

Skrjabillanus cyprini n. sp. (Nematoda: Dracunculoidea) from the scales of common carp *Cyprinus carpio* (Pisces) from Hungary

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Abstract

A new species of the histozoic nematode, *Skrjabillanus cyprini* n. sp., is described from the subsquamal part of the scales of common carp *Cyprinus carpio* L. from Lake Balaton, Hungary. It differs from the other three congeneric species mainly in possessing an extremely small, oval-shaped buccal capsule with a large tooth at the bottom, in the shape of the cephalic end (somewhat bulbously inflated, truncated anteriorly), the extent of the oesophageal glands and body size (body length of male and female 1,800–3,000 μm and 3,200–4,100 μm , respectively). A key to the identification of *Skrjabillanus* spp. is provided.

Introduction

The genus *Skrjabillanus* Shigin & Shigina, 1958 includes very slender dracunculoid nematodes which are tissue parasites of freshwater fishes. The most frequent location of these parasites in the host is the serosal cover of various organs, such as the swimbladder, kidneys or gonads, but they are often found in the abdominal cavity, kidneys, urinary bladder, orbits and in the humour of the eye (Moravec, 1994). At present, the genus includes three species, all parasitising European cyprinids: *S. tincae* Shigin & Shigina, 1958 from tench *Tinca tinca* (L.), *S. scardinii* Molnár, 1966 from rudd *Scardinius erythrophthalmus* (L.) and *S. schigini* Tikhomirova & Rudometova, 1975 from grasscarp *Ctenopharyngodon idella* (Valenciennes).

Thorough examination of common carp *Cyprinus carpio* L. from Lake Balaton, Hungary, carried out recently by the first author of this paper, has revealed the presence of another, hitherto undescribed species of *Skrjabillanus*. In contrast to the known species of the genus, the nematodes belonging to the new species are much smaller and their site of infection is the host's scales. This new species is described below.

Materials and methods

Fourteen common carp of 3–6 years old and 30–60 cm in length were collected using of an electric device or seined by fishermen from Lake Balaton, Hungary, between May and November 1996. The fish were transported alive to the laboratory of the Veterinary Medical Research Institute in Budapest, where they were subsequently examined within a few days. The fish were de-scaled and the scales were placed into 0.65% saline in a Petri dish. The skin covering part of the inner surface of the scales was carefully removed and scrapings were checked for the presence of nematodes. After removing the scales, the fish were skinned and the skin was placed into a jar containing saline. In addition, the serous membranes were peeled off the abdominal organs and swimbladder, and were checked for the presence of moving nematodes. *Skrjabillanids* were collected from the scrapings of the scales under a dissecting microscope. The nematodes were first washed in physiological saline, then placed in a drop of saline on a microscope slide. A coverslip was placed over the drop of saline and its corners were fixed with Noyer's lacquer. A small drop of lactophenol was then added to the edge of the coverslip. The specimens, mounted in lactophenol in this way, were examined using an NFPK Zeiss microscope and drawings were made

with the help of a drawing attachment. The specimens have been deposited in the helminthological collection of the Institute of Parasitology, Academy of Sciences of the Czech Republic, in České Budějovice. All measurements are given in micrometres unless otherwise stated.

In addition to these examinations, fish lice *Argulus foliaceus* (L.) infecting the examined common carp specimens were collected and examined for nematode infection at a magnification of $\times 100$ – 400 in a compound microscope.

Results

Ten of the 14 common carp specimens proved to be infected with skrjabillanid nematodes. Infection was found during different seasons, from May to November. The intensity of infection ranged from 1 to 122 (mean 25.5). In most cases, nematodes were found in subsquamal locations between the cartilaginous plate of the scales and the epithelium covering them on the inside. In one case a single parasite was found in the saline solution used for soaking the skin. No infection was recorded in the abdominal cavity or under the serous membrane of the swimbladder; neither was infection found in a single mirror carp examined. Twenty-four specimens of the 29 fish lice *Argulus foliaceus* collected from the fins of common carp were found to be infected by second- and third-stage larvae of a skrjabillanid species.

Skrjabillanus cyprini n. sp. (Figure 1)

Description

Very fine, long, thread-like nematodes with smooth cuticle. Head end distinctly distended, truncated anteriorly. Mouth opening very small, slightly depressed. Small, simple buccal capsule present, its width being equal to or slightly greater than its length. Base of buccal capsule provided with large conical tooth, its length representing about $2/3$ that of capsule. Four small cephalic papillae present, situated well posterior to level of buccal capsule. Lateral amphids large, oval, situated approximately at mid-distance between posterior end of buccal capsule and level of cephalic papillae. Oesophagus muscular throughout, provided with well-developed external oesophageal glands. Anterior oesophageal gland broad, with rounded end,

extending anteriorly to about mid-distance between nerve-ring and posterior end of oesophagus; posterior oesophageal gland narrow, extending posteriorly to about $2/3$ of distance between end of oesophagus and vulva. Intestine straight, little distinct.

Male (4 specimens; measurements of holotype in parentheses). Length of body 1,800–3,000 (2,040), maximum width 11–12 (12). Width at level of cephalic inflation 12 (12), at narrowed part posterior to inflation 9 (9). Buccal capsule 1–2 (1) in diameter. Length of oesophagus, including its posterior part which is overlapped by oesophageal gland, 84 (90). Nerve-ring encircling oesophagus, 51 (45) from anterior extremity. Posterior end of body conical, provided with broad, membranous caudal alae starting somewhat anterior to cloaca and interconnecting at posterior end to form copulatory bursa. Caudal papillae: 5 pairs; 3rd pair formed by indistinct ventral sessile papillae; remaining pairs formed by pedunculate subventral papillae; pedunculate subventral papillae of first 3 pairs rather long, those of last pair short; 1st pair of papillae adanal, remaining postanal; all postanal papillae situated approximately in anterior half of tail. Copulatory plate markedly sclerotised, being bent in lateral view, –(6) long and –(1) wide. Length of tail 14–19 (14).

Female (10 specimens; measurements of allotype in parentheses). Length of body of gravid females 3,200–4,100 (3,310), maximum width 24–27 (27). Width at level of cephalic inflation 21–27 (27), at narrowed part posterior to inflation 18–21 (21). Buccal capsule 1–3 (1) long and 2–3 (2) wide. Length of oesophagus, including its posterior part which is overlapped by oesophageal gland, 210–402 (285); length of anterior oesophageal gland 99–192 (99), that of posterior gland c. 60–114 (60) from anterior extremity. Vulva situated somewhat posterior to oesophagus, 357–465 (426) from anterior end of body; vulval lips slightly elevated. Vagina short, narrow, directed posteriorly. Monodelphic. Uterus oriented anteriorly, contains eggs and developing larvae; ovary extends posteriorly almost to end of intestine. Fully-developed larvae in uterus numerous, usually with straight bodies aligned longitudinally; length of larvae not established, their width 6 (6). Rectum thin hyaline tube; small unicellular rectal glands present. Tail almost cylindrical, 33–39 (33) long, with 3 large rounded processes at tip; length of caudal processes 2–3 (3).

