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First record of *Skrjabinigylus petrowi* (Nematode: Metastrongyloidea) in a pine marten *Martes martes* from Ireland

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Abstract We report the first record of the parasitic nematode *Skrjabinigylus petrowi* in Ireland, the fifth record of *S. petrowi* outside Russia. Twenty-three of the nematodes were removed from the skull of a male road kill pine marten *Martes martes* from Co. Tipperary. The spicule lengths measured in the male nematodes removed ranged from 410 to 500 µm, which is in agreement with the range of 410 to 605 µm previously recorded for *S. petrowi*. This investigation presents further evidence that anatomical measurements are required for the accurate diagnosis of *Skrjabinigylus* spp. and that *S. petrowi* has a host preference for *Martes* spp.

Keywords *Skrjabinigylus petrowi* · *Martes martes* · Nematoda · Parasite · Ireland

Members of the family Mustelidae are the definitive hosts of the Metastrongyloid nematode of the genus *Skrjabinigylus* Petrov, 1927. *Skrjabinigylus* spp. are found within the frontal sinuses of their definitive hosts, and infection can result in abscesses, perforations and other damage to the skull (Hansson 1968). Following Heddergott's (2009) first record of the nematode *Skrjabinigylus petrowi* in pine

martens *Martes martes* from Germany, we identified *S. petrowi* in a pine marten from Ireland. Due to new legal protection of the pine marten in Ireland, its population is thought to be increasing and expanding into new areas (Marnell et al. 2009). This is the first record of *S. petrowi* in Ireland and makes it the fifth record of *S. petrowi* outside Russia, where it was first described (Heddergott 2009). Prior to this, the only *Skrjabinigylus* spp. reported from Ireland have been *Skrjabinigylus nasicola* which was only found in the Irish stoat *Mustela erminea hibernica* (Sleeman 1988). The skull we investigated was taken from a male (first-year age class by cementum analysis) road kill pine marten found in Roscrea, Co. Tipperary (52° 57' 0" N, 7° 49' 0" W). It has previously been reported that 90% of Russian pine martens from the first-year age class were infected with *Skrjabinigylus* spp., decreasing to 50% once they passed 3 years of age (King 1977). No perforations were observed in the skull. The skull was frozen, cut sagittally and immersed in a 0.7% saline solution so that nematodes could be extracted under a dissection microscope following the methods of Hansson (1968). All nematodes were examined with a light microscope to take morphological measurements and to determine sex. Twenty-three nematodes were removed, 13 from the right sinus frontalis (five males, eight females) and ten from the left sinus frontalis (five males, five females). The anatomical measurements taken were in agreement with those previously taken for *S. petrowi* (Table 1). One of the diagnostic features that distinguish *Skrjabinigylus* spp. from each other is spicule length (Fig. 1). *S. petrowi* spicules have been previously recorded with lengths of 410 to 605 µm (Heddergott 2009). Spicule lengths measured in the specimens from the present study ranged from 410 to 500 µm (Table 1). This also puts the spicules measured

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Table 1 Range of values of selected morphological measurements of *S. petrowi* (table amended from Heddergott (2009) to include results from present study)

<i>Skrjabinigylus petrowi</i>	Measurements/ characteristics	Kontrimavichus et al. (1985)	Koubek et al. (2004)	Heddergott (2009)	Present study ^a
Males	Body length (mm)	11.0–15.6	12.4–14.7	11.7–14.9	11.6–14.48
	Body width (mm)	–	0.47–0.53	0.50–0.56	0.45–0.60
	Spicule length (μm)	449–570	506–540	512–563	410–500
Females	Body length (mm)	28.0–39.5	27.4–31.5	29.5–33.8	24.1–33.1
	Body width (mm)	–	0.87–0.99	0.79–0.91	0.73–1.0

^a Male nematodes, *n*=8; female nematodes, *n*=10

outside the 150 to 324 μm range of measurements previously recorded for *S. nasicola* (Heddergott 2009), the *Skrjabinigylus* species previously recorded in Ireland. It is possible that *S. petrowi* was recently introduced to Ireland carried by an introduced host species. However, it is more plausible that it went undetected in Ireland until now. Apart from Sleeman's (1988) examination of two pine martens, we are not aware of any other investigation into the presence of *Skrjabinigylus* spp. in pine martens in Ireland. The need for anatomical measurements of the nematodes to identify *Skrjabinigylus* spp. to the species level is in agreement with Heddergott's (2009) statement that cleaned skulls are not suitable for accurate diagnosis of infections of

Skrjabinigylus spp. This investigation also presents further evidence of Heddergott's (2009) assumption that *S. petrowi* has a host preference for *Martes* spp. and that earlier records of *S. nasicola* in *Martes* spp. may have been erroneous.

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Fig. 1 Spicule (length 500 μm) of a male *S. petrowi* (Nematoda: Metastrongyloidea) that was removed from the right sinus frontalis of a pine marten (*M. martes*)