

***Gyrinicola chabadamsoni* n. sp. and *G. tba* (Dinnik 1933) (Nematoda, Oxyuroidea) from tadpoles of the hybridogenetic complex *Rana lessonae-esculenta* (Amphibia, Ranoidea)**

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Abstract

Two morphological types of the viviparous oxyurid nematode *Gyrinicola* were recovered from waterfrog tadpoles in France (Ain department, Rhône-Alpes region) and assigned to two species: *G. tba* (Dinnik 1930), redescribed, and *G. chabadamsoni* n. sp.

Gyrinicola tba is close to *G. batrachiensis* (Walton 1929) and *G. chabaudi* Araujo and Artigas 1982 in that the female possesses a long tail and few cuticular buccal flaps. The new species, type host *Rana* kl. *esculenta*, is distinct by several characters: in females, by the 12 cuticular buccal flaps with internal crests, short caudal filament, short ovary producing embryonated eggs and large uterine pouch containing males and embryos, like in *G. japonica* Yamaguti 1938, and narrower thick-shelled eggs with subapical elongated operculum; in males, by the round genital cone, the third caudal pair of papillae at mid tail, length of the body and caudal part. *Gyrinicola tba* and the new species were found in *R. lessonae* and in the hybrid *R. kl. esculenta* but each with different seasonal infection rates.

Comparative analyses of the data from the five *Gyrinicola* species were done. All females have one genital tract producing thick-shelled female eggs. The second genital tract is one of four types corresponding to different reproductive patterns: i) it forms a uterine pouch containing males in *G. chabadamsoni* and *G. japonica*; ii) it forms a slender uterus containing numerous autoinfective larval stages in *G. batrachiensis* from *R. clamitans*; iii) it forms a slender uterus containing only a few embryos in *G. tba* and *G. chabaudi*; and iv) it has regressed in *G. batrachiensis* from *Bufo americanus*. Haplodiploidy is expected or proved for types i) and ii) and thelytoky for types iii) and iv).

Key words: *Gyrinicola*, Oxyuroidea, tadpoles, *Rana*, uterine pouch, viviparous, haplodiploidy, thelytoky

Introduction

The oxyurid *Gyrinicola* Yamaguti 1938, Pharyngodonidae, presents remarkable biological traits. It inhabits the enlarged spirally-coiled colon of herbivorous tadpoles and probably has a mutualistic relation with its hosts (Pryor and Bjorndal 2005). With one species common in Canada, *G. batrachiensis* (Walton 1926), Adamson demonstrated for the first time haplodiploidy in a nematode, males having n chromosome and females 2n (Adamson 1981c). Haplodiploidy was later shown in other oxyurid genera (Adamson and Petter 1983) and is now considered to be a common feature in this group of nematodes (Adamson 1984). In addition to marked sexual dimorphism as in other oxyurids, the thorough pioneer studies of Adamson (1981a; b; c; d and e) showed that *Gyrinicola* had a complex reproductive anatomy in females. Each genital tract produced a distinct type of eggs: either thick-shelled unembryonated eggs, or thin-shelled larvated eggs. The first type acts as transmission agents, the second as autoinfective agents. Moreover, the development of the genital tract