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## Two New Species of Cestode (Trypanorhyncha, Eutetrarhynchidae) from the Yellow-spotted Stingray, *Urolophus jamaicensis*

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**ABSTRACT:** *Eutetrarhynchus thalassius* sp.n. and *Eutetrarhynchus caribbensis* sp.n. were collected from the spiral valves of three yellow-spotted stingrays, *Urolophus jamaicensis*, in Discovery Bay, Jamaica. Both species most closely resemble *Eutetrarhynchus geraschmidti* Dollfus, 1974. *Eutetrarhynchus thalassius* differs from *E. geraschmidti* in the arrangement, sizes, and shapes of tentacular armature. *Eutetrarhynchus caribbensis* differs from *E. geraschmidti* and *E. thalassius* on the basis of metabasal armature. The tentacular armature of *E. geraschmidti* is redescribed.

This report is based upon specimens of trypanorhynch cestodes collected at Discovery Bay, Jamaica. Several worms, recovered from the spiral valves of three yellow-spotted stingrays, *Urolophus jamaicensis*, represent two species new to science. The following descriptions are based on these specimens. The redescription of *E. geraschmidti* is based upon the type specimen, No. 13 (of the series), borrowed from the Muséum National d'Histoire Naturelle, Paris, France.

The spiral valves were removed and placed into dishes containing seawater. The worms were freed from the host tissue and each placed in its own vial of fresh water. The water was then pipetted out and replaced with alcohol-formol-acetic acid (AFA). Acetic carmine stain was used. Beechwood creosote was used for clearing, followed by permanent mounting with Canada balsam. All measurements in micrometers unless otherwise stated.

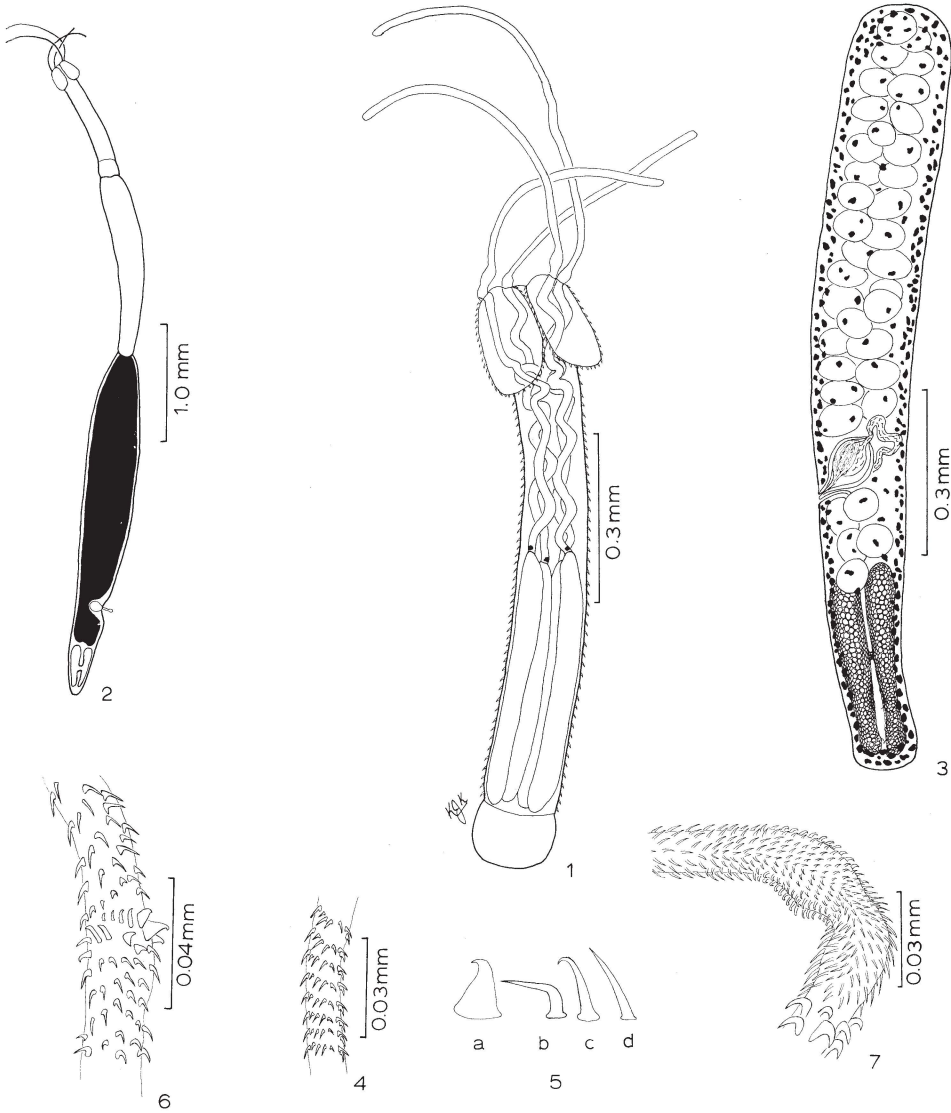
### *Eutetrarhynchus thalassius* sp.n. (Figs. 1-6)

**DESCRIPTION** (based on 12 specimens): Scolex (Fig. 1) 740-940 long, 120-180 greatest width across bothridia. Bothridia fused into 2 organs, lacking ventral notches. Pars bothridialis 190-210 long, 120-180 wide. Minute spines arm bothridial margins and outer surface of entire scolex. Two tentacles emerge from anterior end of each bothridium. Bases of tentacles somewhat swollen. Bulbs much longer than wide; pars bulbosa 380-580 long, 100-200 wide. Tentacle sheaths sinuous, with enigmatic organs at points of attachment to bulbs. Retractor muscles originate at bases of bulbs. Neck absent.

Mature strobila (Fig. 2) delicate, about 4 mm long, consisting of 3 proglottids. Proglottids acraspedote, anapolytic. Mature proglottids (Fig. 3) 700-800 long, 120-200 at greatest width. Gravid proglottid (Fig. 2) (attached to strobila) about 2.5 mm long, 200-400 at greatest width. Genital atrium absent. Reproductive systems protandrous. Genital pores postequatorial, irregularly alternating.

**MALE GENITALIA:** Twenty-eight to 35 testes in 2 longitudinal rows (Fig. 3) with some overlap; 5 or 6 posterior to cirrus pouch. Each testis 30-50 wide in mature segment. Cirrus pouch pyriform, transverse, thick-walled, 90-120 long, 40-100 wide. Cirrus unarmed or spines have been lost.

**FEMALE GENITALIA:** Ovary near posterior end of segment (Fig. 3), H-shaped



Figures 1-7. 1-6. *Eutetrarhynchus thalassius* sp.n. from a yellow-spotted stingray. 1. Scolex. 2. Entire worm. The black area illustrates the gravid uterus. 3. Mature proglottid. 4. Metabasal portion of the tentacle, lateral surface. 5. Types of hooks present: a. rosethorn-shaped, b. bent spiniform-shaped, c. falciform, d. spiniform. 6. Basal portion of the tentacle, lateral surface. 7. *Eutetrarhynchus geraschmidti* Dollfus, 1974. Basal and metabasal armature, lateral view.

with 2 equal, anteriorly directed lobes 300-400 long, 150-190 across tips of both anterior lobes. Vitellaria cortical, surrounding entire proglottid, only lateral at level of ovary; postovarian follicles present. Distal end of vagina posterior to cirrus pouch, with thick lining and muscular wall. Uterus a median, longitudinal tube, becoming a thin-walled sac filled with eggs extending posterior to cirrus pouch (Fig. 2). Eggs collapsed during preparation so could not be measured.

**ARMATURE:** Hook arrangement heteroacanthous, heteromorphous. Metabasal armature (Fig. 4) consisting of oblique half-circle rows of hooks, 8 hooks per row. Each row originates on inner surface of tentacle with rosethorn-shaped hook (Fig. 5a) 4–6 long, 1 falciform hook (Fig. 5c) 6–8 long, and 6 spiniform hooks (Fig. 5d) 6–11 long, decreasing in length toward tip of tentacle. Two regions of enlarged basal hooks (Fig. 6) separated by zone, about 140 long, of straight spiniform hooks, each 5–6 long. Proximal zone of enlarged hooks consisting of 2 alternating rows of bent spiniform hooks (Fig. 5b) 10–11 long. Distal zone of enlarged hooks consisting of a row of rosethorn-shaped hooks 5–10 long, making 3 turns around tentacle in a continuous spiral.

**TYPE HOST:** Yellow-spotted stingray, *Urolophus jamaicensis* (Cuvier, 1817).

**LOCATION:** Spiral valve.

**TYPE LOCALITY:** Discovery Bay, Jamaica.

**TYPE SPECIMENS:** USNM Helm. Coll.; holotype No. 75228, paratype No. 75229.

**ETYMOLOGY:** The specific name *thalassius* comes from the Greek and refers to the sea, from which this parasite was obtained.

### Remarks

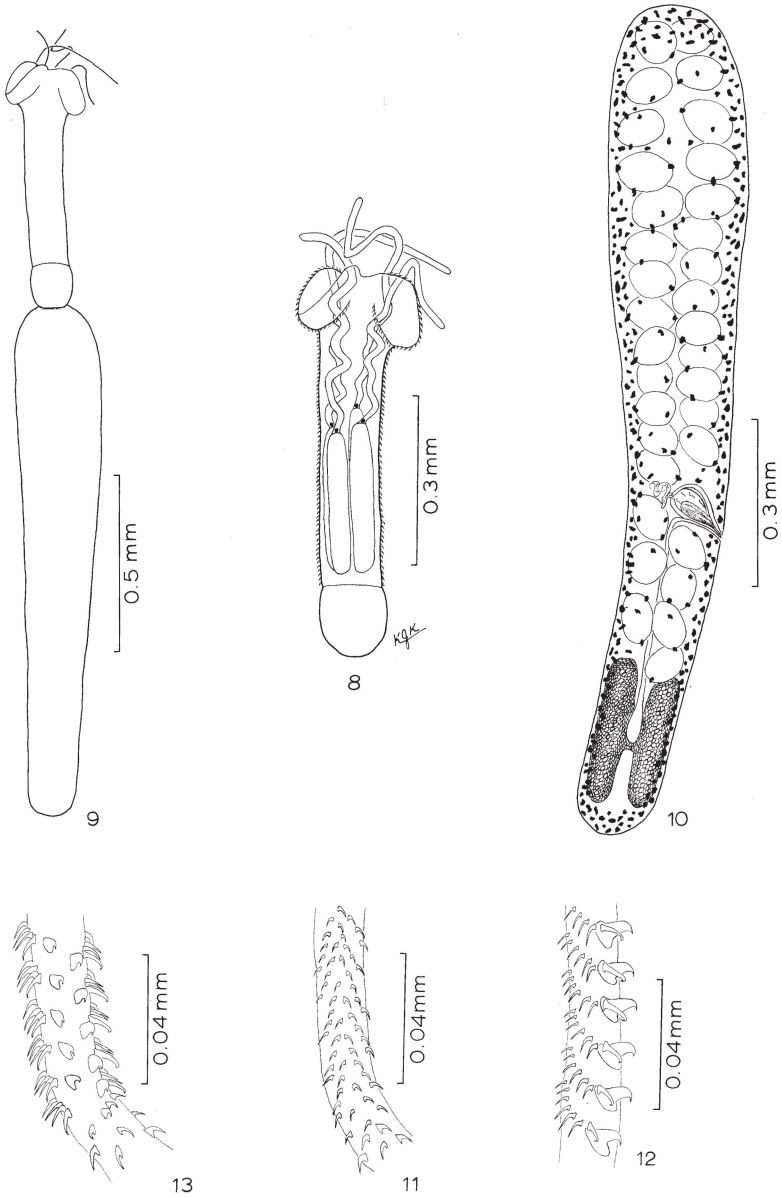
*Eutetrarhynchus thalassius* sp.n. most closely resembles *Eutetrarhynchus schmidti* Heinz and Dailey, 1974 and *Eutetrarhynchus geraschmidti* Dollfus, 1974, which also are the only species in this genus that have been reported from any species of *Urolophus*. On the basis of overall size and other measurements, *Eutetrarhynchus thalassius* most closely resembles *E. geraschmidti*. Drawings of the metabasal and basal armature of *E. geraschmidti* in the original description (Dollfus, 1974) are unclear, so a redrawing of the tentacular armature of *E. geraschmidti* (Fig. 7) is provided (based upon the type specimen of *E. geraschmidti* borrowed from the Muséum National d'Histoire Naturelle, Paris). The metabasal armature of *E. geraschmidti* consists of spiniform and falciform hooks only, with many more hooks than *Eutetrarhynchus thalassius*. The basal armature of *E. geraschmidti* consists of only one region of enlarged bent spiniform hooks, in two alternating rows. *Eutetrarhynchus thalassius* has two regions of enlarged basal hooks.

On the basis of these differences in the metabasal and basal armature, it is clear that *Eutetrarhynchus thalassius* represents a species new to science.

### *Eutetrarhynchus caribbensis* sp.n.

(Figs. 8–13)

**DESCRIPTION** (based on 8 specimens): Scolex (Fig. 8) 640–750 long, 230–320 greatest width across bothridia. Bothridia fused into two organs, lacking ventral notches. Pars bothridialis 130–160 long, 230–320 wide. Minute spines arm bothridial margins and outer surface of entire scolex. Two tentacles emerge from anterior end of each bothridium. Bulbs much longer than wide; pars bulbosa 260–300 long, 80–140 wide. Tentacle sheaths sinuous, with enigmatic organs at points of attachment to bulbs. Retractor muscles insert at bases of bulbs. Neck absent. Mature strobila (Fig. 9) delicate; proglottids acraspedote, anapolytic. Mature proglottids (Fig. 10) 1,000–1,750 long, 200–240 at greatest width. Genital atrium



Figures 8–13. *Eutetrarhynchus caribbensis* sp.n. from a yellow-spotted stingray. 8. Scolex. 9. Mature worm with scolex attached to mature proglottid. 10. Mature proglottid. 11. Outer surface of tentacle showing metabasal and basal armature. 12. Lateral surface of tentacle showing oblique half-circle rows of hooks. 13. Inner surface of tentacle showing metabasal and basal armature.

absent. Reproductive systems protandrous. Genital pores postequatorial, irregularly alternating.

**MALE GENITALIA:** Thirty-two or 33 testes in 2 longitudinal rows (Fig. 10) with some overlap; 6 or 7 posterior to cirrus pouch. Each testis 50–60 wide in mature

segment. Cirrus pouch pyriform, transverse, thick-walled, 60–120 long, 40–50 wide. Cirrus not clearly visible.

**FEMALE GENITALIA:** Ovary near posterior end of segment (Fig. 10), H-shaped with 2 equal, anteriorly directed lobes 200–230 long, 110–130 across tips of both anterior lobes. Vitellaria cortical, surrounding entire proglottid, only lateral at level of ovary, postovarian follicles present. Distal end of vagina posterior to cirrus pouch, with thick lining and muscular wall. Uterus a median, longitudinal tube. Specimens not gravid, so eggs not available for measurement.

**ARMATURE:** Hook arrangement heteroacanthous, heteromorphous. Metabasal armature (Figs. 11, 12) consisting of oblique half-circle rows of hooks, 10 hooks per row. Each row originates on inner surface of tentacle with 1 rosethorn-shaped hook 9–15 long, followed by 1 falciform hook 11–13 long, 2 bent spiniform hooks 11–15 long, and 6 straight spiniform hooks 7–14 long; decreasing in length from inner to outer surface, and from basal region to tip of tentacle. One region of enlarged basal hooks (Figs. 11, 13) consisting of 2 alternating rows of bent spiniform hooks 10–15 long, followed by 1 row of small rosethorn-shaped hooks 6–7 long.

**TYPE HOST:** Yellow-spotted stingray, *Urolophus jamaicensis* (Cuvier, 1817).

**LOCATION:** Spiral valve.

**TYPE LOCALITY:** Discovery Bay, Jamaica.

**TYPE SPECIMENS:** USNM Helm. Coll.; holotype No. 75226, paratypes No. 75227.

**ETYMOLOGY:** The specific name *caribbensis* refers to the location at which this parasite was recovered.

### Remarks

On the basis of overall size and other measurements, *Eutetrarhynchus caribbensis* most closely resembles *E. geraschmidti* and *E. thalassius*. The metabasal armature of *E. caribbensis* consists of rosethorn-shaped, falciform, bent spiniform, and straight spiniform hooks. *Eutetrarhynchus geraschmidti* has no rosethorn-shaped hooks. The basal armature of *E. caribbensis* consists of one region of enlarged, bent spiniform hooks. *Eutetrarhynchus thalassius* has two regions of enlarged basal hooks, one of which is a continuous spiral of rosethorn-shaped hooks. On the basis of these differences in tentacular armature, it is clear that *Eutetrarhynchus caribbensis* represents a species new to science.

### Acknowledgments

The authors thank Dr. Jeremy Woodley, Acting Head of the Discovery Bay Marine Laboratory, University of the West Indies, for his cooperation and loan of laboratory facilities during the initial stages of this study; and Dr. Alain Chabaud, Muséum National d'Histoire Naturelle, Paris, for the loan of type specimens of *E. geraschmidti*. This work was supported by a grant from the University of Northern Colorado Research Foundation.

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