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The Entomopathologic Nematode New Species *Steinernema*  
(*Neoaplectana*) *Disparica* SP. N (*Rhabditida*, *Steinernematidae*)  
From Georgia.

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**ABSTRACT.** The new species *Steinernema* (*Neoaplectana*) *disparica* sp. n. of nematode (*Ocneria disparica* L.) is described in this work. The full measures of females, males and invaded larvae with original pictures are given.

**Key words:** generation, genital, dorsal, ventral, apical.

As a result of entomo-helminthological research the species *Steinernema* (*Neoaplectana*) nematode bioeffectiveness on pest insects [1, 2] was stated both abroad and in our country. Revealing the new aggressive forms of this nematode and their use in the struggle against the forest and agricultural plants pest insects has a particular meaning.

For today 23 species [3] of (N.) nematode is known for the scientists among them two species *S. (N.) georgica* [4] and *S. (N.) thesami* [5] are revealed and described in Georgia.

In 1997-1999 years as a result of the researches carried out on the territory of Tbilisi national parks a new species of nematode from the genus of *Steinernema* (N.) was revealed in the worm (*Ocneria disparica*). The nematode is pathogenic and is well cultivated on *Tenebrio molitor* L., *Galleria mellonella* L., *Bombyx mori* L., and on the worms of *Ocneria disparica* L. itself.

The new species was studied in living and dead forms.

All females (measures are given in microns) (Fig. 1): n = 6. L = 2381 (1794-2969), d = 154 (135-174), a = 15.4 (13.2-17), b = 10.4 (8.4-12.2), c = 29.7 (25-33.7), V% = 55.4 (53-59.4). Data are obtained by measurement of the II-nd generation puberal females.

The cuticle of the nematode is smooth - surfaced. The three lip protuberances with papillas and three amphidial glands are radially situated near the lip papillas. The form of the mouth is like a funnel. Its depth is 9 (9-12), width - 12 (12-14). There are three microonches on the metastom. The excretory canal is situated at the lower part limit of the metacorps. It is almost unnoticed in dead nematodes, and hard to notice in living forms. Ganglion is situated in the lower part of the istmus. The width of the istmus is 18 (16-21). Cardiac bulb is big and round, its diameter is 49 (43-55). The length of the gullet is 227 (213-242) but the width of the metacorps is 36 (28-43). Puberal females vulva lips are protuberant. Vagina is situated perpendicularly to the body, on which the bulbous form spinkter is well noticed. Many of the ova are round, but we meet oval forms too. The middle length of the ova is 48, width - 43. The tail is conic, its length is 80 (72-

88), but the length of the tail hissing 10 (7-14).

Males:  $n = 6$ ,  $L = 1561$  (1328-1784),  $d = 101$  (97-106),  $a = 15.4$  (13.6-17),  $b = 8.5$  (8.4-8.6)  $c = 30.6$  (30.8-30) (Fig. 2).

Males are smaller in comparison with females. Cuticle, the shape of the mouth apparatus the, gullet, ganglion and the position of the excretory canal are the same as in females. The length of the gullet mouth is 4, width 7. Bulbus is round, its diameter is 38 (31-48). The length of the gullet is 183 (158-208). The width of the metacorps and procorps are almost equal and are of 22

(19-24). It has 4 pairs of small and 1 gigantic papillae in the genital part. Papillae are situated in the following way: 2 pairs are situated in the distal part of the tail (1 pair is dorsal and the other ventral), and the other 2 pairs are on the gubernaculum level. Gigantic single papilla is situated above the spicule. Spicules are in pairs and bent. Its head is 9 mc. quadrate sized. The length of the spicules is 57 (50-64). While heating on the temperature of  $40^{\circ}$  nematodes do not through the spicules and they stay in body. The membrane of the body is hard to notice. The length of the gubernaculum is 34 (25-40), width 4 (4-7). The tail is elongated and ends with a blunt end, its length is 51 (43-60), the tail has spikes at the end, the length of which is 7. On valuable nutrient medium the nematode gives three full generations. On the 3rd generation the II age invaded larvae are produced (Fig. 1,c).

Invaded larvae:  $n = 6$ ,  $L = 839$  (776-902),  $d = 33$  (31-36),  $os = 120$  (117-122),  $cd = 82$  (72-88),  $a = 25$  (25-25.4),  $b = 7$  (6.6-7.3),  $c = 10.2$ .

The described new species *S. (N.) disparica* sp. n. with its anatomic and morphologic signs looks like the *Steinernema* (*N.*). Genus nematode, e. g. *S. (N.) disparica* sp. n. dead invaded larva (with the dead body form) looks like the *S. (N.) bothinoderi* according to the Kirianova et Putschkova invaded larva [6], gullet construction *S. (N.) feltiae* [7], *S. (N.) Janiekkii* the number of genital papillae [8]. The new species is also similar with the species *S. (N.) georgica* described in Georgia (according to the place of mouth, gullet, head invaded larvae and vulva) and *S. (N.) thesami* (according to the length of the body, width, length of the gubernaculum and to the index of De mani).

As it has been established the described new species is more similar to *S. (N.) thesami* than to other species of nematodes, but differs from the latter according to the following signs:

1. The spicule of the *S. (N.) disparica* sp. n. is in 7 mc smaller than that of *S. (N.) thesami*. 2. The head of the *S. (N.) disparica* sp. n. is square, while *S. (N.) thesami* head is round. 3. *S. (N.) disparica* sp. n. male has 16 mc longer tail than *S. (N.) thesami* and the spike is 5 mc longer at the end of the tail. 4. The gullet of the new

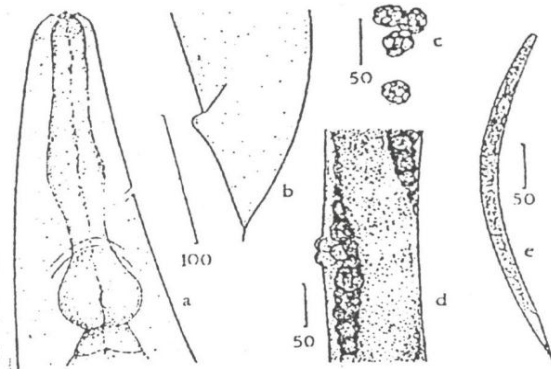


Fig. 1. Female

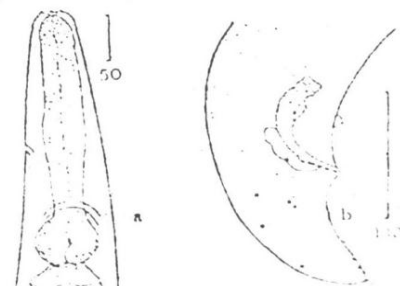


Fig. 2. Male

species. the metacorpals and cardiac bulb are of big size (accordingly 204, 36, 49) than that of *S. (N.) thesami* (183, 30, 41). 5. Excretory canal is in 18 mc closer to the head than that of *S. (N.) thesami*. 6. In comparison with *S. (N.) thesami* new species has in 5 mc thicker spermatocysts. 7. *S. (N.) disparica* sp. n. is revealed in *O. dispar* L. and *S. (N.) thesami* is revealed in *Opherophthera brumata* L. 8. The difference is also noticed in the De Mani indexation of the compared nematodes.

♀ *S. (N.) disparica* sp. n.  
 a = 15.4 (13.2 - 17);  
 b = 10.4 (8.4 - 12.2);  
 c = 29.7 (25.8 - 33.7);  
 V% = 55.5 (53 - 59.4);

♀ *S. (N.) thesami*  
 a = 13 (11.1 - 18.3);  
 b = 11.8 (10.4 - 12.8);  
 c = 35.1 (31.1 - 39.6);  
 V% = 58 (55.2 - 63);

The anatomic and morphological marks allow to consider it as a new species *Steinernema (Neoapectana) disparica* sp. n. The nematode is called after the name of the insect in which it is found. The described species both dead and alive culture (invaded form) are kept in the Entomonematodology laboratory of the Institute of Zoology of the Academy of Sciences of Georgia.

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