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ECHINOCOTYLE VOJTEKI SP. N. (CESTODA: HYMENOLEPIDIDAE), A PARASITE OF THE BLACK-HEADED GULL (LARUS RIDIBUNDUS L.)

P. KOUBEK

Institute of Vertebrate Zoology, Czechoslovak Academy of Sciences, Brno

Abstract. *Echinocotyle vojteki* sp.n. is described from the small intestine of black-headed gull (*Larus ridibundus* L.). It differs from the other known species of the genus *Echinocotyle* Blanchard, 1891 in the shape of rostellar hooks, number of hooks on suckers, length of cirrus and structure of genital atrium.

During the examination of the helminth fauna from 531 specimens of *L. ridibundus* L. from the locality Jaroslavice (South Moravia) a new cestode species, *Echinocotyle vojteki* sp.n., was identified. It was recovered from the large intestine of both adult and young gulls from June to August. The incidence of infection was 1.3 % at the intensity of 1—6 cestodes per one host. A total of 21 strobilae were studied.

Echinocotyle vojteki sp.n. Fig. 1

Host: *Larus ridibundus* L., localization: small intestine
Locality: Jaroslavice (South Moravia).

Description (**holotype**) (measurements of paratypes in parentheses): Sexually mature cestode 4.784 (3.784—4.784) mm long and 0.352 (0.196—0.416) mm in maximum width. Scolex oval, measuring 0.140×0.164 (0.108×0.168) mm. Rostellum thin, 0.059 (0.028 to 0.070) mm wide at base and 0.170 (0.161—0.238) mm long. Rostellar sheath sac-like and not overlapping posterior margin of suckers. Suckers oval, well developed and measuring 0.108—0.122×0.084 (0.084—0.125×0.049—0.084) mm. Two rows of 0.0050 to 0.0052 mm long hooks of aploparaksoid type at the periphery of suckers, each row consisting of 28—31 hooks. No hooks were found at the bottom of suckers in any specimen. Rostellum bearing a crown of 10 hooks of diorchid type, 0.037—0.038 mm long. Blade of hooks 0.016 mm long.

The proglottids of strobila are of craspedont type. Those containing mature male gonads measure 0.038×0.214 (0.025—0.042×0.196—0.300) mm, the size of hermaphroditic proglottids is 0.072×0.344 (0.059—0.084×0.300—0.400) mm. The last proglottids in the strobila are occupied by the uterus with eggs and measure 0.124×0.386 (0.092 to 0.159×0.360—0.416) mm.

The genital pores open always on one side of proglottids. The gonads of the male are formed and develop sooner than those of the female. Three oval testes are situated in the centre of the proglottid, the middle one being shifted towards the basal part of the proglottis. The testes measure 0.040—0.052×0.039—0.058 (0.035—0.052×0.038 to 0.056) mm. The sac-like cirrus bursa lies dorsally and measures 0.167 (0.150—0.210) mm in length and 0.035 (0.035—0.045) mm in width. It does not extend behind the median line of proglottids. The external seminal vesicle is oval to spherical, lies approximately in the centre of the proglottid and measures 0.021×0.035 (0.017—0.021×0.024 to 0.045) mm. The fully evaginated cirrus is 0.021 (0.017—0.024) mm long and 0.007 mm

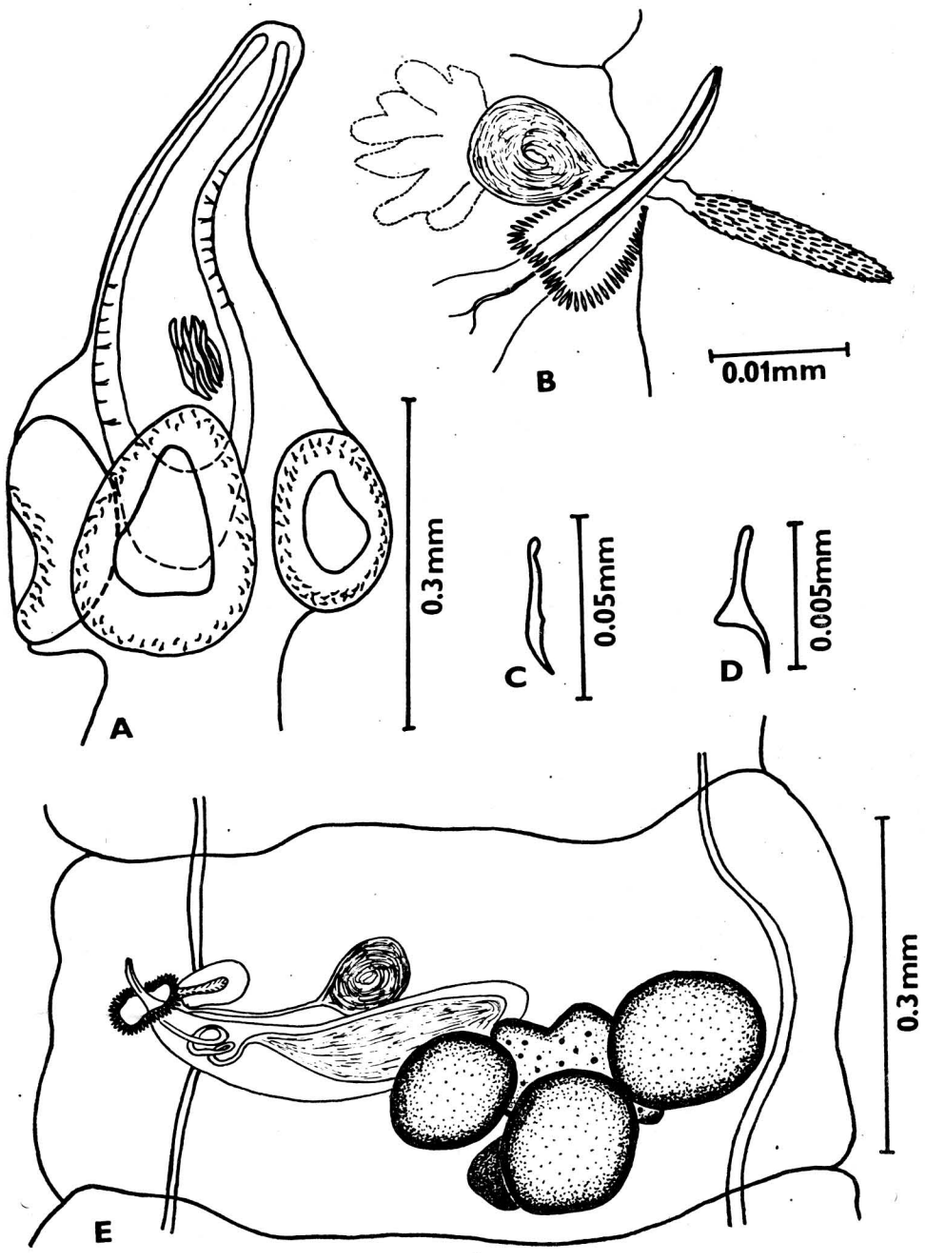

Fig. 1. *Echinocotyle vojteki* sp.n. A — scolex, B — genital atrium, C — rostellar hook, D — sucker hook, E — hermaphroditic proglottid.

wide at the base. It is smooth, without spines, distinctly tapering at the end. The external accessory sac opens into genital atrium and measures 0.024×0.028 (0.024×0.035) mm. When evaginated it forms a cirrus-like organ measuring 0.021—0.028 (0.021—0.031) mm in length and 0.0035 mm in width at the base. Its smooth basal part gradually widens and passes to the terminal part covered with fine spines and measuring 0.017 (0.017 to 0.021) mm. The openings of both cirrus bursa and external accessory sac are always smooth and without spines.

The male gonads are situated between the poral and middle testis. The ovary is oval, often slightly lobate, and measures 0.058×0.161 (0.052—0.063×0.098—0.191) mm. The vitellarium is compact, oval, rarely spherical, and measures 0.042×0.049 (0.035 to 0.052×0.042—0.056) mm. It lies ventrally to the ovary. The last proglottids of strobila, usually three to five, are filled with a sac-like uterus. The eggs are smooth, spherical, and measure 0.017 (0.014—0.017) mm.

Discussion: With some exceptions, the cestodes of the genus *Echinocotyle* are parasites of birds of the order Charadriiformes, rarely Anseriformes, Podicipediformes and Lariformes (Deblock 1964, Deblock and Rosé 1962). Among the hitherto described species of this genus only *E. multiglandularis* (Baczynska, 1914) recorded from *Larus minutus* Pall., *L. genei* Breme, *L. fuscus* L., *L. cirrocephalus* Vieill. and *Chlidonias nigra* L. in Europe, Asia and Africa can be regarded as a specific parasite of hosts of the family Laridae. In addition to this species, Korpaczewska (1959) recorded adult specimens of *E. druzniensis* Jarecka, 1958 in *L. ridibundus* L. in Poland and Deblock et al. (1960) found *E. octa canthoides* Cohn, 1901 in *L. ridibundus* L. and *E. verschureni* Baer, 1959 in *Gelochelidon nilotica* Gmel. and *Chlidonias hybrida* Pall. Although these species have been recorded only in hosts of the family Laridae, they cannot be considered to be specific due to the low number of specimens examined. Other species of the genus *Echinocotyle*, namely *E. nitida* (Clerck, 1902, 1903), *E. rosseteri* Blanchard, 1891, *E. brachycephala* (Creplin, 1892), *E. longirostris* (Rud., 1819) and *E. dubininae* (Deblock et Rosé, 1962) parasitize particularly hosts of the orders Charadriiformes and Anseriformes and facultatively also gulls and terns (Spasskaya 1966, Smogorzhevskaya 1976). The distribution area of these cestodes covers particularly Europe and Asia and extends up to Africa and North America. For those the life cycles of which are known, Copepoda and Ostracoda have been reported as intermediate hosts and *Lymnaea* as reservoir hosts (Ryšavý 1964, Tolkacheva 1969). Two species of the genus *Echinocotyle* were recorded from hosts of the family Laridae in Czechoslovakia. Macko (1962) found *E. brachycephala* in *L. ridibundus* L. and recorded it under the name *E. oweni* (Moghe, 1933). The same author (Macko 1964) described a fragment of strobila of the species *E. verschureni* from *Hydroprogne tschegrava* (Lep.).

Differential diagnosis: *E. vojteki* sp.n. is described on the basis of morphological-anatomical characters differentiating it from all hitherto described species of the genus *Echinocotyle*, mainly type and size of rostellar hooks, number and localization of hooks on suckers, size of rostellar sheath, formation of external accessory sac and whole genital atrium. As it follows from the literary data, the new cestode species is most closely related to *E. longirostris* (Table 1). The two species resemble each other in their metrical characters, but these may be affected by a different fixation. They differ substantially in the following characters: The rostellar sheath in *E. vojteki* sp.n. never overlaps the posterior margin of suckers like in *E. longirostris*; the rostellar hooks in *E. vojteki* sp.n. are of diorchid type; there are only two rows of peripheral hooks on the suckers and the hooks at the bottom of suckers are lacking; the testes in proglottids are arranged in form of V (not in a row like in *E. longirostris*). The main differences, however, were found in the structure of genital organs and genital atrium. Compared to the redescription of *E. longirostris* after Kornyushin (1969), the cirrus of *E. vojteki* sp.n. is shorter.

Table 1. Comparison of selected measurements of *E. vojteki* sp. n. and *E. longirostris* (after Kornyushin 1969) (all measurements in mm)

		Echinocotyle vojteki sp.n.	*Echinocotyle longirostris*
Host		*Larus ridibundus* L.	*Philomachus pugnax* L. *Charadrius alexandrinus* L. *Calidris minuta* (Leisler)
Body length		3.784—4.784	1.57—4.2
Maximum body width		0.196—0.416	0.25—0.45
Scolex size		0.108 × 0.168	0.12—0.14
Suckers:	length	0.070—0.115	0.070—0.095
	width	0.049—0.070	0.050—0.065
Hooks on sucker		aploparaksoid, 2 rows, lacking on the bottom	aploparaksoid, 2 rows, present on the bottom
	length	0.0050—0.0052	0.007
Rostellar hooks:	length	0.037—0.038	0.035—0.037
	number	10	10
	shape	diorchid	nitidoid
Testes:	length	0.035—0.052	0.07—0.09
	width	0.038—0.056	0.04—0.05
		arranged in V-form	arranged in a row
Cirrus bursa length		0.150—0.210	0.16—0.30
Cirrus:	length	0.017—0.024	0.07
	width	0.007	0.004
External accessory sac:	length	0.024	0.05—0.06
	width	0.035	0.04—0.05
evaginated:	length	0.021—0.031	0.030—0.035
	width	0.0035	0.012—0.015
Genital atrium		without hooks	with hooks
Ovary:	length	0.052—0.063	—
	width	0.098—0.191	0.3
Vitellarium:	length	0.035—0.052	0.030—0.035
	width	0.042—0.056	0.040—0.050
Egg diameter		0.014—0.017	0.02—0.025

The evaginated external accessory sac resembles the cirrus, but it is longer and covered with fine spines and differs in the shape and size from the data reported by Kornyushin (1969) for *E. longirostris*. According to this author, the openings of the cirrus bursa and external accessory sac are encircled by a crown of hooks of aploparaksoid type. These hooks have not been found in any of the studied specimens of *E. vojteki* sp.n. There was only a crown of lanceolate, refractile cells, the presence of which was described already by Macko (1962) in *E. brachycephala*.

The holotype and paratypes are deposited in the collections of the Department of Parasitology, Department of Animal and Man Biology, Faculty of Sciences, Purkyně University in Brno.

The new species was named in the honour of my teacher, Professor Dr. J. Vojtek, D.Sc., Head of the Department of Animal and Man Biology, Faculty of Sciences, Purkyně University in Brno.

ECHINOCOTYLE VOJTEKI SP. N. (CESTODA: HYMENOLEPIDIDAE), ПАРАЗИТ ОБЫКНОВЕННОЙ ЧАЙКИ (*LARUS RIDIBUNDUS* L.)

П. Коубек

Резюме. Описана новая цестода, *Echinocotyle vojteki* sp. n., из тонкой кишки обыкновенной чайки (*Larus ridibundus* L.). Вид отличается от описанных до сих пор видов рода *Echinocotyle* Blanchard, 1891 формой хоботковых крючков, числом крючков на присосках, длиной цирруса и структурой полового атриума.

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P. K., Ústav pro výzkum obratlovců ČSAV,
Květná ul. 8, 603 65 Brno,
ČSSR