

Monoecocestus centroovarium sp. n. (Cestoda: Anoplocephalidae) from Attwater's Pocket Gopher, *Geomys attwateri*, from the San Antonio Area of Texas

NORMAN O. DRONEN, RICHARD M. PITTS, AND MICHEAL J. SMOLEN

Laboratory of Parasitology, Department of Wildlife and Fisheries Sciences,
College of Agriculture and Life Sciences, Texas A&M University,
College Station, Texas 77843

ABSTRACT: Two of 6 (33%) Attwater's pocket gophers, *Geomys attwateri*, collected from Atascosa County south of San Antonio, Texas, in October and December 1986 were found to be infected with an undescribed anoplocephaline tapeworm, *Monoecocestus centroovarium* sp. n. The new species differs from existing species of *Monoecocestus* in having the ovary centrally located and no overlap between the ovary and the seminal receptacle. *Monoecocestus centroovarium* sp. n. most closely resembles *M. anoplocephaloides* from *Geomys breviceps* and *M. sigmodontis* from *Sigmodon hispidus*. It differs from both of these species by having fewer testes (36–39), smaller eggs (26 μ m in diameter), a smaller scolex (280 μ m wide), and excretory canals that do not anastomose.

KEY WORDS: *Monoecocestus centroovarium* sp. n., Cestoda, Anoplocephalidae, *Geomys attwateri*, Texas.

During a survey of the helminths of Attwater's pocket gopher (*Geomys attwateri* Tucker and Schmidly, 1981) from Atascosa County, Texas, an undescribed species of *Monoecocestus* Beddard, 1914, was found. Six species of *Monoecocestus* have been reported from rodents in North America: *M. americanus* Stiles, 1895, from *Erethizon dorsatum* and *Ondatra zibethicus* by Olsen, 1939; *M. anoplocephaloides* Douthitt, 1915, from *Geomys breviceps*; *M. giganticus* Buhler, 1970, from *E. dorsatum*; *M. sigmodontis* Chandler and Suttles, 1922, from *Sigmodon hispidus*; *M. thomasi* Rausch and Maser, 1977, from *Glaucomyx sabrinus*; and *M. variabilis* Douthitt, 1915, from *E. dorsatum*. *Monoecocestus anoplocephaloides* is the only species known from pocket gophers (Douthitt, 1915). The purpose of this study was to provide additional information on the helminths of the Attwater's pocket gopher.

Materials and Methods

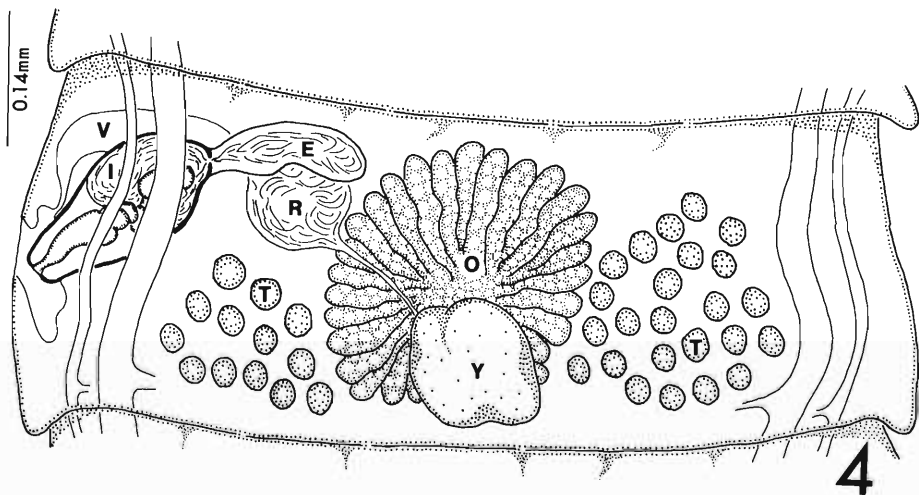
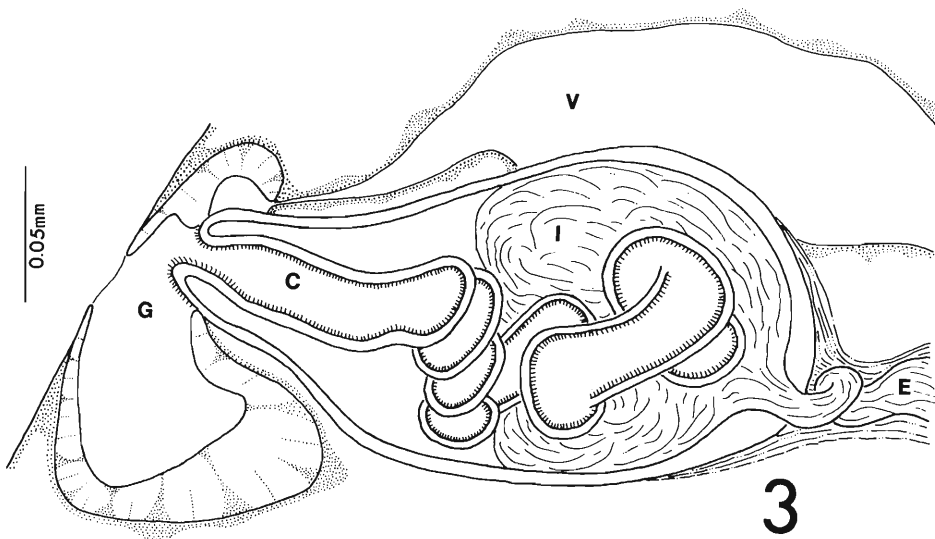
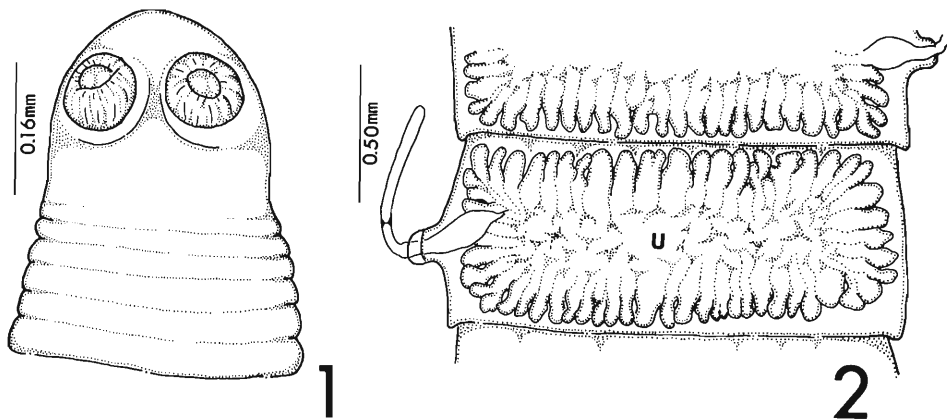
Six specimens of *Geomys attwateri* were trapped in Atascosa County, south of San Antonio, Texas, in October and December 1986 and examined for helminths. Cestodes were fixed in 10% formalin, stained in Semichon's carmine, and mounted in Canada balsam. Some specimens were sectioned by conventional paraffin technique. Measurements are in micrometers, with the mean followed by the range in parentheses, unless otherwise stated.

Results

Two of 6 (33%) *G. attwateri* from Texas were infected with an undescribed species of *Monoecocestus*.

Monoecocestus centroovarium sp. n. (Figs. 1–4)

DESCRIPTION (based on 15 specimens): Strobila craspedote, total length of worms 33 mm (28–39), composed of 60–80 proglottids. Scolex 210 (195–235) long by 280 (240–305) wide. Suckers well developed, 108 (100–112) in diameter. Neck short, first proglottids wider than long, approximately 500 wide. Mature proglottids 364 (360–370) long by 960 (930–1,010) wide. Genital atria regularly alternating, 47 (45–50) deep in mature proglottids, 145 (140–155) long in gravid proglottids when everted. Thirty-six to 39 testes present (12–13 poral, 24–26 antiporal), 37–44 in diameter, scattered laterally in the regions between the ovary and the excretory ducts. Cirrus sac approximately $\frac{1}{4}$ as long as width of mature proglottids, 218 (208–221) long by 120 (114–130) wide. Extended cirrus approximately 600 long armed with numerous minute spines. External seminal vesicle 218 (200–225) long by 26 (23–32) wide. Ovary centrally located, 241 (224–262) long by 220 (211–246) wide, composed of 26–30 digitiform lobes. Vitellarium located in posterior $\frac{1}{3}$ of mature proglottids, ventral to ovary, 93 (85–99) long by 104 (98–112) wide. Vagina opening into genital atrium immediately anterior to opening of male pore. Vagina and cirrus apparatus located dorsally to both lateral excretory canals. Excretory canals not anastomosing, ventral excretory canals 40 (35–50) wide, dorsal excretory canals 11 (9–14) wide. Seminal receptacle poral to ovary, not over-



lapped by ovary, 93 (88–97) long by 94 (88–96) wide. Gravid proglottids 750 (690–790) long by 1,975 (1,850–2,010) wide. Gravid uterus distinctly reticulate. Eggs ovoid, 26 (23–29) in diameter, oncospheres 16 (15–18) in diameter, pyriform apparatus indistinct, approximately 3–5 long.

TYPE HOST: *Geomys attwateri* Tucker and Schmidly, 1981.

TYPE LOCALITY: Atascosa County, Texas. 30 km south of San Antonio, 29°12'N, 94°45'W.

HOLOTYPE: USNM Helm. Coll. No. 83061.

PARATYPES: USNM Helm. Coll. Nos. 83062 (2 specimens); Texas Cooperative Wildlife Coll. No. 93-4593 (5 specimens), Department of Wildlife and Fisheries Sciences, Texas A&M University, College Station, Texas.

ETYMOLOGY: The species name refers to the unique central placement of the ovary for this species of *Monoecocestus*.

Discussion

Of the 6 species of *Monoecocestus* known from North American rodents, *M. sigmodontis* from *Sigmodon hispidus* and *M. anoplocephaloides* from *Geomys breviceps* most closely resemble *M. centroovarivum* sp. n. in general proglottid morphology and in having the ovary nearly centrally located. The new species differs from both *M. sigmodontis* and *M. anoplocephaloides* by having fewer testes (36–39 compared to 70 and 70–110, respectively), smaller eggs (26 in diameter as compared to 47–53 and 30–40, respectively), a smaller scolex (280 wide as compared to 380–450 and 320–390, respectively), and excretory canals that do not anastomose (Chandler and Suttles, 1922; Douthitt, 1915; Spasskii, 1951).

Also, in all specimens of *M. centroovarivum* sp. n. examined, the ovary was centrally located rather than being poral, and the ovary does not overlap the seminal receptacle, as is found in all other described species of *Monoecocestus*.

Acknowledgments

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 Figures 1–4. *Monoecocestus centroovarivum* sp. n. (Anoplocephalidae) from *Geomys attwateri*. 1. Scolex. 2. Gravid proglottid showing reticulate uterus (U). 3. Genital atrium region showing genital atrium (G), cirrus (C), internal seminal vesicle (I), external seminal vesicle (E), and vagina (V). 4. Mature proglottid showing internal seminal vesicle (I), external seminal vesicle (E), vagina (V), seminal receptacle (R), ovary (O), vitellarium (Y), and testes (T).