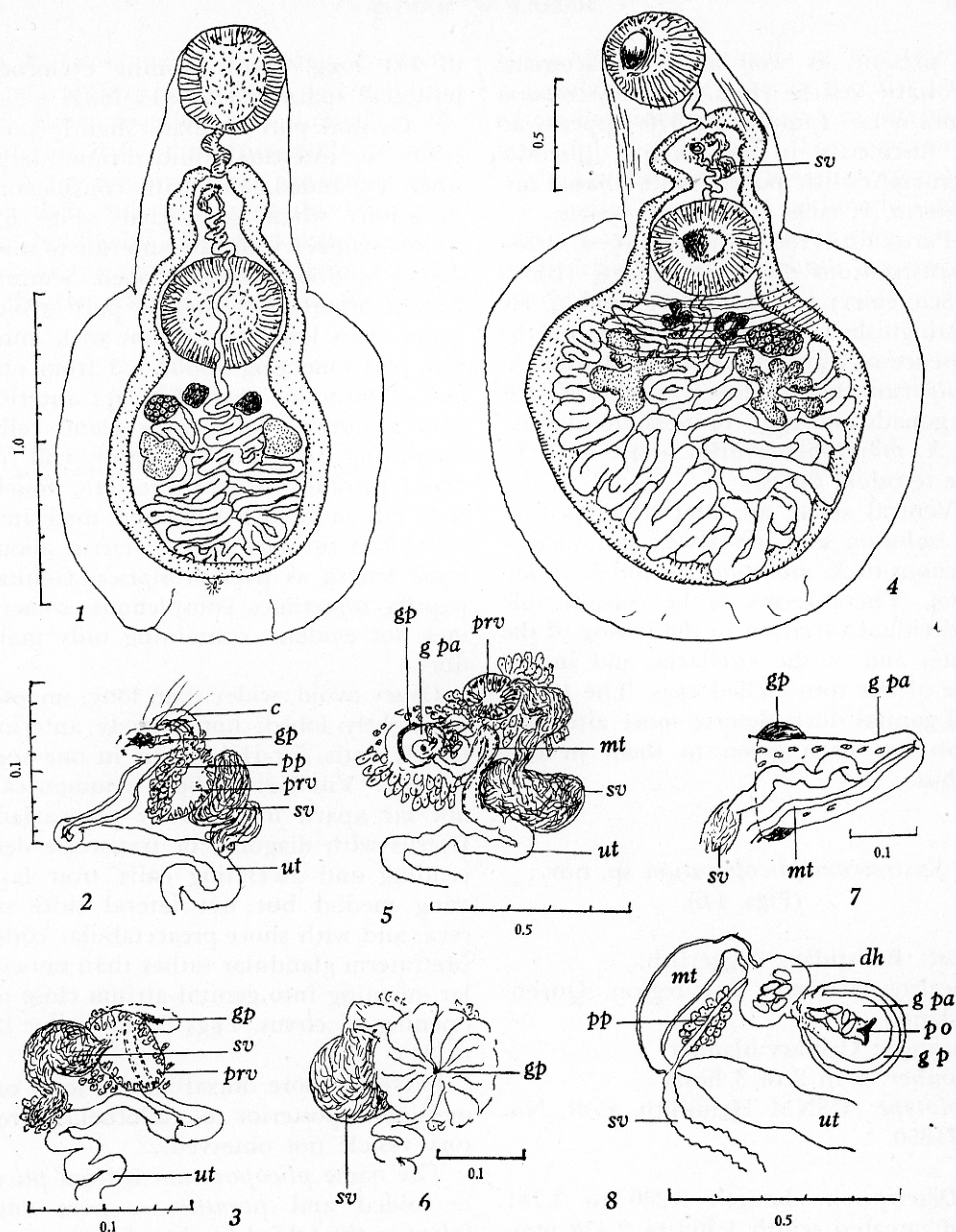


Fig. 1. *Xystretrum moretonense*. Holotype. Dorsal view. Fig. 2. *X. moretonense*. Holotype. Ventral view of terminal genital ducts. Fig. 3. Same. Dorsal view. Fig. 4. *Xystretrum plicoporatum*. Holotype. Ventral view. Fig. 5. *X. plicoporatum*. Holotype. Ventral view of terminal genital ducts. Fig. 6. *X. plicoporatum*. Paratype. Ventral view of region of genital pore. Fig. 7. Genital papilla of *X. solidum* Linton, 1910 from *Lactophrys triqueter* (Linn.), Dry Tortugas, Florida. Fig. 8. Ventral view of terminal genital ducts of *X. caballeroi* Bravo-Hollis, 1954, from *Pachynathus capistratus* (Shaw), Mexican Pacific.

All drawings were made with the aid of a camera lucida. The projected scales are in mms. Abbreviations: c, cirrus; dh, ductus hermaphroditicus; gp, genital pore; gpa, genital papilla; mt, metraterm; po, papilla opening; pp, pars prostatica; prv, prostatic vesicle; sv, seminal vesicle; ut, uterus.

is present, as well as a characteristic prostatic vesicle (Figs. 2-3). *Xystretrum hawaiiense* Yamaguti, 1970 appears to be distinctive in possessing a "pseudo-hermaphroditic pouch" and ciliated metraterm. It lacks a prostatic vesicle.

Parukhin (1964) named *Xystretrum abalistis* from *Abalistes stellaris* (Bloch & Schneider) in the Gulf of Tonkin. He distinguished it from *X. solidum* on the absence of transverse striae and from *X. pulchrum* by its lobed vitellaria, size of gonads and eggs. Its possible identity to *X. moretonense* must await study of the terminal ducts.

Ventral striae are best developed in *X. solidum* and are fewer and inconspicuous in *X. moretonense* and *X. cabaleroi*. There seems to be considerable individual variation in the lobing of the testes and of the vitellaria, and in the size of the thin-shelled eggs. The terminal genital ducts deserve more attention than has been given to them in this genus.

Xystretrum plicoporum sp. nov.
(Figs. 4-6)

Host: Balistidae; triggerfish.

Locality: Moreton Bay region, Queensland.

Location: Urinary bladder.

Number: 5 in 2 of 3 hosts.

Holotype: USNM Helminth. Coll. No. 71850.

Description: Length 2.280 to 3.781 mm; greatest width 1.368 to 2.470 mm. Body mostly smooth except for slender processes around aperture of acetabulum. Plications of hindbody inconspicuous, close together, immediately post-acetabular, about 10 to 30 in number, no seen posterior to middle of hindbody. Oral sucker 382 to 523 wide; acetabulum 409 to 563 wide; sucker width ratio 1:1.07 to 1.1 Esophagus 134

to 141 long; cerca forming cyclocoel; postcecal space 228 to 415 long.

Genital pore median, slightly posterior to intestinal bifurcation, large when expanded, and with conspicuous plications when contracted (Fig. 6). Testes symmetrical, just anterior to middle of hindbody, deeply lobed. Seminal vesicle bipartite: posterior part ovoid, wider than long, connection with anterior part emerging about 1/3 from one end of posterior part (Fig. 5); anterior part a sinuous tube, with gland cells, narrowing to enter posterior end of ovoid prostatic vesicle. Prostatic vesicle with tall, more or less pointed, nucleated cells. Pars prostatica short; cirrus about same length as pars prostatica. Genital papilla sometimes conspicuous, sometimes not evident, containing only male duct.

Ovary ovoid, wider than long, smooth or slightly lobed, immediately anterior to left testis (or right testis in one specimen). Vitellaria lobed, symmetrical, not far apart, immediately preovarian. Uterus with diagonal or transverse descending and ascending coils, over lapping medial but not lateral sides of ceca, and with short preacetabular coils. Metraterm glandular rather than muscular, opening into genital atrium close to opening of cirrus. Eggs 30 to 40 by 18 to 24.

Excretory pore dorsal and at level of, or slightly posterior to, cyclocoel. Excretory vesicle not observed.

The name *plicoporum* is from *plico* = folded and *porum* = pore and refers to the folded border of the genital pore.

Discussion: This species is closely related to *X. moretonense*. Both species possess a prostatic vesicle with nucleated cells. Sizes agree and sucker ratios overlap. The deep lobing of the testes and vitellaria occurring in all five specimens of *X. plicoporum* are usually lacking

in *X. moretonense* but rarely do occur. The transvers estriae of *X. plicoporum* are closer together and limited to the anterior half of the hindbody, whereas in *X. moretonense* they are not so close together and occur past the middle of the hindbody. The chief differences occur in the terminal genital ducts, especially the seminal vesicle. In *X. moreto-*

nense the posterior part of the vesicle is tubular and the anterior saccular part enters the side, not the end, of the prostatic vesicle (Figs. 2-3). The metraterm is thick-walled in *X. moretonense*, and the genital pore less (although somewhat) plicated. These characters, together with the unrelated hosts, appear to justify the two species.

LITERATURE

PARUKHIN, A. M., 1964. A new trematode of the family Corgoderidae Looss, 1901. [In Rus-

sian: English y German summaries]. *Helminthologica* 5 (1-4): 123-124.