

Ogma septemlineata sp. n. (Nematoda: Criconematidae) from Germany

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Summary. *Ogma septemlineata* sp. n. is described from specimens collected from a spruce forest and river bank vegetation in southern Germany. The species is characterised by seven rows of long cuticular scales, two subventral rows, two sublateral rows on either side of the body, and one dorsal row. The dorsal row posteriorly abruptly terminates near the level of the vulva. The scales are apically divided into two or three, rarely four, appendages, except on the anteriormost body annules where they generally remain undivided. Scales of similar shape are present in *O. murrayi* Southern, 1914 and *O. fagini* Escuer & Bello, 1996, species with at least eight rows of scales that are not all divided at the tip. *Ogma septemlineata* sp. n. further differs from *O. murrayi* in the lack of a fringe of spines on the lip annules, the presence of a collar, a longer stylet (99-103 vs 78-93 μm), lower number of body annules (R = 52-55 vs 62-75), position of the excretory pore near the level of the stylet base (Rex = 15-17 vs 20-26), and a blunt tail terminus (sharp in *O. murrayi*).

Key words: Criconematidae, description, new species, spruce forest.

Examination of Criconematidae in the German Nematode Collection, Biologische Bundesanstalt, Münster, revealed a previously undescribed *Ogma* species. Here it is described and illustrated based on specimens collected at two sites in southern Germany. The nematodes had been extracted from soil samples using a decanting-centrifugation method with MgSO_4 , fixed in TAF and processed to dehydrated glycerine through a slow evaporation process.

DESCRIPTION

Ogma septemlineata sp. n.

(Fig. 1, Table 1)

Females. Body short, compact, straight or curved gently ventrad, tapering anteriorly from base of stylet and posteriorly approximately from midbody but more acutely from level of vulva. Cephalic region truncate, with two distinct smooth or finely crenate annules separated by a collar. Anterior annule wider than posterior annule, lobed, directing somewhat anteriorly and surrounding the dome-shaped lip region. Lip region

indistinct, consistent with characteristics typical for the genus with an H shaped oral plate, elongate amphids and two dorso-lateral, two ventro-lateral, two somewhat larger lateral pseudolips, and no submedian lobes. Posterior cephalic annule generally directed laterally or curved posteriad. Body annules 7-8 μm wide, directing laterally. Each annule with seven scales, two located subventrally, four sublaterally (two on either side of the body) and a single dorsal scale. Scales located in rows on distinct ridges running from base of head to post-vulval region. In the post-vulval region the dorsal row stops abruptly reducing the number of scales per annule to six. Scales turned sharply posteriad and on retracted females lie almost flat against the body and overlap the adjacent body annule. Each scale consists of a solid base, a middle part that may be somewhat wider, and a distal part that is divided into two or three, somewhat diverging, digitate, blunt appendages. On the anterior five to ten body annules, where the scales gradually increase in size, the distal part of the scales generally remains undivided, while on the posterior part of the body an extra division may result in an occasional fourth appendage. The dorsal scale generally

Table 1. Morphometrics of *Ogma septemlineata* sp. n. (measurements in μm).

Character	Holotype female	Type females (Holotype + 6 paratypes)	2 paratype juveniles
Body length (L)	370	380 \pm 22 (350–420)	295, 365
Oesophagus length	126	130 \pm 3 (126–136)	105, 105
Stylet length	103	101 \pm 1 (99–103)	81, 72
Stylet shaft length (including stylet knobs)	17	18.1 \pm 0.6 (17–19)	15, 12
First lip annule width	19	18.6 \pm 1.4 (17–21)	14, 12
Width at midbody ¹	53	57 \pm 3 (53–62)	42, 30
Width at vulva (VB) ¹	33	32 \pm 2 (28–35)	–
Vulva-tail end length (PV)	39	39 \pm 4 (35–45)	–
PV/VB	1.2	1.2 \pm 0.1 (1.1–1.4)	–
a	7.0	6.7 \pm 0.4 (6.0–7.5)	7.0, 12.2
b	3.0	2.9 \pm 0.2 (2.6–3.2)	2.8, 3.5
V	90	90 \pm 1 (88–92)	–
R ²	52	54 \pm 2 (52–57)	59, 63
Rex ³	17	16 \pm 0.8 (15–17)	?, 19
RV ⁴	8	8.3 \pm 0.5 (8–9)	–

¹ measured from the base of the scales; ² total number of body annules; ³ number of the annule, counted from the anterior end, on which the excretory pore lies; ⁴ number of the annule, counted from the tail end, on which the vulva lies.

slightly longer than the other scales. At midbody, dorsal scales 14–15 μm long and 6–7 μm wide. Ventrally, closer to the tail terminus, base of the scale growing longer and narrower and its digitate fringe becoming shorter, with fewer appendages, and more irregular in direction; total length of these scales no longer than on rest of body. Last two tail annules without scales, giving the terminus a blunt appearance. Detritus generally accumulated strongly between the annules and under the scales, more particularly in the postvulval region. Cephalic sclerotisation distinct. Stylet rigid. Knobs anteriorly indented, 3–4 μm high and 10.5–13 μm across. Median bulb 16–23 (19.5) μm and basal bulb 10–12 (11) μm wide. Excretory pore close to level of stylet base, located between the two subventral rows of scales, with the scales in the rows on either side somewhat reduced in length. Vulva distinct, closed, located between the two subventral rows of scales, with two conically rounded lips protruding from the body more than twice the distance of the base of scales of adjacent annules. Vagina difficult to observe. Spermatheca oval, set off, ventrad, in some specimens filled with what appear to be small sperm. Anus obscure, tail straight or turned slightly ventrad, tail peg absent.

Juveniles. Body straight or curved slightly ventrad, tapering from base of oesophagus anteriorly and from midbody posteriorly. Stylet robust, rigid, about 75 μm long, stylet base anchor shaped,

about 9 μm wide and 3 μm high. Head truncate, with two distinct annules separated by a collar. First lip annule crenate, in one specimen with a fringe of about 20 fine spines directed anteriorly. Second lip annule finely crenate, with a fringe of fine hairs, resembling body annules, but lacking scales. Body annules slightly retrorse, with eight to twelve scales on longitudinal ridges. Each scale consisting of an elongate, oval, posteriorly directed base covered with sharp spines; spines most pronounced and longest at the tip of the scale. Scales in tail region narrower and slightly longer than on the rest of the body. Disregarding scales, tail tapers conically to sharp terminus. Last two to three tail annules without scales.

Type locality and habitat. Holotype, five paratype females and two paratype juveniles collected in a subalpine region, 950 m above sea-level, in a flat valley 1 km east of Linderhof near Garmisch-Partenkirchen, Bavaria, Germany (UTM grid PT47), 28 September 1992. Predominantly spruce forest, *Picea abies* (L.), with young *Fagus sylvatica* L. and *Sorbus aucuparia* L. and dense ground cover of *Oxalis acetosella* L., *Prenanthes purpurea* L., *Ranunculus* sp., grasses, moss and other vegetation; loamy peat soil, pH 7.4. One paratype female was collected at Jungingen near Hechingen, Baden-Württemberg, Germany (UTM grid NU05), 22 July 1982, from loamy sand under river bank vegetation with *Alnus incana* L., *Fraxinus*

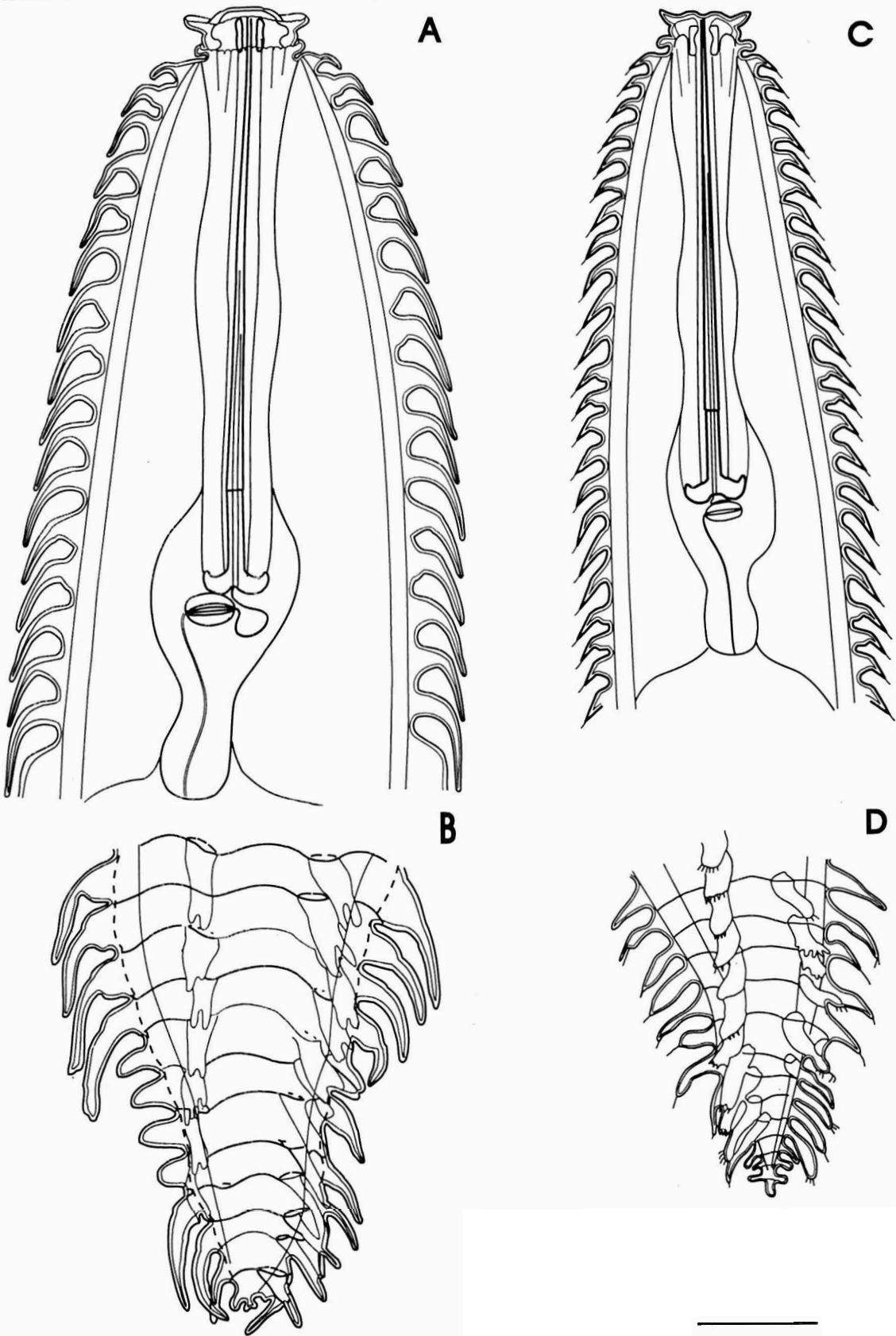


Fig. 1. *Ogma septemlineata* sp. n. A: Female, anterior end; B: Female, posterior end; C: Juvenile, anterior end; D: Juvenile, posterior end. Scale bar - 20 μ m.

excelsior L., *Aegopodium podagraria* L. and *Urtica dioica* L. At the Linderhof site *Ogma murrayi* Southern, 1914 and *Macroposthonia* (= *Mesocriconema*) *rotundicauda* (Loof, 1964) Loof, 1989 were also present, and at the Jungingen site *Criconemoides morgensis* (Hofmänner & Menzel, 1914) Taylor, 1936, *Criconemoides parvus* Raski, 1952 and *Macroposthonia* (= *Mesocriconema*) *solivagum* (Andrássy, 1962) Loof & de Grisse, 1989 were present.

Type material. Holotype, five paratype females and two paratype juveniles deposited in the German Nematode Collection, Biologische Bundesanstalt, Münster, Germany, one paratype female in the nematode collection of the Nematology Department, University of California, Davis, USA.

Diagnosis. *Ogma septemlineata* sp. n. is characterised by seven longitudinal rows of distally divided scales over the body of the female, two of the rows subventral, four sublateral (two on either side of the body), and one dorsal. It seems unique in that the dorsal row does not continue over the postvulval region, and the excretory pore, vulva and anus are located between the rows, rather than on one of them. The new species is further characterised by two smooth to weakly crenate lip annules separated by a collar. Juveniles with eight to twelve scales located in rows on longitudinal ridges; scales consisting of an elongate, oval, posteriorly directing base covered with sharp spines.

Ogma septemlineata most closely resembles *O. murrayi* and *O. fagini* Escuer & Bello, 1996 in the shape of the scales on the body being elongate flaps, which may be divided at the tip, and in the absence of scales on the last two or three annules of the tail (Southern, 1914; Siddiqi, 1965; Mehta & Raski, 1971; Escuer & Bello, 1996; Brzeski, 1998). It differs from these two species in that there are seven rows of scales that, except for those on the two or three anteriormost body annules, are all divided at the tip, whereas in *O.*

murrayi and in *O. fagini* there are eight rows of scales, only scales at midbody and posteriorly are generally divided and there is no dorsal ridge on the postvulval region. It further differs from *O. murrayi* in the lack of a fringe of rounded spines on the lip annules, the presence of a smooth collar below the first lip annule, the longer stylet (99-103 vs 78-93 μm), the lower number of body annules (R = 52-55 vs 62-75), the anterior position of the excretory pore near the level of the stylet base (Rex = 15-17 vs 20-26) and the blunt tail terminus (sharp in *O. murrayi*).

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REFERENCES

- Brzeski, M.W. 1998. *Nematodes of Tylenchina in Poland and Temperate Europe*. Museum and Institute of Zoology, Polish Academy of Sciences, Warszawa, 396 pp.
- Escuer, M. & Bello, A. 1996. *Ogma fagini* sp. n. and description of the male of *Criconemella rosmarini* Castillo *et al.*, 1988 (Nematoda: Criconematidae) from Spain. *Nematologica* 42: 265-274.
- Mehta, U.K. & Raski, D.J. 1971. Revision of the genus *Criconema* Hofmänner & Menzel, 1914 and other related genera (Criconematidae: Nematoda). *Indian Journal of Nematology* 1: 145-198.
- Siddiqi, M.R. 1965. *Criconemoides citricola* n. sp. (Nematoda: Criconematidae), with a redescription of *Criconema murrayi* (Southern, 1914). *Nematologica* 11: 239-243.
- Southern, R. 1914. Nematelmia, Kinorhyncha and Chaetognatha. *Proceedings of the Royal Irish Academy, Clare Island Survey* (54) 31: 1-80.

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Резюме. Из образцов почвы, собранных в еловом лесу и на берегах рек Южной Германии, описывается *Ogma septemlineata* sp. n. Новый вид характеризуется 7 рядами длинных кутикулярных выступов: двумя субвентральными и двумя sublateralными рядами на каждой из сторон тела и одним дорсальным рядом. Дорсальный ряд оканчивается на уровне вульвы. Каждый из кутикулярных выступов разделяется на оконечности на три, реже четыре, отростка, за исключением выступов на передних кольцах кутикулы, которые не разделяются на вершине. Такие же особенности кутикулярного вооружения описаны для *O. murrayi* Southern, 1914 и *O. fagini* Escuer & Bello, 1996 – видов с не менее чем 8-ю рядами выступов, часть которых не разделяется на вершине.
