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Daysmetra nicolli Holl and Allison, 1935 (Trematoda: Plagiorchiidae) in *Nerodia erythrogaster neglecta* (Conant, 1949) from Southern Illinois

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ABSTRACT

Dasymetratid digeneans removed from the oral cavity of a single copperbelly water snake, *Nerodia erythrogaster neglecta*, captured in Pope County, Illinois, were identified as *Dasymetra natricis*. A new host record is documented for *D. natricis* and it is the first time the parasite has been reported from Illinois.

INTRODUCTION

Two subspecies of the plainbelly water snake, *Nerodia erythrogaster* (Forester), occur in Illinois (Smith, 1961), namely, the yellowbelly water snake, *Nerodia erythrogaster flavigaster* (Conant, 1949), and the copperbelly water snake, *Nerodia erythrogaster neglecta* (Conant, 1949). The range of *Nerodia erythrogaster* extends from northeastern Mexico eastward through southern United States to the Atlantic Coastal Plain and northward along the Mississippi and Wabash Rivers as far as Rock Island, Illinois, and southern Michigan (Ernst and Barbour, 1989; Conant and Collins, 1991). *Nerodia erythrogaster neglecta* has a discontinuous range in the central Midwest and integrates with *Nerodia erythrogaster flavigaster* over a relatively broad portion of southern Illinois.

Reports on digenetic trematodes in the oral cavity of species of *Nerodia* in Illinois have been restricted to the detection of ochetosomatid digeneans. Dyer and Ballard (1989) found *Ochetosoma ellipticum* (Pratt, 1990) in the oral cavity of *Nerodia rhombifera* (Hallowell, 1852) and *Nerodia erythrogaster* (Forester) from Johnson and Jackson counties. More recently, Dyer and Ballard (1991) reported *Ochetosoma aniarum* (Leidy, 1891) Skrjabin and Antipin, 1957 in the oral cavity of *Nerodia cyclopion* (Dumeril, Bibron and Dumeril, 1854) from Union County.

In conjunction with an ecological study on the status, distribution, and habitat of *Nerodia erythrogaster neglecta* in Illinois (Brandon and Ballard, 1991) an opportunity became available to examine a specimen for the presence of digeneans in the oral cavity. The present report is concerned with the detection of dasymetratid digeneans (Trematoda: Plagiorchiidae) in the mouth of *Nerodia erythrogaster neglecta* (Conant, 1949).

MATERIALS AND METHODS

The oral cavity of an adult gravid female *Nerodia erythrogaster neglecta* collected 22 June, 1991, in Pope County, southern Illinois was examined within a few hours of capture for the presence of helminths. Several digeneans were removed with a cotton swab saturated with tap water, and then transferred to a container of tap water where egg release was observed. After all or most of the eggs were released from the uterus, each digenean was transferred to a slide, and a crystal or urethane added to the water to induce relaxation. A coverslip was then added and the specimen studied alive. Later, the specimen was fixed in AFA (alcohol-formalin-acetic acid), stained with Harris' hematoxylin, dehydrated, cleared in beechwood creosote, and mounted in Canada balsam. Voucher specimens have been deposited in the United States National Museum (USNM) Helminthological Collection No. 82251. The host, *Nerodia erythrogaster neglecta*, collected by Steve Karsen, was deposited in the SIUC Department of Zoology reptile collection, catalogued as R-2312.

RESULTS AND DISCUSSION

Our specimens agree with the description of *Dasymetra nicolli* as given by Holl and Allison (1935b). Holl and Allison (1935a) described *Zeugorchis natricis* from the uteri of the common watersnake, *Natrix sipedon* Linnaeus, from near Grove City, Pennsylvania. Later the same year, Holl and Allison (1935b) described *Dasymetra nicolli* on the basis of six specimens from the stomach of *Natrix sipedon* also taken near Grove City, Pennsylvania. Since both *Zeugorchis natricis* and *Dasymetra nicolli* were found in the same species of snake and from the same locality, Goodman (1951) considered them synonymous. Since the published description of *Z. natricis* is June, 1935, and that of *D. nicolli* is July 1935, Goodman (1951) proposed that the earlier published name be retained so that the new combination becomes *Dasymetra natricis* (Holl and Allison, 1935a) with *D. nicolli* Holl and Allison, 1935b as a synonym.

We have examined the type specimens of *Zeugorchis natricis* USNM Helm. Coll. No. 39503 and *Dasymetra nicolli* USNM Helm. Coll. No. 8917, and have concluded that these taxa are not conspecific. Although *Z. natricis* and *D. nicolli* were found in the same species of snake and from the same locality, the former is a parasite of the reproductive system while the later is a parasite of the digestive system.

Cable and Sanborn (1970) redescribed *Z. natricis* on the basis of 15 specimens from the oviduct of a single *Natrix sipedon* taken in Wabash County, north central Indiana. Their description differs from the original account in features which seem likely to vary with the age of the parasite. Yamaguti (1971) transferred *Zeugorchis natricis* to the genus *Manodistomum* Stafford, 1905, on the basis that *Manodistomum* is the larva or juvenile form of *Zeugorchis* Stafford, 1905, so that the new combination becomes *Manodistomum natricis* (Holl and Allison, 1935a) Yamaguti, 1971.

The finding of *Dasymetra nicolli* in the oral cavity of *Nerodia erythrogaster neglecta* from southern Illinois constitutes a new host and new locality record for this digenean.

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