



Two new polystomes (Monogenea: Polystomatidae) from the eyes of North American freshwater turtles

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Abstract

Neopolystoma moleri n. sp. and *Neopolystoma grossi* n. sp. are described as new polystome species on the eyes of *Apalone ferox* and *Pseudemys concinna floridana*, respectively from Florida, USA. Eleven other polystome species are currently known from chelonian hosts in the USA, but only *Neopolystoma elizabethae* and *Neopolystoma fentoni* were described from the eye. Ocular polystomes are characterized as having spindle-shaped eggs; an exceptionally firm grip on the host; as well as the ability to stretch, which gives them the advantage of being stationary while extending to feed, reducing the risk of being dislodged. The two new species can be distinguished from known *Neopolystoma* species by a combination of characteristics including marginal hooklet morphology.

Key words: attachment, *Apalone ferox*, eye, Florida, freshwater turtle, *Pseudemys concinna floridana*, North America, *Neopolystoma*, *Neopolystoma moleri* n. sp., *Neopolystoma grossi* n. sp., Polystomatidae, USA

Introduction

Polystomes (Monogenea, Polystomatidae) are currently known to be represented by 24 genera (Raharivololoniaina *et al.* 2011). The Polystomoidinae are parasites of caecilians and freshwater turtles and are characterised by undiverticulated intestinal caeca of equal length that do not form prehaptoral nor haptoral anastomoses; distribution of vitelline follicles in two lateral fields; a prominent compact medial spherical testis; skeletal elements present in the haptoral suckers, and a genital bulb with genital spines that may be arranged in two rings. Chelonian polystomatids are represented by three genera: *Polystomoides* Ward, 1917, with two pairs of hamuli; *Polystomoidella* Price, 1939, with one pair, and *Neopolystoma* Price, 1939, with none. Currently 54 turtle polystome species are known from 55 host species around the world (Morrison & Du Preez 2011). Eleven species are known from North America, namely two *Polystomoidella*: *Polystomoidella oblongum* (Wright, 1879) and *Polystomoidella whartoni* (Wright, 1879); four *Polystomoides*: *Polystomoides coronatum* (Leidy, 1888), *Polystomoides multifalx* (Stunkard, 1924a), *Polystomoides oris* Paul, 1938, and *Polystomoides pauli* Timmers & Lewis, 1979; and five *Neopolystoma*: *Neopolystoma elizabethae* Platt, 2000, *Neopolystoma fentoni* Platt, 2000, *Neopolystoma orbiculare* (Stunkard, 1916), *Neopolystoma rugosa* (MacCallum, 1918), and *Neopolystoma terrapenis* (Harwood, 1932). Of these, only *N. elizabethae* and *N. fentoni* are known from the conjunctival sack of the eye. America has a rich freshwater turtle diversity, with 46 species occurring in North America alone (Bonin *et al.* 2006), which explains the rich polystome biodiversity. It is probable that several unnamed USA turtle polystomes are yet to be discovered.

Material and methods

Turtles were obtained by trapping as well as examining frozen road kills obtained from the Fish & Wildlife Division in Gainesville, Florida. Baited crayfish traps were set in several ponds on the premises of the U.S. Geological Survey (USGS) research facility in Gainesville as well as in ponds in the Gainesville surroundings. Captured turtles