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**SPINIGLANS SHARPILOI SP. N. (CESTODA, DILEPIDIDAE),
A PARASITE OF THE COMMON MAGPIE, *PICA PICA*,
IN THE PALAEARCTIC**

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Spiniglans sharpiloi sp. n. (Cestoda, Dilepididae), a Parasite of the Common Magpie, *Pica pica*, in the Palaearctic. Korniyushin V. V., Salamatin R. V., Greben O. B., Georgiev B. B. — *Spiniglans sharpiloi* Korniyushin, Salamatin, Greben et Georgiev sp. n., a specific parasite of the Common Magpie, *Pica pica*, is described on the basis of specimens collected in Ukraine, Bulgaria and Republic of Tuva (Russian Federation). It is distinguished from the related species *S. affinis*, *S. constricta* and *S. pirinica* on the basis of its smaller rostellar hooks, smaller number of testes and the particular shape of the cirrus sac. *Choanotaenia pirinica* Georgiev, Korniyushin et Genov, 1987, is transferred to the genus *Spiniglans* as *Spiniglans pirinica* comb. n.

Key words: Cestoda, Dilepididae, *Spiniglans sharpiloi* sp. n., *Pica pica*, Ukraine, Bulgaria, Russia, Tuva.

Spiniglans sharpiloi sp. n. (Cestoda, Dilepididae) — паразит сороки обыкновенной, *Pica pica*, Палеарктики. Корнюшин В. В., Саламатин Р. В., Гребень О. Б., Георгиев Б. Б. — Новый вид дилепидид *Spiniglans sharpiloi* Корнюшин, Саламатин, Гребень и Георгиев sp. n., специфичный паразит сороки обыкновенной (*Pica pica*) описывается по материалам, собранным в Украине, Болгарии и России (Тува). Новый вид дифференцируется от близких видов — *S. affinis*, *S. constricta* и *S. pirinica* — в частности, меньшими размерами хоботковых крючьев, меньшим количеством семенников в членике, а также размером и характерной формой бурсы цирруса. *Choanotaenia pirinica* Georgiev, Korniyushin et Genov, 1987 переводится в род *Spiniglans* и предлагается новая комбинация *Spiniglans pirinica* comb. n.

Ключевые слова: Cestoda, Dilepididae, *Spiniglans sharpiloi* sp. n., *Pica pica*, Украина, Болгария, Россия, Тува.

Introduction

The genus *Spiniglans* Yamaguti, 1959 was erected as monotypic (Yamaguti, 1959). Its type species, *S. microsoma* (Southwell, 1922) (= *Choanotaenia microsoma* Southwell, 1922), was originally described as a parasite of two birds kept in captivity in Calcutta Zoo, India (Yamaguti, 1959; Matevosyan, 1963): *Melophus melanicterus* (Gmelin), a synonym of *Melophus lathamii* (Gray) (Emberizidae) and *Ploceus atrigula* (Hodgs.), a synonym of *Ploceus heuglini* Reichenow (Ploceidae) (the bird synonymy is after AviBase, <http://avibase.bsc-eoc.org/> accessed on 28 December 2009). The generic concepts for the dilepidid cestodes were revised by Bona (1994). He retained in the genus *Choanotaenia* Railliet, 1896, only the species with a single crown of rostellar hooks, mostly parasitic in galliform birds. The species from passeriform birds, which have previously been classified in *Choanotaenia* (see, e. g., Spasskaya, Spasskii, 1977) or *Pseudanomotaenia* Matevosyan, 1963 (see Matevosyan, 1963) and are characterised by a tuft of atrial (and/or cirral) bristle-like spines and a double crown of rostellar hooks, were transferred to the genus *Spiniglans* (see Bona, 1994). These were *S. constricta* (Molin, 1858) Bona, 1994, a parasite of a wide range of passeriform birds (mostly Corvidae), and *S. corvi* (Joyeux, Baer et Martin, 1937) Bona, 1994, a parasite of *Corvus rhipidurus* Hartert in North Somalia (Joyeux et al., 1937). Subsequently, Salamatin (1999) analysed cestode materials from

corvid birds from Ukraine and validated *Spiniglans affinis* (Krabbe, 1869) Salamatin, 1999, a species originally described from *Corvus frugilegus* from Bavaria (Krabbe, 1869); previous authors (Matevosyan, 1963; Spasskaya & Spasskii, 1977) listed *Taenia affinis* Krabbe, 1869 among the synonyms of *Pseudanomotaenia constricta* or *Choanotaenia constricta*. Thus, the current species composition of the genus *Spiniglans* includes 4 species, 3 of them parasitic (exclusively or predominantly) in birds of the family Corvidae in the Old World.

Our previous studies demonstrated that the name *Spiniglans constricta* or its synonymous combinations *Taenia constricta*, *Anomotaenia constricta*, *Pseudanomotaenia constricta*, *Icterotaenia constricta* and *Choanotaenia constricta* were used for a complex of closely-related but morphologically-distinct species; on this basis, the description of *Choanotaenia pirinica* Georgiev, Korniyushin et Genov, 1987 and the redescription and validation of *S. affinis* were proposed (Georgiev et al., 1987; Salamatin, 1999). In the present article, we describe another morphologically distinct species of the same complex, *Spiniglans sharpiloi* sp. n., which appears to be a specific parasite of the Common Magpie, *Pica pica* (L.), throughout Northern Eurasia. In addition, we transfer *Choanotaenia pirinica* Georgiev, Korniyushin et Genov, 1987, to the genus *Spiniglans* and discuss the possibility to reveal further new species of the same group on the basis of revision of museum specimens.

Material and methods

The present study was based on cestode specimens collected from the small intestine of common magpies from various regions of Ukraine: Tatariv Village, Nadvirna Raion, Ivano-Frankivsk Oblast; the city of Kyiv; the town of Nizhyn, Chernihiv Oblast; the village of Yaduty, Borzna Raion, Chernihiv Oblast; Askania-Nova Biosphere Reserve and Chornomorskiy Biosphere Reserve, Kherson Oblast; Donetsk Oblast (the exact locality was not indicated). All these specimens are deposited in the helminthological collection of the I. I. Schmalhausen Institute of Zoology (Kyiv). We also studied 4 cestode specimens from *Pica pica* from the collection of Dr. Anastasia Paspaleva collected from the vicinities of the town of Belogradchik, Vidin Region, Bulgaria and identified by Paspalev and Paspaleva (1972) as *Anomotaenia constricta*; these specimens are currently deposited in the helminthological collection of the Central Laboratory of General Ecology, Bulgarian Academy of Sciences, Sofia.

The specimens from Tuva (collected by V. P. Sharpilo) were stained in lactic carmine (without prior fixation). The specimens from Bulgaria from the collection of Dr A. Paspaleva were stained in alum carmine. The specimens from Ukraine were fixed and preserved in 70% ethanol, stained in iron acetocarmine (Georgiev et al., 1986), dehydrated in ascending alcohol series, cleared in clove oil and mounted in Canada balsam. The scolex of the paratype specimen was mounted in Berlese's medium.

Metrical data are given in micrometers except where otherwise stated.

Results

Spiniglans sharpiloi Korniyushin, Salamatin, Greben et Georgiev, sp. n.

Type host: *Pica pica* (Aves, Passeriformes, Corvidae).

Other hosts: none.

Site: small intestine.

Type locality: Tatariv Village (former Kremetsi), Yaremche Municipality, Nadvirna Raion, Ivano-Frankivsk Oblast, Ukraine; 48°20'33" N, 24°34'32" E; *Collector:* V. V. Korniyushin, 20 June 1984.

Intensity of infection: 2 specimens.

Type material: Holotype (CH 31) and one paratype (CP 31.1), deposited in the helminthological collection of the I. I. Schmalhausen Institute of Zoology, National Academy of Sciences of Ukraine (Kyiv).

Etymology: The new species is named after the outstanding Ukrainian parasitologist Professor Viktor Petrovich Sharpilo (1933–2005), one of the world's leading experts in systematics and biology of helminth parasites of terrestrial poikilotherm animals.

Description of the type specimens (fig. 1)

The measurements of the holotype are followed by the measurements of the paratype in parentheses.

Pregravid specimen 46 (37.5) mm long, consisting of 130 (105) proglottides; maximum width at proglottides with young uterus, 0.85 (0.90) mm. Scolex slightly dorso-

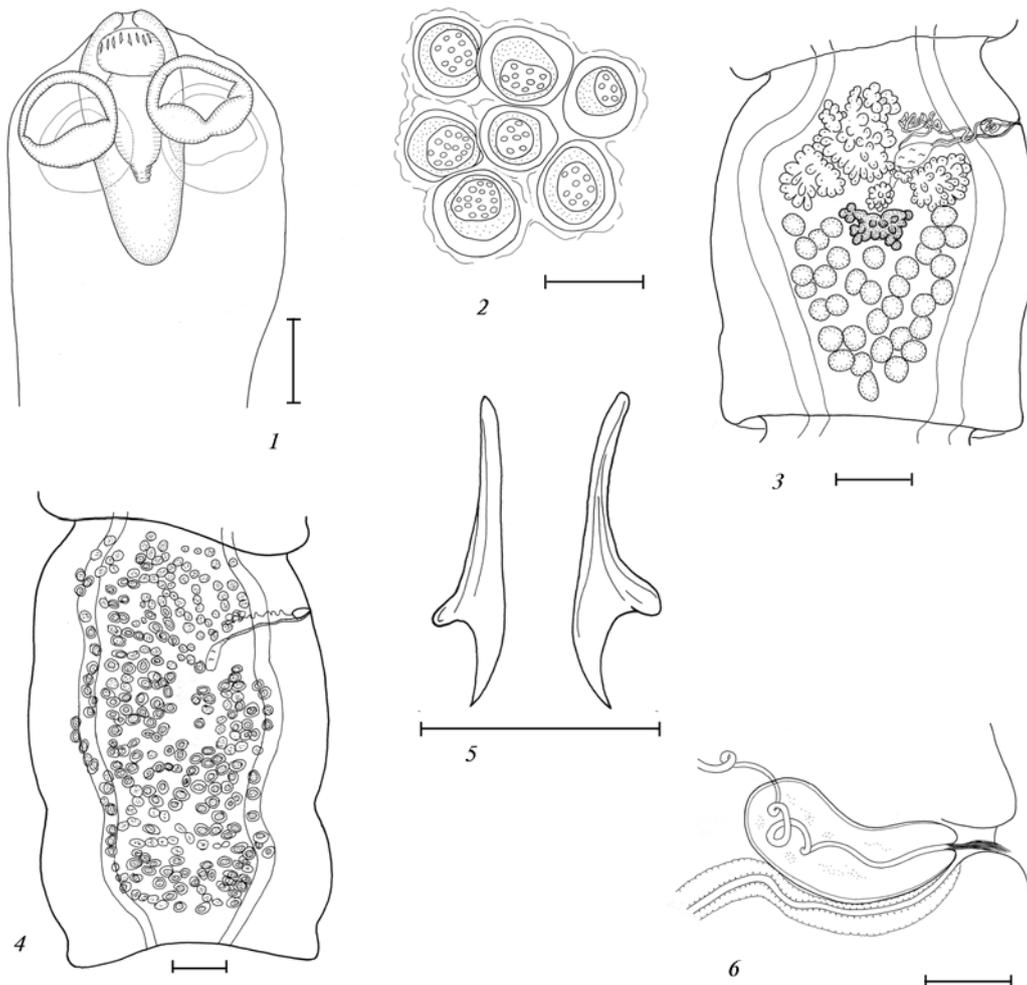


Рис. 1 *Spiniglans sharpiloi* sp. n., голотип (1–4) и паратип (5–6): 1 — сколекс, масштабная линейка 100 мкм; 2 — фрагмент матки с яйцами, масштабная линейка 50 мкм; 3 — гермафродитный членик, масштабная линейка 200 мкм; 4 — маточный членик, масштабная линейка 200 мкм; 5 — хоботковые крючья, масштабная линейка 25 мкм; 6 — копуляционный аппарат, масштабная линейка 5 мкм.

Fig. 1. *Spiniglans sharpiloi* sp. n., holotype (1–4) and paratype (5–6): 1 — scolex, scale bar 100 μ m; 2 — detail of pregravid uterus with unripe eggs, scale bar 50 μ m; 3 — mature proglottis, scale bar 200 μ m; 4 — pregravid proglottis, scale bar 200 μ m; 5 — rostellar hooks, scale bar 25 μ m; 6 — terminal genital ducts, scale bar 5 μ m.

ventrally flattened, relaxed, with maximum width of 340 (400) at the level of suckers; its apical part forming well-expressed conical protrusion. Suckers rounded, deep, projecting above surface of scolex, 130–140 in diameter. Rostellum withdrawn, relatively large, mushroom-shaped, 180 long, with diameter of apical part 80 and diameter of stalk 75. Rostellar hooks 20 in number (in the holotype 2 hooks lost and 18 hooks preserved on rostellum); anterior hooks with length exceeding 33, posterior hooks with length exceeding 30 (rostellar hooks of holotype do not situated in same optical plane); anterior and posterior hooks of paratype 35–37 and 32–34, respectively. Rostellar pouch elongate, 320 long and 140 wide, extending far beyond posterior end of suckers; thin-walled, containing well-developed glandular tissue. Scolex tapering in posterior direction and gradually passing into neck. Neck about 270 long, with diameter in its anterior part 130. Length of scolex together with neck c. 1 mm.

Proglottides craspedote, with campanulate shape. Young proglottides wider than long; about 90th proglottis, mature proglottides becoming longer than wide, from 600 □ 650 to 800 □ 1,050. Uterine proglottides considerably longer than wide, up to 850 □ 1,870. Primordia of genital organs distinct at about 40th proglottis, testes distinct at about 60th proglottis. Genital ducts passing between osmoregulatory canals. Genital pores irregularly alternating. Genital atrium simple, tubular, up to 40 deep, provided with tuft of fine bristle-like spines attached at the base of the cirrus.

Testes occupying posterior two thirds of median field, 31–45 (32–45) in number, situated in 2–3 layers; maximum diameter of developed testes 65–75 (70–80). Vas deferens forming several coils in anterior poral corner of median field. Cirrus sac small, relatively wide, 80–115 (100–155) long and 40–50 (40–45) wide, arcuate, entirely situated in poral lateral field.

Vagina opening posteriorly to orifice of cirrus sac and passing posteriorly to cirrus sac; copulatory part of vagina considerably longer than cirrus sac, 200–300 long and up to 17 wide, with thick wall; conductive part of vagina short, very narrow. Seminal receptacle fusiform or drop-like, up to 100 □ 50, situated entirely in median field. Ovary two-winged, antiporal wing considerably larger than poral wing; when fully developed, ovary consisting of numerous small lobes (more distinct in its antiporal wing), 500 (400–500) wide, occupying all anterior part of median field. Vitellarium central, lobed, transversely elongate, with irregular shape, when fully developed 130–180 (180–240) wide; consisting of large spherical lobes. Mehlis' gland distinct, anterior to vitellarium.

Uterus initially distinct as fine reticular structure at place of degenerating ovary; later, uterine reticulum also visible among vestigial testes. Uterine tubes narrow, developing eggs situated one-by-one in rows. In more developed proglottides, developing eggs more densely situated and uterine walls are frequently not distinct. Diameter of unripe eggs c. 55.

Observations on additional specimens

Specimens from Ukrainian Polissya (vicinities of Kyiv and from Chernihiv Oblast, collector O. B. Greben; fig. 2). Gravid specimen 121 mm long, with maximum width of 2.0 mm at gravid proglottides. Scolex 530 wide at level of posterior margins of suckers. Suckers oval, 130–150 □ 180–210, with strong muscular walls. Rostellar pouch with weak musculature of walls, 350 long and 220 wide, slightly passing beyond posterior margin of suckers. Rostellum relatively large, mushroom-shaped, muscular, 200 long, with diameter of apical part 110 and diameter of stalk 90. Rostellar hooks in two rows, 20 in number; anterior and posterior hooks of almost same length. Anterior hooks 37–38 long, posterior hooks 35–36 long. Handle long and slightly curved, 23–25 long; blade sharp, 10–13 long; guard well-developed. Scolex not clearly outlined from neck. Neck 390 wide. Genital pores irregularly alternating, situated in anterior half of lateral proglottis margin. Genital atrium provided with tuft of fine bristle-like spines. Proglottides craspedote, with well-developed velum. Primordia of internal organs distinct in 38th proglottis. Testes well-developed in 77th proglottis. First mature proglottides 290–320 long and 610–690 wide. Ventral osmoregulatory canals 30–40 wide, dorsal osmoregulatory canals 10–15 wide.

Testes 34–44 (av. 40) in number, situated in posterior two thirds of median field in two, sometimes in three layers; rounded, with diameter varying between 40 and 100 depending on degree of their development, reaching maximum size in mature proglottides; testes degenerating with uterine development. Cirrus sac small, thin-walled, 90–110 long and 40–50 wide, slightly curved, not reaching poral osmoregulatory canals. Vas deferens 7–8 in diameter, forming a few coils within cirrus sac and numerous coils near anterior proglottis margin, mostly in its poral corner.

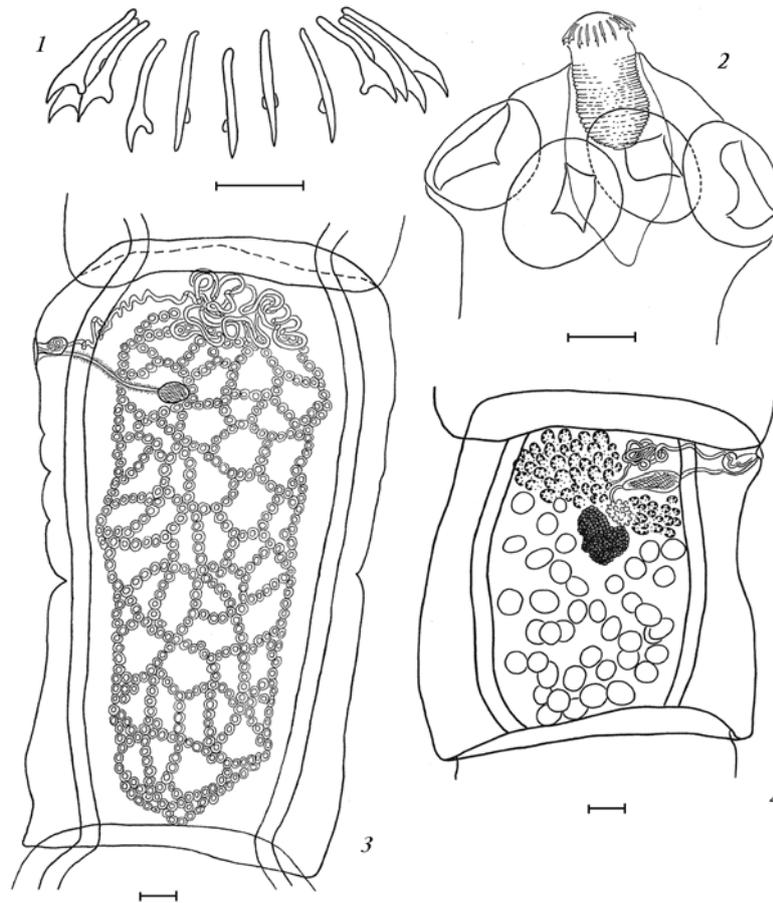


Рис. 2. *Spiniglans sharpiloi* sp. n., дополнительный материал: 1 — корона крючков, масштабная линейка 25 мкм; 2 — сколекс, масштабная линейка 100 мкм; 3 — маточный членик, масштабная линейка 100 мкм; 4 — гермафродитный членик, масштабная линейка 100 мкм.

Fig. 2. *Spiniglans sharpiloi* sp. n., additional material from Ukrainian Polissya: 1 — crown of rostellar hooks, scale bar 25 μ m; 2 — scolex with protruded rostellum; scale bar 100 μ m; 3 — gravid proglottis, scale bar 100 μ m; 4 — mature proglottis, scale bar 100 μ m.

Vagina opening posterior to male orifice by thin-walled infundibular structure with diameter 23. Copulatory part with tubular lumen with diameter 10–15, along entire its length surrounded by thick glandular sleeve. Seminal receptacle pear-shaped, with measurements varying between 145 \square 60 and 190 \square 100; seminal receptacle persistent in proglottides with developing uterus. Vitellarium medial, lobed, with irregular shape, often heart-like, 130–180 wide. Ovary lobed, up to 580 wide, situated in anterior part of median field; its antiporal wing considerably larger than poral wing. Uterus reticular, occupying almost entire proglottis. In about 130th proglottis, testes entirely degenerated; in addition to uterus, only cirrus sac, vagina and seminal receptacle persisting in gravid proglottides.

Eggs spherical or slightly oval, with measurements 45–50 \square 60–65 (in stained whole-mounts). Embryophore 30–45 \square 33–35. Embryonic hooks 18–20 long.

Specimens from Bulgaria (vicinities of Belogradchik). Metrical data are presented in Table 1. Morphological characteristics are similar to the above-described specimens from Ukraine. Some additional data are as follows: Longest specimen (111 mm) consisting of 153 proglottides (89 juvenile and premature), 36 mature, 22 postmature and pregravid and 6 gravid). Maximum width at pregravid proglottides.

Rostellar sac extending far posterior beyond posterior margin of suckers. Rostellar hooks 20 (in two specimens) or 22 (in one specimen) in number. Genital pores situated at border of anterior 1/4–1/6 of lateral proglottis margin; irregularly alternating in short series (e. g., ...2, 1, 1, 2, 2, 2, 4, 1, 1, 1, 2, 1...). Length of tuft of bristles (surrounding cirrus base in genital atrium) 22–28. Genital ducts between osmoregulatory canals. Seminal receptacle 169–238 × 88–106, elliptical. Initial stage of uterine development reticular. With further development, uterus occupying median field and parts of lateral fields of proglottis, preserving its reticular appearance in pregravid proglottides. Embryonic hooks: median pair 20–22 long, lateral pairs 18–20 long.

Metrical data of the specimens from the Republic of Tuva (Russian Federation) are presented in Table 1.

Differential diagnosis. *S. sharpiloi* sp. n. resembles three other species of the genus *Spiniglans* Yamaguti, 1959 occurring in the Palaearctic birds of the family

Таблица 1. Сравнительная таблица морфологических признаков некоторых видов рода *Spiniglans*, морфологически близких *S. sharpiloi* sp. n.

Table 1. Comparison of metrical and meristic data of *Spiniglans sharpiloi* sp. n. and two related species

Metrical and meristic data, mm	<i>Spiniglans sharpiloi</i> sp. n. Host <i>Pica pica</i>				<i>Spiniglans</i> <i>affinis</i> Host <i>Corvus</i> <i>frugilegus</i>	<i>Spiniglans</i> <i>constricta</i> Host <i>Corvus</i> <i>cornix</i>
	Ukraine	Ukraine	Tuva (Russian Federation)	Bulgaria	Ukraine	Ukraine
	Present study (type series, measurements of the paratype in paren- theses)	Present study (additional material)	Present study	Present study	Salamatin (1999)	Salamatin (1999)
Body:						
length	46 (37.5)	121	34	52–111	75	69
width	0.85 (0.90)	2.00	1.40	1.09–1.79	1.6	1.9
Scolex: diameter	340 (400)	530	340	276–375	550	330
Rostellum:						
length	180	200	180	188–194	350	200
width	75	110	100	78–83	120	120
Rostellar pouch:						
length	320	350	–	301–313	420	250
width	140	220	–	112–120	200	134
Suckers: diameter	130–140	130–210	–	135–145	150	120
Rostellar hooks:						
number	20 (20)	20	–	20–22	22	20
length, anterior hooks	c. 33 (35–37)	37–38	35–36	31–35	55–58	40–41
length, posterior hooks	c. 30 (32–34)	35–36	33–34	28–32	50–55	36–37
Testes: number	31–45 (32–45)	34–44	33–40	34–44	78–86	38–49
Cirrus sac:						
length	80–115 (100–115)	90–110	80–100	102–131	75–100	60–80
width	40–50 (40–50)	40–50	30–40	35–45	25–30	30–35
Vagina: diameter	18–20 (17–18)	10–23	13–15	12–18	12	10
Eggs: diameter	55	45–50	–	50–58	30	20–22 (unripe)
Oncosphere: diameter	–	30–45	–	37–45	–	–
Embryonic hooks: length	–	18–20	–	18–22	–	–

Corvidae: *S. constricta* (Molin, 1858) Bona, 1994, *S. affinis* (Krabbe, 1869) Salamatin, 1999 and *S. pirinica* (Georgiev, Korniyushin et Genov, 1987) comb. n.

S. affinis is a widespread parasite of the Rook, *Corvus frugilegus* L. (Salamatin, 1999). Its rostellar hooks are considerably longer (anterior 55–58, posterior 50–55) than those of the new species. There is also a substantial difference in the number of testes, which are about twice more numerous in *S. affinis* (table 1). Additional differentiating characters are the shape and size of the cirrus sac, which is smaller, narrower and more elongate in *S. affinis* (table 1).

S. pirinica is a parasite of the Alpine Chough, *Pyrrhocorax graculus* (L.), known from Pirin Mts. (Bulgaria) only (Georgiev et al., 1987). It can be distinguished from the new species by its considerably longer rostellar hooks (anterior 67–73, posterior 61–68), bigger rostellum (262–368 long) and bigger rostellar pouch (344–456 \square 144–206) extending in posterior direction far beyond posterior margin of suckers even when rostellum is protruded (Georgiev et al., 1987).

The size of the rostellar hooks of *S. sharpiloi* sp. n. is closer to that of *S. constricta* (40–41 and 36–37 for anterior and posterior hooks, respectively; see Salamatin, 1999). Nevertheless, the hooks of *S. sharpiloi* consistently do not reach 40 μ m in length. Significant differences between the two species are associated with the peculiarities of the cirrus sac. In *S. constricta*, the cirrus sac is short and oval (60–80 \square 30–35) while it is bigger (80–115 \square 35–50) and with a characteristic curved appearance in the new species (in this comparison, we do not take in view the metrical data of the material from Tuva because it has been stained with lactic carmine without prior fixation that may result in smaller dimensions of some internal organs, including the cirrus sac). Additional metrical differences are associated with the size of the rostellar pouch and the suckers (table 1).

Two briefly described dilepidid species from Palaearctic corvids require a re-examination in order to specify their generic allocation in agreement with the current classification of the family Dilepididae (Bona, 1994). *Icterotaenia monedulae* Spasskaya & Spasskii, 1971, was described from the Daurian Jackdaw, *Corvus dauuricus* Pallas (= *Coloeus monedula dauuricus*), from the Republic of Tuva (Russian Federation); this species is characterised with very short rostellar hooks, 19–20 μ m long; highly elongate cirrus sac reaching in antiporal direction almost to the middle of proglottis and small number of testes (14–16) (Spasskaya & Spasskii, 1971, 1977); therefore, it is clearly distinct from *S. sharpiloi*. *Anomotaenia arkita* Matevosyan, 1950 [= *Pseudanomotaenia arkita* (Matevosyan, 1950) Matevosyan, 1963; *Choanotaenia arkita* (Matevosyan, 1950) Spasskaya et Spasskii, 1977] from *Corvus corone orientalis* Eversmann from Kyrgyzstan, though having rostellar hooks of similar length (36 and 27 μ m, see Matevosyan, 1963), differs by the morphology of its mature proglottides. This species has been described with considerably smaller number of testes, c. 30 (Matevosyan, 1963) or 16–25 (Spasskaya et Spasskii, 1977). Its cirrus sac is elongate and narrow, 100–129 \square 17–20 (Spasskaya et Spasskii, 1977) or 80 \square 27 (Matevosyan, 1963), reaching poral osmoregulatory canals and part of it is situated in the median field of the proglottis.

On the basis of these comparisons, we conclude that a proposal of a new species is justified for cestodes of the genus *Spiniglans* parasitising the Common Magpie, *Pica pica*, in Northern Eurasia (Bulgaria, Ukraine and Tuva).

Discussion

Spiniglans constricta has been considered for long time a widespread parasite of passerine birds, mostly of those of the family Corvidae, throughout Eurasia; as members of its host range, avian species of the genera *Corvus*, *Coloeus*, *Pica*, *Nucifraga* (Corvidae), *Turdus* (Turdidae), *Sturnus* (Sturnidae), *Acrocephalus* and

Phylloscopus (Sylviidae) have been reported (for survey, see Spasskaya & Spasskii, 1977). Matevosyan (1963) presented morphological data for this species summarising observations of various authors, thus creating an impression for tremendous variation of its morphological characters. E. g., the number of rostellar hooks varies between 16 and 24 and their length ranges 29–60 (anterior) and 27–57 (posterior); the size of the cirrus sac is 70–165 \times 23–56. Since such wide variation is not known for any of the well-studied dilepidid cestode species, there is no doubt that *S. constricta* in the concept of Matevosyan (1963) is a heterogeneous group consisting of several species (Georgiev et al., 1987; Salamatin, 1999).

Mettrick (1958) emphasised the morphological differences of the specimens identified as *S. constricta* from England and originating from various host species. For cestodes from *Corvus frugilegus*, he reported rostellar hooks 50–56 and 45–50 long and cirrus sac measuring 80–120 \times 42–56 while those from *C. monedula* had hooks 35–43 and 31–38 long and cirrus sac 70–90 \times 36–50. He also reported the variation of cestode samples from three species of thrushes and from the common starling; however, in view of the present knowledge on the host specificity of dilepidids from passerine birds, the materials of the latter four host species probably belong to another genus, perhaps to *Sobolevitaenia* Spasskaya & Makarenko, 1965. Though the detailed analysis presented by Mettrick (1958), there were no studies during the following 25 years analysing the composite character of the species complex of *S. constricta*.

Georgiev et al. (1987) studied cestode specimens from the Alpine Chough, *Pyrrhocorax graculus*, from Pirin Mts., Bulgaria, which resembled *S. constricta* by the number and shape of rostellar hooks, the morphology of mature proglottides, the shape and size of the cirrus sac, the presence of bundle of bristle-like spines in the terminal male genital ducts and the reticular uterus. However, these specimens had longer rostellar hooks and bigger rostellum than those reported by previous authors for *S. constricta*, which justified their separation as a distinct species, *Choanotaenia pirinica*. On the basis of the numerous similarities between *S. constricta* and *C. pirinica* and the correspondence of the morphology of the latter species to the current generic diagnosis of *Spiniglans* (see Bona, 1994), we transfer it to the genus *Spiniglans* as *S. pirinica* (Georgiev, Korniyushin et al., 1987) comb. n.

Salamatin (1999) also recognised the heterogeneous character of *S. constricta* (*sensu lato*). On the basis of the examination of variations of rostellar hooks, cirrus sac and numbers of testes, he validated *Spiniglans affinis* (Krabbe, 1869) described from the Rook, *Corvus frugilegus*, reserving the name *Spiniglans constricta* for cestodes from the Hooded Crow, *Corvus cornix* L.

In previous studies on the regional cestode faunae, the present authors recognised the particular morphological characters of the specimens described here as *Spiniglans sharpiloi* sp. n. and separated them from *S. constricta* (*sensu lato*). Thus, the above-described individuals from Bulgaria were preliminarily identified as “*Choanotaenia* sp.” (Georgiev, 1990) and those from Ukraine as “*Spiniglans* sp.” (Salamatin, 1999, 2000; Greben, 2008). The present comparison of these materials and the samples from Tuva demonstrates that cestodes of the genus *Spiniglans* from common magpies consistently exhibit similar morphological characters, which distinguish them from the species of *Spiniglans* occurring in *Corvus* spp.

We suppose that *S. sharpiloi* has a wider geographical range than currently known. Cestodes from magpies were identified as *Spiniglans constricta* in Poland, Slovakia and Czech Republic (Czapliński et al., 1992; Ryšavý & Sitko, 1995; Hanzelová & Ryšavý, 1999). Therefore, revision of the museum specimens from these countries is needed. Furthermore, it can be expected that the number of the species of *Spiniglans* will further increase, especially with the examination of cestode specimens from the remaining three European bird species, which have been reported as hosts of *S. constricta*

(*sensu lato*), i. e. the Common Raven (*Corvus corax* L.), the Eurasian Jackdaw (*C. monedula* L.) and the Carrion Crow (*C. corone* L.). We have no specimens of *Spiniglans* from these host species for the purposes of the present study. Furthermore, the species diversity of the family Corvidae is greater in tropical areas than in Northern Eurasia and the exploration of their parasite diversity is a challenge for future research.

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