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Eino KRALL and Taisia IVANOVA***

NEMATODES OF THE FAMILY *MELOIDODERIDAE* (*NEMATODA, HOPLOLAIMOIDEA*)

3. A NEW SPECIES *MELOIDODERA HISSARICA* sp. n.

Abstract. A new nematode species, *Meloidodera hissarica* sp. n. has been figured and described as a parasite of the willow *Salix excelsa* S. G. Gmel. from a water-meadow in the mountain ridge Hissar, Republic of Tajikistan.

Meloidodera hissarica sp. n.

Fig. 1, *1—10*; fig. 2, *1—8*; fig. 3.

Female (n=15) 629.6 (456—800) μm long by 382.3 (286—465) μm wide. Body length without the neck 495.7 (400—620) μm and neck region length 136.0 (88.0—180.0) μm. Stylet 36.0—38.0 μm long.

The females are white in colour, becoming yellowish after the death. Body sphaerical to bag-shaped; neck region mostly curved ventrally (sometimes dorsally), variable in length. Cuticle in the neck region 6 μm thick, bearing annulation. Annules in this region of body ornamented with quadrangular (square) structures, which are more pronounced in older specimens. On midbody cuticle 12 μm thick, bearing delicate annules overlying parallel rows of punctation. Lip region consisting of a well-developed labial disc 8.5 μm wide with 6 lips and of a slightly set off basal annule.

Two pore-like amphids are situated each on the other side of the mouth opening. Stylet long, slender, slightly curved. Metenchium and telenchium of about equal length. Stylet knobs rounded, 3.6 μm long by 7.2—8.4 μm wide. Dorsal gland emptying into lumen of esophagus 5.0—6.0 μm behind bases of stylet knobs. Metacorpus sphaerical, 30.0—33.0 μm in diameter with strongly developed valvular apparatus. Subventral esophageal glands lobe-likely overlapping anterior portion of intestine. Excretory pore at level of the hinder 2/3 part of the metacorpus length, 135.0—163.0 μm from the anterior extremity.

Vulva protruded, posterior to middle, vulval slit 49.5 (47.0—56.0) μm long. Vulva-anus distance 122.7 (110—138) μm. Anus subterminal. Four bundles of paired muscles are attached to the vagina.

Holotype (female). Length with neck 710 μm, length of neck 160 μm, body width 456 μm. Stylet length 38 μm, stylet knobs 3.6 μm long by 8.4 μm wide. Dorsal gland emptying into lumen of esophagus 6.0 μm behind stylet knob bases. Valvular apparatus of metacorpus 120 μm and excretory pore 142 μm from the anterior extremity. Vulva-anus distance 120 μm.

* Eesti Teaduste Akadeemia Zooloogia ja Botaanika Instituut (Institute of Zoology and Botany, Estonian Academy of Sciences). EE2400 Tartu, Vanemuise 21. Estonia.
** Институт зоологии и паразитологии им. Е. Н. Павловского Таджикской Академии наук (E. N. Pavlovsky Institute of Zoology and Parasitology, Tajik Academy of Sciences). 734025 Душанбе, п/я 70. Таджикистан.

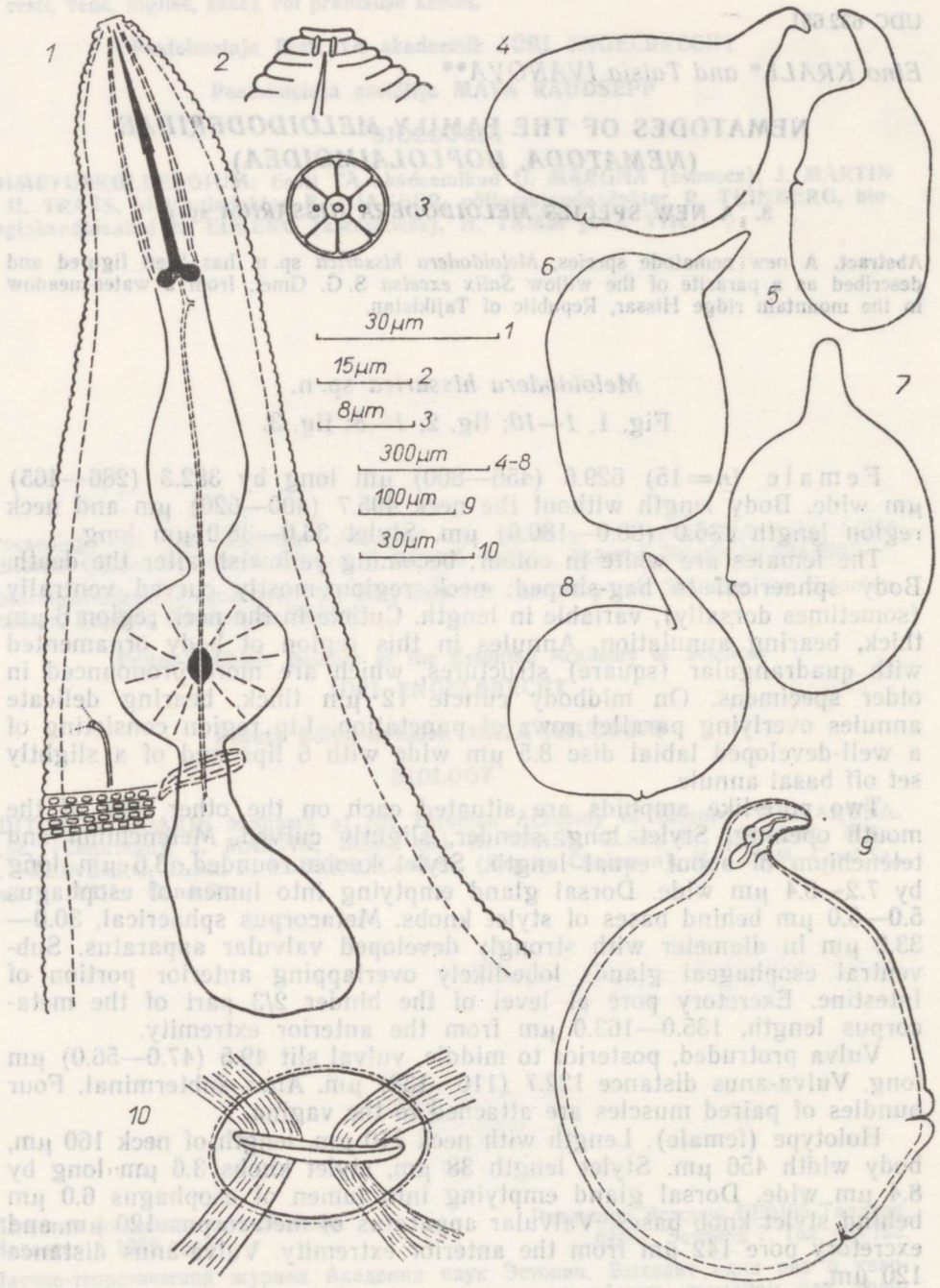

Fig. 1. *Meloidodera hissarica* sp. n. (Female). *1* — anterior end; *2, 3* — head, lateral view and view en face; *4—9* — adult female body forms; *10* — vulval region.

Male (n=4): L=887 (773—892) μm long by 34.0—38.6 μm wide; a=35.2 (32.0—38.6); b=6.1—6.3; stylet 27.5—28.5 μm; spicules 27.5—29.0 μm; gubernaculum 7.2 μm.

Lip region set off, 4.8 μm high by 9.6 μm wide. The internal sclerotization of the lip region well developed. Stylet moderately developed with rounded knobs, which are somewhat extended laterally. The knobbed portion of stylet 2.4 μm long by 4.8 μm wide. Dorsal gland emptying into lumen of esophagus 5.0 μm behind of bases of stylet knobs. Metacorpus spindle-shaped, weakly developed, 13.2 μm long by 8.4 μm wide, with also weakly pronounced valvular apparatus. Subventral esophageal glands overlapping anterior portion of intestine. Excretory pore at level of the esophageal glands. Cuticle bearing annules, which are 2 μm wide in midbody. Lateral field with 4 incisures. Tail short, broadly rounded with irregularly annulated or smooth tip. Spicules tylenchoid, gubernaculum stick-shaped, slightly curved.

Allotype (male): L=892 μm; a=32.0 b=6.1; c=150; stylet 28.5 μm; spicules 29.0 μm; gubernaculum 7.2 μm. The valve of the metacorpus 79.0 μm and excretory pore 160 μm from the anterior exctremity.

Second-stage juvenile (n=10): L=501.4 (448—529) μm; body width 21.4 (20.4—21.6) μm; a=23.1 (20.6—25.5); b=5.3—6.0; c=8.5 (7.4—9.0); c_1=4.1 (3.8—4.5); stylet 31.8 (30.0—33.6) μm.

Lip region scarcely set off, consisting of 4 weakly developed annules, 10.8 μm high by 4.8—5.5 μm wide. Labial sclerotization well developed. Stylet strongly developed with massive knobs which are flattened at the front and 3.6 μm high by 6.0—7.2 μm wide. Dorsal gland emptying into lumen of esophagus 6.0 μm behind stylet knobs. Metacorpus massive, 13.2—18.0 μm long by 9.6—12.0 μm wide. Subventral esophageal glands overlapping the anterior part of intestine. Excretory pore at the level of the middle part of the isthmus, 118.6 (112—129) μm from the anterior extremity. Hemizonid directly in front of excretory pore. Annules of the cuticle in midbody 2 μm wide. Lateral field with 4 incisures. Tail elongate conoid with blunt tip, the hyaline part consisting of 32.8 (25.0—40.0) μm of the tail length. Phasmids 11.9 (10.0—14.4) μm behind anus.

Embryonated eggs 120—156 μm long by 43—54 μm wide; their length/width ratio as 2.4—3.1 : 1.

Differential diagnosis. *Meloidodera*, close to *M. tianschanica* Ivanova et Krall (Иванова, Кралль, 1985), *M. sikhotealiniensis* Eroshenko (Ерошенко, 1978) and *M. alni* Turkina et Chizhov (Туркина, Чижов, 1986). It differs from *M. tianschanica* in that the adult female has a shorter stylet (36—38 μm as compared to 39—42 μm), a shorter vulva slit (47—56 μm as compared to 84 μm), excretory pore at the level of metacorpus (behind the base of esophageal glands in *M. tianschanica*). In juveniles of *M. hissarica* sp. n., the labial region is scarcely set off (clearly set off in *M. tianschanica*), the stylet knobs are flattened in front (concave in *M. tianschanica*), excretory pore is situated at the level of the middle part of isthmus (behind isthmus in *M. tianschanica*).

It differs from *M. sikhotealiniensis* in that the female has excretory pore at the level of metacorpus (at the level of esophageal glands in *M. sikhotealiniensis*), greater dimensions of almost sphaerical metacorpus (30—33 μm as compared to 25—28×21—24 μm in *M. sikhotealiniensis*), smaller vulva slit (47—56 μm as compared to 64 μm in *M. sikhotealiniensis*). Males of *M. hissarica* sp. n. are longer (L=770—890 μm), their stylets are shorter (27.5—28.5 μm) and spicules are longer (27.5—29.0 μm) as compared to *M. sikhotealiniensis* (L=520—730 μm; stylet — 29—36 μm and spicules 21—25 μm, respectively).

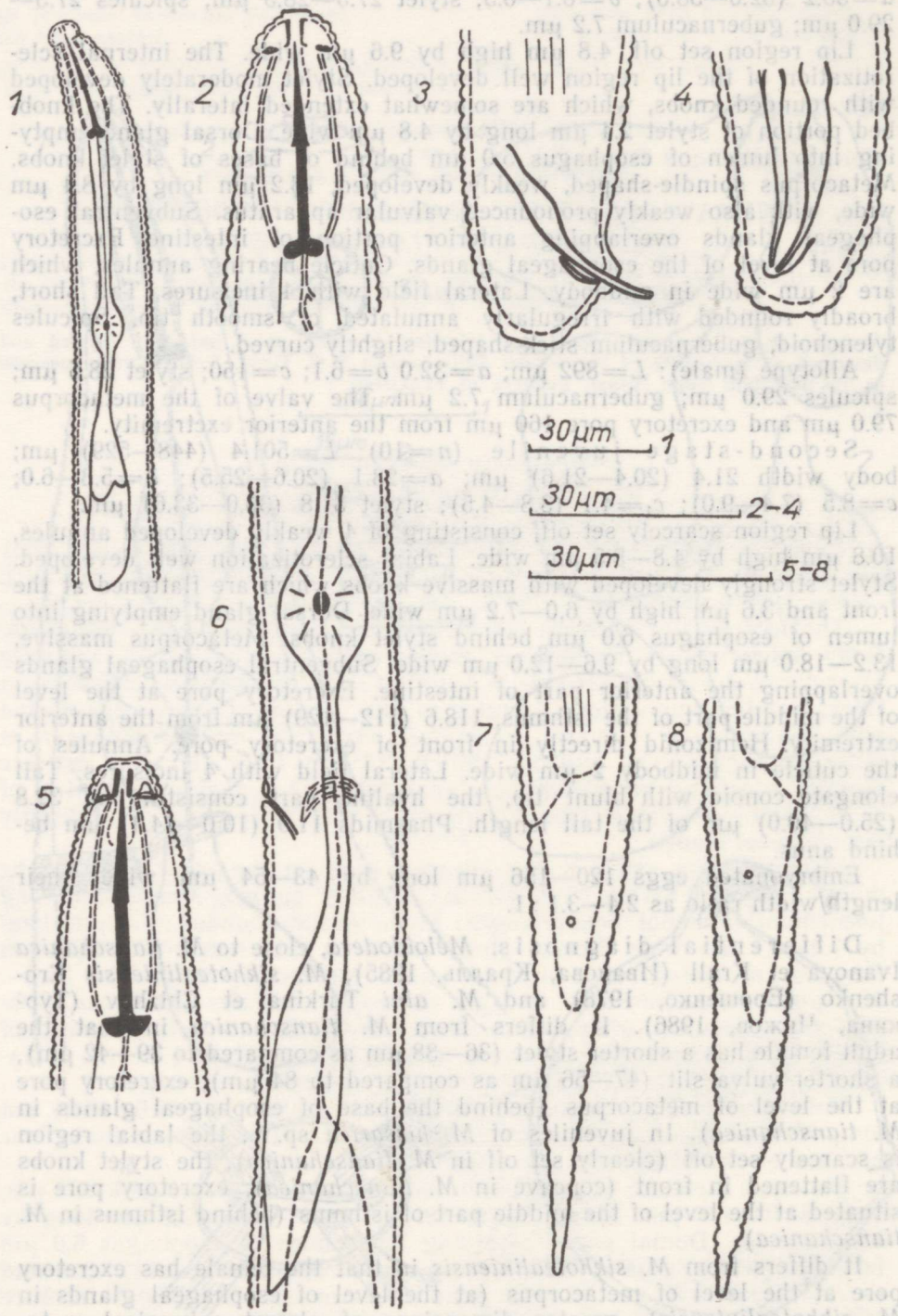

Fig. 2. *Meloidodera hissarica* sp. n. (*1—4* — male; *5—8* — second stage juvenile). *2, 5* — anterior end; *3, 4, 7, 8* — posterior end; *6* — fragment of the body in the esophageal region.

Second-stage juveniles differ by more massive stylet knobs, which are 3.6 μm long in *M. hissarica* sp.n. and only 2.0 μm long in *M. sikhote-aliniensis*.

M. hissarica sp. n. differs from *M. alni* in that the females of the new species are greater (L=456—800×280—465 μm) as compared to L=302—480×186—369 μm in *M. alni*), stylet is shorter (36—38 μm as compared to 40—44 μm in *M. alni*) and the excretory pore is situated at the level of metacorpus (behind metacorpus in *M. alni*). Males are differing in the greater length of spicules (27.5—29.0 μm as compared to 23.0—27.0 μm in *M. alni*). Second-stage juveniles are also differing by greater length of the body (L=440—530 μm) and stylet (30.0—33.6 μm) as compared to L=320—470 μm and stylet being 24.0—29.0 μm in *M. alni*, respectively.

Fig. 3. Root of willow, parasitized by *Meloidodera hissarica* sp. n. Collection No 2630, 10. 7. 1985. Type locality.

Type host. Willow *Salix excelsa* S. G. Gmel.

Type locality. Republic of Tajikistan, mountain ridge Hissar, at 2000 m above sea level. Collected in July, 1985, on a water-meadow of the river Sardaimiyona in the Canyon Romit, the vicinities of the village (kishlak) Novak.

Types. Holotype (female) No 786 (2660 — 31, 29. 7. 1985) and allotype (male) No 787 (2636 — 12, 12. 7. 1985) are deposited in the nematological collection of the Institute of Zoology and Botany, Estonian Academy of Sciences, Tartu, Estonia. Paratypes (females No 797—820, males No 788—790, and second-stage juveniles No 791—796) in the same collection.

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REFERENCES

Ерошенко А. С. 1978. Новый вид мелойдодеры (*Nematoda, Heteroderidae*) из Приморского края. — Паразитология, 12, 456—459.

Иванова Т., Кралль Э. 1985. Нематоды семейства *Meloidoderidae* (*Nematoda, Hoplolaimoidea*). 2. Новый вид *Meloidodera tianschanica* sp. n. — Изв. АН ЭстССР. Биология, **34**, 3, 232—238.

Туркина А. Ю., Чижов В. Н. 1986. Два новых вида нематод (*Tylenchida*), паразитирующих на ольхе серой. — Зоол. ж., вып. 4, 620—624.

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Eino KRALL, Taisia IVANOVA

NEMATOODID SUGUKONNAST *MELOIDODERIDAE* (*NEMATODA, HOPLOLAIMOIDEA*)

3. Uus liik *Meloidodera hissarica* sp. n.

On kirjeldatud Tadžiki Vabariigi Hissaari mäeaheliku Sardaimijona jõe kanjonist (2000 m üle merepinna) paju *Salix excelsa* S. G. Gmel. juurtelt leitud uut nematoodiliiki *M. hissarica* sp. n.

Эйно КРАЛЛЬ, Таисия ИВАНОВА

НЕМАТОДЫ СЕМЕЙСТВА *MELOIDODERIDAE* (*NEMATODA, HOPLOLAIMOIDEA*)

3. Новый вид *Meloidodera hissarica* sp. n.

Описан новый вид нематоды *M. hissarica* sp. n., паразитирующий на корнях ивы *Salix excelsa* S. G. Gmel. в пойме реки Сардаимёна в Ромитском ущелье на Гиссарском хребте (Таджикистан, 2000 м над уровнем моря).