



The Sarawak Museum Journal

Vol. XXIX No. 50

December 1981



ISSN: 0375-3050

E-ISSN: 3036-0188

Citation: Pearson, J. C and Pearson, O. C. (1981). Two New Species of the Trematode Genus *Heterophyes* from Sarawak. The Sarawak Museum Journal, XXIX (50): 171-190

TWO NEW SPECIES OF THE TREMATODE GENUS *HETEROPHYES* FROM SARAWAK

J.C. Pearson

(University of Queensland, Australia)

and

O.C. Pearson,

(Kenmore, Brisbane, Australia)

Among digenean trematodes collected from fish-eating birds in Sarawak were two species of the genus *Heterophyes* Cobbold, family Heterophyidae, found in the Crested Tern, *Sterna bergii* Lichtenstein, from Buntal, First Division.

The first of these is named *Heterophyes chini* in appreciation of the generous assistance givenus by Mr. Lucas Chin, P.B.S., P.P.B., Curator of the Sarawak Museum.

The following description is based on 24 wholmounts comprising the type series. Measurements (average and range) are given in microns.

TWO NEW SPECIES OF THE TREMATODE GENUS *HETEROPHYES* FROM SARAWAK

by

J.C. Pearson

(University of Queensland, Australia)

and

O.C. Pearson,

(Kenmore, Brisbane, Australia)

Among digenean trematodes collected from fish-eating birds in Sarawak were two species of the genus *Heterophyes* Cobbold, family Heterophyidae, found in the Crested Tern, *Sterna bergii* Lichtenstein, from Buntal, First Division.

The first of these is named *Heterophyes chini* in appreciation of the generous assistance given us by Mr. Lucas Chin, P.B.S., P.P.B., Curator of the Sarawak Museum.

The following description is based on 24 wholemounts comprising the type series. Measurements (average and range) are given in microns.

Description of type species (Figs. 1–9)

With the characters of the genus *Heterophyes* Cobbold *sensu* Witenberg, 1919). Body clavate, 1300 (870–1670) μ long; forebody 567 (387–669) μ long; and 258 (169–322) μ wide, flat and thin, tapers gently to anterior end, bent dorsally at level of ventral sucker (Fig. 5); hindbody 730 (431–1009) μ long and 348 (218–484) μ wide at level of testes, flattened but thicker than forebody; armed with scales larger anteriorly becoming spines well behind ventral sucker, ending behind testes, absent on anterior tip of body (Fig. 6), not forming pre-oral transverse band; with pigment granules few, small, widely scattered in forebody; with frontal-gland cells numerous, extending from bifurcation of gut to middle of ventral sucker dorsally, largely inter-caecal, ducts run forward to open in transverse series pre-orally on scale-less anterior end; with tegumental glands small, mostly in forebody and mostly ventral and inter-caecal.

Oral sucker subterminal; 66 (49–78) μ long and 72 (62–87) μ wide. Prepharynx long; 103 (52–130) μ long; not forming a fornix at junction with pharynx. Pharynx small, 38 (29–43) μ long and 31 (25–37) μ wide; ratio oral sucker:pharynx 2.01 (1.84 – 2.13). Oesophagus shorter than prepharynx except in holotype, 77 (45–91) μ long; bifurcation of caeca 219 (193–347) μ or 23 (20–28)/100ths from anterior end. Caeca slender, simple, straight; nearer dorsal surface in hindbody; extend to just beyond testes.

Ventral sucker large, prominent, with small cavity; 155 (87–217) μ long and 172 (104–233) μ wide; larger than oral sucker but ratio oral sucker: ventral sucker decreases with increasing body length (see remarks on allometry below). Genital sac (Fig. 2) postero-sinistral to ventral sucker; filled by gonotyl; mouth inclined toward ventral sucker. Gonotyl (when fully retracted) elliptical;

119 (75–168) μ long axis and 83 (55–130) μ short axis; sucker-like, with reduced cavity and thickened rim bearing an incomplete circle of 78–92 pectinate sclerites up to 16 μ long and each with up to five outwardly directed slender, curved teeth (Fig. 4). Gonotyl (when protracted, Fig. 3) a short cylinder with rounded ventral face bearing genital pore excentrically nearer ventral sucker, slightly incurved side bearing circle of pectinate sclerites just below rim, and swollen base; inclined toward ventral sucker. Genital pore opens on prominence on side of cavity of gonotyl toward ventral sucker.

Testes posterior, opposite but usually posterior border of right testis slightly posterior to that of left testis; nearly contiguous in smaller adults (Fig. 8), widely separated in larger adults (Fig. 9); right testis 115 (84–146) μ long and 91 (62–123) μ wide, left testis 106 (68–133) μ long and 87 (58–130) μ wide. Sperm ducts not seen. Seminal vesicle thin walled, two chambered; proximal chamber small, rounded to ellipsoidal, dorsal to coils of uterus; distal chamber long, sinuous, wall slightly thicker, winds forward to level of mid-gonotyl. *Pars prostatica* small, rounded, thin walled, dorsal to gonotyl dextrally; lined by inbulging ends of gland ducts; joins seminal vesicle via short, narrow duct; prostatic gland-cells constitute parenchyma over width of body at and slightly behind level of gonotyl. Ejaculatory duct short; runs sinistrad, unites with uterus at dorsal margin of gonotyl to form genital sinus. Triangular mass of darkly staining cells of glandular appearance overlaps gonotyl dorsally, encloses ends of male and female ducts.

Ovary median, ventral, anterior to testes; rounded to transversely oval, 72 (49–97) μ long and 94 (64–120) μ wide. Oviduct arises mid-dorsally, runs antero-dextrad and dilates, turns sinistrad and is joined by common vitelline duct to form ovo-vitelline duct that curves mediad to enter ootype at level of anterior margin of ovary. Seminal receptacle possibly represented by dilated portion of oviduct but no sperm seen therein. Laurer's canal arises from dilated oviduct adjacent to vitelline reservoir and runs dorsad to open on dorsal surface. Uterus (Fig. 9) runs counter-clockwise along margin of ovary postero-dorsally to a point postero-sinistrally, then recurves on itself dorsally and runs dextrad; this loop of uterus full of sperm and forming *vesicula seminalis uterinum* (Fig. 1); winds forward dextral to ovary, crosses to left side, coils backward dorsally to level of ovary, then forward ventrally to level of gonotyl, crosses to right side and coils forward dextral to gonotyl, sometimes overlapping ventral sucker postero-dorsally, loops posteriorly ventral to male duct to enter genital atrium sinistral and close to ejaculatory duct; terminal part thick walled. Eggs (15, uterine, not collapsed) 30 (27 - 31.5) $\times$ 16 (14.5 - 18) μ . Vitellaria follicular, follicles small, in two opposed groups separated medially, among coils of uterus from behind gonotyl to in front of testes, not reaching lateral margins (Fig. 8); transverse vitelline ducts at level of ovary; vitelline reservoir small, dorsal to ovary, sinistral to oviduct.

Excretory pore terminal. Excretory bladder triangular to broadly Y-shaped; when triangular extends dorsal to testes, ovary and post-ovarian loops of uterus. Primary collecting tubules arise antero-laterally, run forward almost to oral sucker; give off short, simple or forked, median and lateral outgrowths anterior to ventral sucker; origin of anterior and posterior collecting tubules not seen.