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TRIODONTOLEPIS RYSAVYI SP. N. (HYMENOLEPIDIDAE), A NEW CESTODE SPECIES FROM NEOMYS ANOMALUS

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Abstract. A description is given of the new cestode species *Triodontolepis rysavyi* sp.n. recovered from *Neomys anomalus*. It differs from the remaining members of the genus *Triodontolepis* parasitizing shrews of the genus *Neomys* mainly in its shape, measurements and in the number of hooks. The validity of the generic criteria has been re-examined and a new analysis of the genus *Triodontolepis* has been made.

During ecological studies on cestodes of small mammals performed in the surroundings of Prague in 1971, a new cestode species (67 worms) was found in 4 specimens of *Neomys anomalus* Motaz, 1907. The species, a member of the genus *Triodontolepis* Yamaguti, 1959, was named *Triodontolepis rysavyi* in honour of B. Ryšavý, D.Sc., corresponding member of the Czechoslovak Academy of Sciences, on the occasion of his 50th birthday.

Triodontolepis rysavyi sp. n. (Figs. 1, 2, 3 C)

Host: *Neomys anomalus;* location: small intestine; locality: Lidice.

The holotype is deposited in the collection of the Institute of Parasitology, Czechoslovak Academy of Sciences, Prague, under no. 39.

Description: Overall length 42 mm, width 0.6 mm. Scolex (Fig. 1 A) bulb-shaped. 0.350 mm in diameter. Suckers spherical, 0.140 mm in diameter. Rostellum 0.100 × × 0.080 mm. Rostellar sheath 0.200 mm long, 0.110 mm wide. Rostellum bears 30 hooks in a single row (Fig. 1 B); length of hooks 26 μ. Hermaphroditic segments 0.250—0.350 mm wide, length approximately half the width (Fig. 1C). Testes spherical, 0.052—0.054 mm in diameter, mostly juxtaposed in the proximal half of the segment, one testis poral, two antiporal. Cirrus sac extending beyond the mid-line of the proglottid this being one of the differentiating features. Genital pore lateral in the anterior half of the segment. Cirrus well developed, covered with spines, in many segments protruding out of it; vagina opens into a genital atrium under the cirrus sac. Ovary lobate, transversely elongate, situated in the centre of the upper half of the proglottid. Vitelline gland under the ovary, 0.028 mm in diameter. In gravid segments (Fig. 2 A), there are one to two capsulated formations with 8—14 eggs inside. Size of capsulated formation 0.400 × 0.300 mm in diameter. Eggs widely ovoid, 0.160 × 0.130 mm. Oncosphere 0.080 × 0.060 in diameter. Embryonic hooks 0.020 mm long.

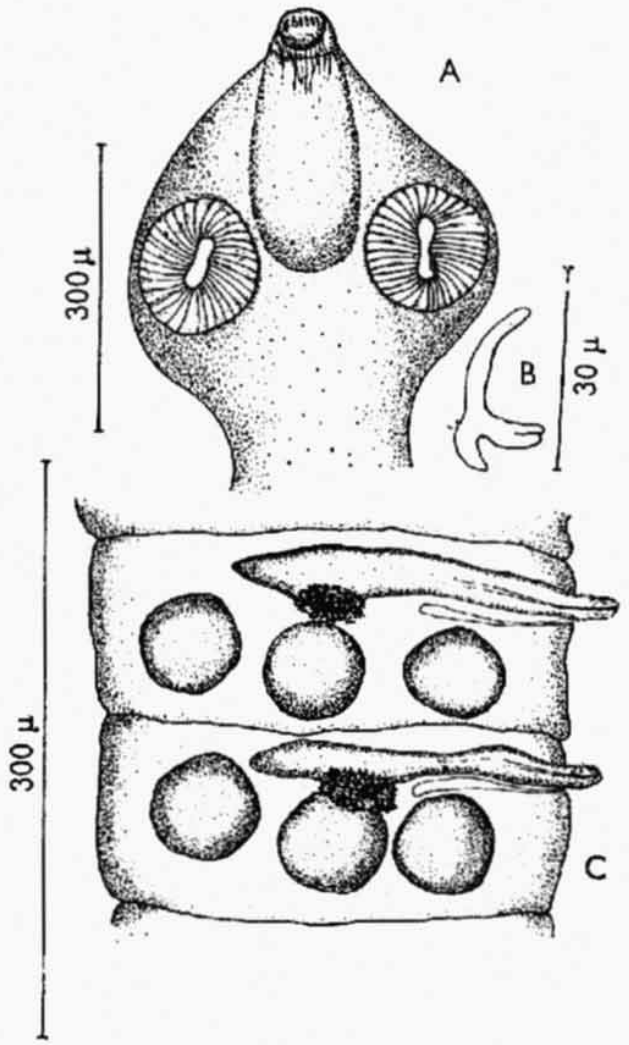

Fig. 1. *Triodontolepis rysavyi* sp.n. A—scolex; B—hook; C sexually mature proglottid.

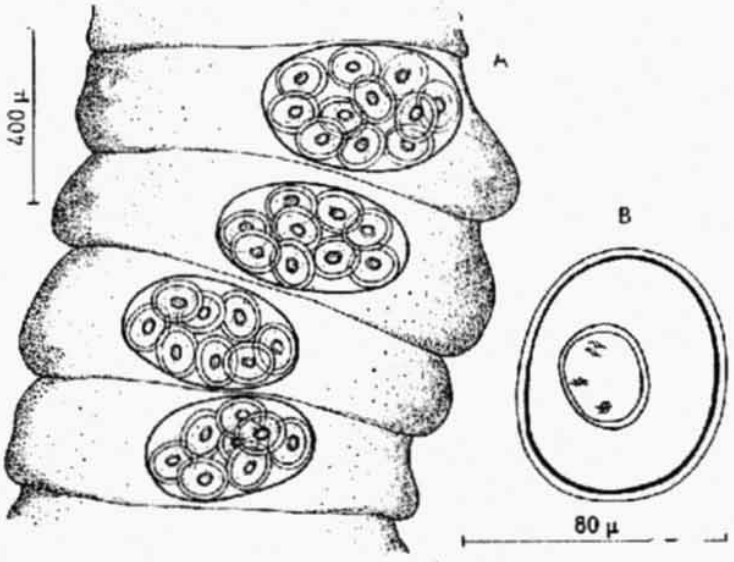

Fig. 2. *Triodontolepis rysavyi* sp.n. A—gravid proglottid; B—egg.

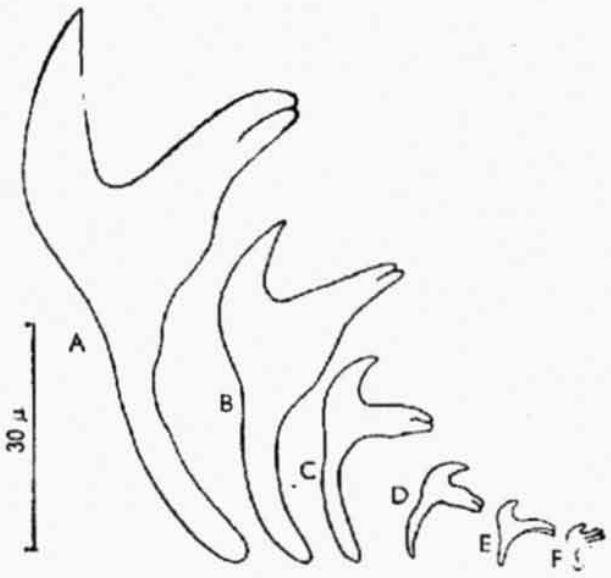

Fig. 3. Hooks of cestodes of the genus *Triodontolepis*. A—*Triodontolepis sumavensis*; B—T. *bifurca*; C—T. *rysavyi*; D—T. *hamanni*; E—*T. kurashvilii*; F—*T. skrjabini*.

Differential diagnosis: At present, 5 species of the genus *Triodontolepis* are known to parasitize shrews of the genus *Neomys: Triodontolepis bifurca* (Hamann, 1819)—10 hooks, length 45—60 μ (Fig. 3B); *T. sumavensis* (Prokopič, 1957)—10—12 hooks, length 68—80 μ (Fig. 3A); *T. hamanni* (Mrázek, 1891)—16—20 hooks, length 18—20 (Fig. 3D); *T. kurashvilii* Prokopič et Mazaberidze, 1971—30—34 hooks, length 30—32 μ (Fig. 3E); *T. skrjabini* Spassky et Andrejko, 1968—10 hooks, length 28 μ (Fig. 3F). The new species *Triodontolepis rysavyi* sp. n. has 30 hooks, length 26—28 μ (Fig. 3 C).

Having regard to the survey of species given by Prokopič and Mazaberidze (1971), it is evident that the new species resembles *Triodontolepis hamanni* (Fig. 3C, D) in shape but not in the number and size of the hooks. *T. bifurcus* and *T. sumavensis* differ considerably from the new species both in the number and the size of their hooks.

T. kurashvilii (Fig. 3E) has a similar number of hooks, but their shape is completely different; in *T. kurashvilii* the handle of the hook is very short (15 μ) and the guard is longer, while in *T. rysavyi* sp. n. the handle is long (18—20 μ) and the guard is short (8—11 μ).

Discussion: The genus *Triodontolepis* Yamaguti, 1959 was created by Yamaguti (1959) to receive *Hymenolepis tridontophora* Soltys, 1954 as the type species of the genus. Prokopič and Groschaft (1961) placed this species in synonymy with *Hymenolepis bifurca* (Hamann, 1819) and assigned it to the genus *Vampirolepis* Spassky, 1954.

According to Yamaguti (1959), the bifurcation of the guard of the rostellar hooks is one of the principal differentiating signs. By contrast, we observed in our detailed study on the hooks of members of the genus *Triodontolepis* that the guard is not bifurcated and that bifurcation is mimicked by a thickening of both sides of the guard which, however, are connected by a distally undulated membrane. Through this thickening a groove of varying depth is formed in the centre of the guard. Yamaguti's (1959) observation of 10 and more hooks in members of the genus *Triodontolepis* is consistent with our findings. Another species assigned by Yamaguti (1959) to this genus is *Triodontolepis miniopteri* (Sandars, 1957). Spassky and Andrejko (1969) pointed out that, apart from the shape of the hooks of *T. miniopteri*, the remaining signs are consentient with those of members of the genus *Vampirolepis* Spassky, 1954 and, therefore, assigned it to this genus. On the basis of the shape of the hooks, these authors assigned also *T. sumavensis* (Prokopič, 1957) and *T. skrjabini* Spassky et Andrejko, 1968 to the genus *Triodontolepis*.

Prokopič and Mazaberidze (1971) described *Triodontolepis kurashvilii* from *Neomys fodiens* from Georgia placing it in the genus *Triodontolepis* on the basis of the structure of the rostellar hooks; the same criterion was considered when accommodating *T. hamanni* (Mrázek, 1891) in this genus.

Spassky and Andrejko (1969) maintained, by contrast to Yamaguti (1959), that the species with more than 10 hooks should not be assigned to the genus *Triodontolepis* because 10 hooks are typical of this genus. This was one of the reasons for placing *T. miniopteri* in the genus *Vampirolepis*. According to these authors, the presence of capsule-shaped formations covering the eggs (they call them "cocoons") is another generic sign of the genus *Vampirolepis*, because these do not occur in the remaining genera.

In our opinion, the principal character of the genus *Triodontolepis* is the typical lateral thickening of the guard of the hooks, which has not been observed in the remaining genera of the family Hymenolepididae. Therefore, the species *Triodontolepis miniopteri* should be assigned to the genus *Triodontolepis*. A similar structure was found by Prokopič and Mazaberidze (1971) in *T. hamanni*, assigned by Spassky and Andrejko (1969) to the genus *Vampirolepis*.

As regards the "cocoons" considered by Spassky and Andrejko (1969) to be a generic sign of the genus *Triodontolepis* these formations were observed also in other genera such as *Coronacanthus*, *Insectivorolepis*, etc.

On the basis of these facts the principal differentiating sign of the genus *Triodontolepis* is the structure of the guard of the rostellar hooks and, therefore, Yamaguti's (1959) generic diagnosis should be amended in that the guard of the rostellar hooks is not bifurcated, but that bifurcation is mimicked by a groove of different depth in the centre of the guard originating from a thickening of its lateral parts.

According to this amendment we suggest to place the following species in the genus *Triodontolepis:*

Triodontolepis bifurca (Hamann, 1891), syn. *Taenia bifurca* Hamann, 1891, nec

Hymenolepis bifurca: Baer et Joyeux, 1943, *Hymenolepis tridontophora* Soltys, 1954, *Vampirolepis tridontophora*: Prokopič, 1957, *Triodontolepis tridontophora*: Yamaguti, 1959.

Additional species placed in this genus: *Triodontolepis hamanni* (Mrázek, 1891), syn. *Cysticercoides hamanni* Mrázek, 1891, *Hymenolepis neomydis* Baer, 1931, *Dicranotaenia neomydis*: Lopez—Neyra, 1942, *Hymenolepis hamanni*: Joyeux and Baer, 1952, *Vampirolepis neomydis*: Spassky, 1954, *Vampirolepis hamanni*: Prokopič et Groschaft, 1961.

Triodontolepis kurashvilii Prokopič et Mazaberidze, 1971,

Triodontolepis miniopteri (Sandars, 1957), syn. *Hymenolepis miniopteri* Sandars, 1957, *Vampirolepis miniopteri:* Spassky et Andrejko, 1969.

Triodontolepis rysavyi sp. n.

Triodontolepis skrjabini Spassky et Andrejko, 1968

Triodontolepis sumavensis (Prokopič, 1957), syn. *Hymenolepis bifurca*: Baer et Joyeux, 1943, *Vampirolepis sumavensis* Prokopič, 1957.

TRIODONTOLEPIS RYSAVYI SP. N. (HYMENOLEPIDIDAE), НОВЫЙ ВИД ЦЕСТОДЫ ОТ *NEOMYS ANOMALUS*

Я. Прокопич

Резюме. Дано описание нового вида цестоды *Triodontolepis rysavyi* sp. n. от *Neomys anomalus*. Этот вид отличается от остальных представителей рода *Triodontolepis*, паразитирующих на бурозубках рода *Neomys*, главным образом по форме, размерам и числу крючков. Проверена обоснованность родовых критериев и сделан новый анализ рода *Triodontolepis*.

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