Sphaeridiotrema echinosaurense sp. n. (Trematoda: Psilostomidae) from Echinosaura horrida horrida in Ecuador

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ABSTRACT: Sphaeridiotrema echinosaurense sp. n. is described from the intestine of the lizard, Echinosaura horrida horrida from Ecuador. Similarities with the other members of the genus, S. globulus, S. macrocotyla, and S. spinoacetabulum, are discussed. Sphaeridiotrema echinosaurense differs from these species in having a reptilian host, smaller sized and greater number of eggs, and more extensive vitellaria.

Seven of 34 Echinosaura horrida horrida Boulenger, 1890 from western Ecuador examined for intestinal parasites were found to harbor a psilostome trematode not readily assigned to any species listed by Yamaguti (1971). The lizards had been fixed in 10% formalin and preserved in 70% ethanol. Worms collected from the preserved lizards were stored in 70% ethanol, stained in Semichon’s acetocarmine, dehydrated in alcohol, cleared in xylene, and mounted in gum Damar. Serial sections of six worms stained in Semichon’s acetocarmine or Harris’ hematoxylin were cut at eight micrometers. Measurements, based on 12 worms, are expressed in micrometers. Descriptions of certain fine morphological features were made from serial sections, and drawings were made from projected photomicrographs.

Sphaeridiotrema echinosaurense sp. n.
(Fig. 1)

HOST: Echinosaura horrida horrida Boulenger, 1890.
LOCALITY: Centro Cientifico Rio Palenque, Pinchicha Province, Ecuador.
LOCATION: Intestine.
DESCRIPTION: Body 1,026 (930–1,180) by 652 (570–750), tegument thick; oral sucker subterminal, 156 (112–203) by 193 (130–229); acetabulum anterior, 323 (280–350) by 404 (340–430); prepharynx very short; pharynx subspherical, 126 (99–143) in diameter; esophagus short, thick walled; intestinal ceca terminate just posterior to testes; genital pore sinistral, extracecal, anterior to acetabulum; testes transversely elongate, entire, adjacent or oblique (sinistral testis usually anterior to dextral testis), midway between acetabulum and posterior end of body; sinistral testis 98 (65–138) by 218 (187–252); dextral testis 104 (73–156) by 226 (161–268); cirrus sac elongate, claviform, originating adjacent to anterior edge of acetabulum, enclosing large simple seminal vesicle and winding, muscular cirrus with very extensive pars prostatica; ovary ovate, entire, anterior to dextral testis, 101 (60–216) by 116 (94–146); vitellaria consisting of multinucleate follicles, in lateral bands extending from oral sucker to posterior end, confluent in preovarian to midacetabular region; seminal receptacle a sac adjacent to ovary; uterine convolutions extend transversely in midovarian to postacetabular region; eggs operculate, thick walled, few in number (40–60), 60 (49–70) by 32 (26–36); excretory vesicle Y-shaped, thick walled, extending to level of ovary.
Figure 1. *Sphaeridiotrema echinosaurense* sp. n., from *Echinosaura horrida horrida*. Composite drawing from holotype and sectioned paratypes. Abbreviations: Ce, intestinal ceca; EV, excretory vesicle; Ov, ovary; SR, seminal receptacle; SV, seminal vesicle; Te, testis; VF, vitelline follicle.

**Discussion**

The only previously described member of the family Psilostomidae parasitic in reptiles is *Cotylotretus rugosus* Odhner, 1902, from the intestine of the snake, *Spilotes pullatis* from Brazil and Sudan (Yamaguti, 1971). *Cotylotretus rugosus* belongs in the subfamily Cotylotretinae and is diagnostically dissimilar from *Sphaeridiotrematinae*.

*Sphaeridiotrema echinosaurense* appears similar to the described species of *Sphaeridiotrema*, namely *S. globulus* (Rudolphi, 1819) Odhner, 1913, *S. macrocotyla* (Macy and Bell, 1968) Yamaguti, 1971, and *S. spinoacetabulum* Burns, 1961. The existing and proposed species share an ovoid body shape, very large acetabulum, subterminal oral sucker, extracecal genital pore, anterior cirrus pouch, submedian ovary, and bilateral vitelline bands extending to or near the posterior extremity.

*Sphaeridiotrema echinosaurense* is parasitic in a reptile while other members of the genus were found in birds. Macy and Bell (1968) described the tegument of *S. macrocotyla* as having small spines on the anterior fourth of the body. Burns (1961) described acetabular spines on *S. spinoacetabulum*. No spines were observed on *S. echinosaurense*. Although Price (1934) redescribed *S. globulus* as possessing "as many as 60 eggs," this was considered a misprint by Burns (1961), since descriptions of the other species suggest that possession of a smaller number of eggs was more common (one to several). *Sphaeridiotrema echinosaurense* possesses more (40–60) and much smaller sized eggs. The eggs of *S. globulus*, as redescribed by Price (1934), are almost twice the size of the eggs of *S.*
*echinosaurene* *(90–105 by 60–67 compared with 49–70 by 26–36). The vitelline follicles of *S. echinosaurene* are smaller than those of the other species, extend to the anterior extremity and are confluent behind the acetabulum. In the other three species the vitellaria are restricted to lateral bands adjacent the ceca in the postpharyngeal region. The pars prostatica in the cirrus pouch of *S. echinosaurene* also is more extensive than in the other species.

The lack of proper fixation prevents a more detailed description of the ootype region. Elucidation of the life cycle and proper treatment of specimens of *Sphaeridiotrema echinosaurene* are necessary to determine an exact relationship with other members of the family Psilostomidae.

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**Literature Cited**


**Editor’s Note**

Authors submitting manuscripts of a survey or taxonomic nature for publication in the Proceedings of the Helminthological Society of Washington are urged to deposit representative specimens in a recognized depository such as the National Parasite Collection at Beltsville, Maryland and include the accession numbers in the manuscript.