

Description of *Skrjabinodon alcaraziensis* sp. n. (Nematoda: Pharyngodonidae), a parasite of *Algyroides marchi* (Sauria: Lacertidae)

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Abstract. *Skrjabinodon alcaraziensis* sp. n. (Nematoda: Pharyngodonidae) is described from the cloaca of *Algyroides marchi* Valverde, 1958 (Sauria: Lacertidae) from the Alcaraz Mountains (SE Iberian Peninsula). This nematode is characterized by the presence of an unpaired postcloacal papilla in the males, the presence of cuticular spines in the tail of the female and the absence of polar plugs in the eggs.

Algyroides marchi Valverde, 1958 is a small endemic lizard living exclusively in the Alcaraz and Cazorla Mountains (SE Iberian Peninsula) (Valverde 1958), being one of the four known species of the European genus *Algyroides* Bibron et Bory, 1833, all with a restricted distribution (Arnold and Burton 1978). The helminths parasitizing this reptile have not been studied prior to 1992 (see Lluch et al. 1987), when Lafuente et al. (1992) made a preliminary study in which they only found three parasite species. A later search (Lafuente and Roca 1995) confirmed that the helminth community of *A. marchi* was formed by only three species. The description of one of them, the nematode *Skrjabinodon alcaraziensis* sp. n., is the subject of the present paper.

MATERIALS AND METHODS

A total of 104 specimens of *Algyroides marchi* were examined for helminths; 31 of them were caught in different parts of the Alcaraz Mountains and 73 were from the collection of the Museo Nacional de Ciencias Naturales, Madrid.

Live nematodes were washed in saline solution (0.9%), fixed in hot 70% ethanol, preserved in 70% ethanol, mounted on slides in lactophenol and studied under the microscope. A lot of specimens were studied but only those fixed in good extension were useful for measurements.

RESULTS

Skrjabinodon alcaraziensis sp. n. was found in 8 of the 104 examined lizards (prevalence 7.7%). In all, 38 individuals were found (21 adults and 17 larvae). The mean intensity was 4.75 (range 1-22) and the abundance 0.37.

Skrjabinodon alcaraziensis sp. n.

Fig. 1

Type-host: *Algyroides marchi* Valverde, 1958.

Localization: cloaca.

Type-locality: Sierra de Alcaraz (Albacete, Spain).

Material measured: 8 males and 7 gravid females (Table I). Type specimens deposited in The Natural History Museum, London (Reg. no. 1993.5116, male holotype and 1993.5117, female allotype) and Department of Animal Biology, University of Valencia (no. 910606009R).

Description: Small, off-white nematodes with cylindrical body and extremities tapered in both sexes. Cuticle with transverse striation. Mouth surrounded by 3 small lips; two amphids present (Fig. 1A). Lateral alae present only in males. All the measurements in micrometres.

Male (holotype). Body length 1,496; maximum width, excluding lateral alae, 116. Length of oesophagus (excluding bulb) 138; bulb 50 long, 50 wide. Excretory pore located at 384 from the cephalic extremity (Fig. 1E). Lateral alae begin at 64 from the cephalic extremity and extend posteriorly to 266 from posterior extremity, reaching maximum width of 8 (Fig. 1E). Anterior extremity of the testis 468 from cephalic end of body (Fig. 1E). Tail 180, smooth, conical, with long terminal spike, lacks caudal alae. Three pairs of sessile caudal papillae and one unpaired papilla (Fig. 1F): one pair pre-cloacal, one pair post-cloacal and the 3rd pair laying at base of terminal spike; unpaired sessile papilla located between post-cloacal pair (Fig. 1F). Spicule well sclerotised, slightly curved, 50 long (Fig. 1G). Gubernaculum apparent in some specimens.

Female (allotype). Length 6,000; maximum width 472. Length of oesophagus (excluding bulb) 308; bulb 104 long, 120 wide (Fig. 1B). Excretory pore located at 436

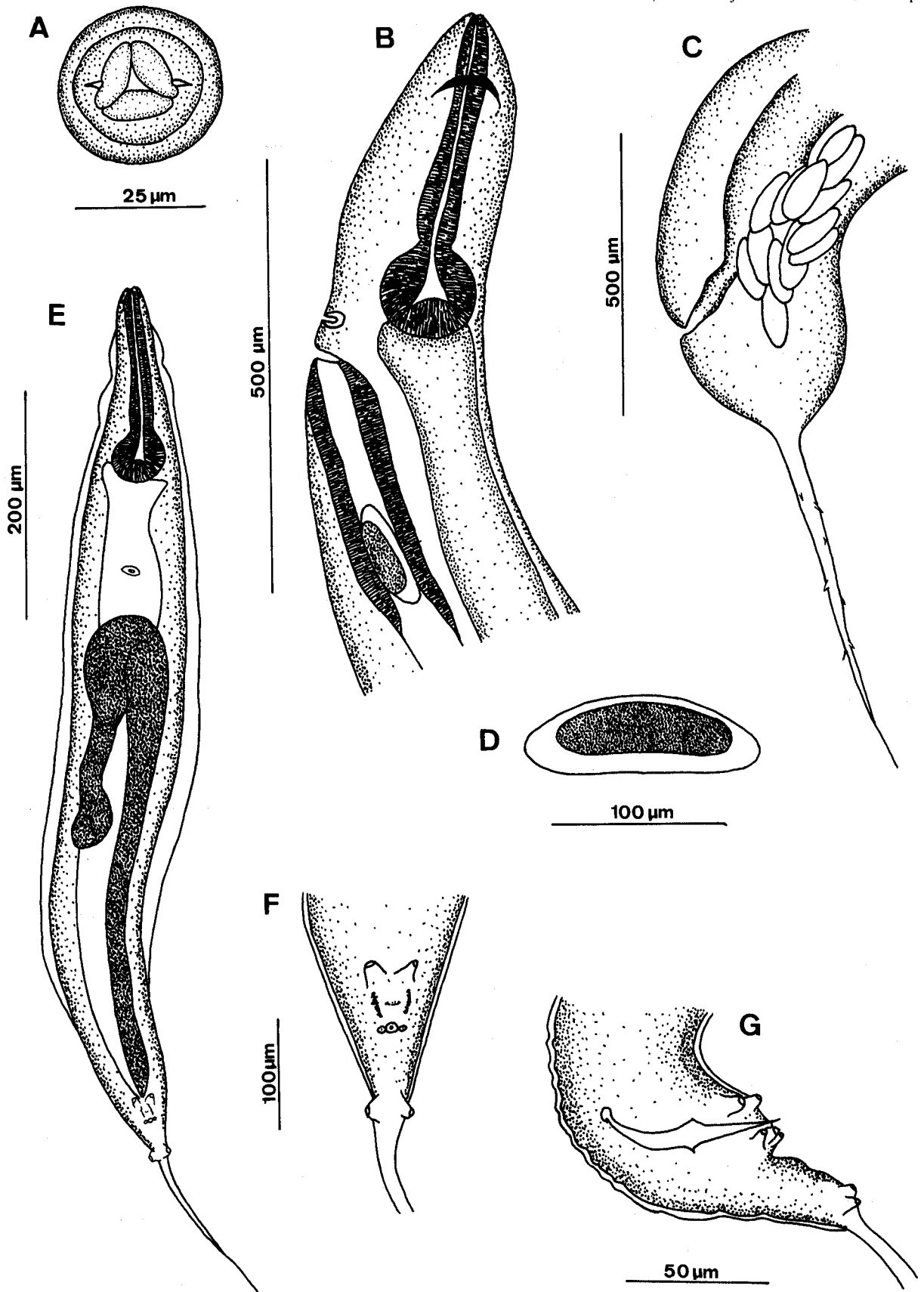


Fig. 1. *Skrjabinodon alcaraziensis* sp. n. A – apical end of female en face view; B – anterior extremity of female, lateral view; C – posterior extremity of female, lateral view; D – egg; E – entire body of male, ventral view; F – cloacal region of male, ventral view; G – posterior extremity of male, lateral view. Scales: A – 25 µm; B and C – 500 µm; D and F – 100 µm; E – 200 µm; G – 50 µm.

from cephalic extremity. Lateral alae absent. Vulva opens posterior to oesophageal bulb, just posterior to excretory pore, 476 from anterior extremity. Vagina muscular, directed posteriorly, 412 long (Fig. 1B). Ovaries lie posterior to vulva. Tail 660 long, filiform, armed with 9 cuticular spines (Fig. 1C). Eggs slightly asymmetrical (one side more flattened), 132 × 42 (Fig. 1D).

DISCUSSION

Several morphological characteristics noted by different authors (Skrjabin et al. 1960, Inglis 1968, Petter and Quentin 1976), as last pair of papillae not rosette-shaped and the absence of caudal alae in the male, indicate the inclusion of our specimens within the genus *Skrjabinodon* Inglis, 1968.

Baruš and Coy-Otero (1974) separated the species of *Skrjabinodon* in two groups according to the presence or absence of a spicule and listed the species with spicule (see also Roca 1985b). In addition, *S. mascomai* Roca, 1985, *S. canariensis* (Solera-Puertas, Zapatero-Ramos, Castaño-Fernández et Carrera-Morro, 1987), *S. aegyptiacus* (Moravec et Ryšavý, 1987), and *S. hemidactyli* Moravec et Baruš, 1990, should be included (see Moravec and Baruš 1990, Hornero and Roca 1992).

Five of the species mentioned by Baruš and Coy Otero (1974) differ from our specimens in the length of the spicule. The male of the present species has a spicule 48-56 (52) long, whereas in *S. capacyupanquii* (Freitas, Vicente et Ibáñez, 1968) it is 120-130 long, in *S. oedurae* (Johnston et Mawson, 1947) 110, in *S. mabuyae* (Sandground, 1936) 85-90, in *S. scelopori* (Caballero, 1938) 82 and in *S. cricosaurae* Baruš et Coy Otero, 1974, 37.

Among the remaining species, *S. parasmithi* Mawson, 1971 differs from the Iberian specimens in the great length of the tail of the female (1,200), the presence of cuticular spines on the tail of the male and by the geographical distribution. *S. parasmithi* being a species from the Flinders Islands off Australia (Mawson 1971). *S. schikhobalovi* (Annaev, 1973) differs in the size of the female tail and the size of the eggs, which are half as wide as those of our specimens and in its geographical distribution (Central Asia) (see Sharpilo 1976). *S. aegyptiacus*, of which only the males are known (Moravec et al. 1987), differs in the presence of a spacious buccal cavity, the length of the oesophagus, and the absence of an unpaired cloacal papilla. *S. hemidactyli* Moravec et Baruš, 1990 differs in the ratio between tail-body length (1:3 versus 1:8.9 in *S. alcaraziensis*), the presence of lateral alae in the female, the

Table 1. Measurements of males and females of *Skrjabinodon alcaraziensis* sp. n. All measurements in micrometres.

	males (n = 8)		females (n = 7)	
	min. - max.	mean	min. - max.	mean
Body length	812 - 1496	(1193)	5100 - 6240	(5900)
Body width	84 - 136	(108)	268 - 472	(347)
Tail length	130 - 236	(188)	600 - 720	(660)
Oesophagus length	114 - 140	(127)	280 - 316	(295)
Bulb length	40 - 70	(49)	96 - 104	(99)
Excretory pore to anterior end	212 - 384	(292)	392 - 544	(452)
Vulva to anterior end	-	-	416 - 576	(489)
Bulb width	40 - 84	(54)	112 - 124	(118)
Vagina length	-	-	356 - 476	(408)
Egg length	-	-	132 - 138	(134)
Egg width	-	-	42 - 48	(45)
Testis to anterior end	276 - 468	(393)	-	-
Spicule length	48 - 56	(52)	-	-
Anterior extremity to lateral alae	38 - 64	(49)	-	-
Posterior extremity to lateral alae	220 - 336	(276)	-	-
Lateral alae width	8 - 14	(10)	-	-
Number of tail spines	-	-	7 - 10	(8)

Table 2. Females. Comparative morphometry of *Skrjabinodon medinae* and *S. alcaraziensis* sp. n. All measurements in micrometres.

	<i>S. medinae</i>				<i>S. alcaraziensis</i>
	G. Calvente (1948)	Roca (1985a)	G. Adell (1987)	Hornero (1991)	own data
Body length	4000	4543	5910	4762	5900
Body width	–	274	480	393	347
Tail length	900	634	723	626	660
Oesophagus length	–	299	325	321	295
Bulb length	50	95	109	115	99
Bulb width	–	100	124	126	118
Excretory pore to anterior end	260	405	399	466	452
Vulva to anterior end	300	451	437	525	489

number of tail spines in the female (4 versus 8), the absence of unpaired cloacal papilla, and its geographical distribution (Moravec and Baruš 1990).

From the point of view of the geographical distribution, *S. canariensis*, *S. mascomai* and *S. medinae* (García Calvente, 1948) are the most closely related species to *S. alcaraziensis* sp. n. This new species differs from *S. canariensis* in that the females of *S. canariensis* are shorter and narrower and their eggs have polar plugs, and the males have, between the postcloacal papillae, an unpaired structure which is not a true papilla (Solera-Puertas et al. 1987). *S. mascomai* can be separated from the new species by the total length of the females (2,863-3,928 versus 6,000), the length of the

tail of the female (270-357 versus 660), the absence of cuticular spines on the tail, its operculate eggs, and the absence of an unpaired cloacal papilla in the male. The most closely related species from a morphometrical point of view is *S. medinae* (Tables 2 and 3). Both *S. medinae* and *S. alcaraziensis* sp. n. are so similar that the new species was named as *S. medinae* in a preliminary note (Lafuente et al. 1992). After a comprehensive study of the caudal region of the male, an important feature was found to differentiate these species. *S. alcaraziensis* sp. n. exhibits an unpaired papilla between the postcloacal pair and *S. medinae* possesses four pairs of cloacal papillae, including two pairs of postcloacal papillae (Hornero and Roca 1992).

Table 3. Males. Comparative morphometry of *Skrjabinodon medinae* and *S. alcaraziensis* sp. n. All measurements in micrometres.

	<i>S. medinae</i>				<i>S. alcaraziensis</i>
	G. Calvente (1948)	Roca (1985a)	G. Adell (1987)	Hornero (1991)	own data
Body length	1370	1156	1180	1224	1193
Body width	100	96	96	112	108
Tail length	205	194	208	200	188
Oesophagus length	205	148	139	173	127
Bulb length	50	47	45	53	49
Bulb width	–	47	47	56	54
Excretory pore to anterior end	425	308	285	338	292
Testis to anterior end	–	–	–	–	393
Spicule length	62	61	56	67	52
Anterior extremity to lateral alae	60	50	40	46	49
Posterior extremity to lateral alae	–	–	360	306	276
Lateral alae width	–	11	13	10	10

Consequently, we conclude that the described specimens belong to a new species for which we propose the name *Skrjabinodon alcaraziensis* sp. n. reflecting the type locality.

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