

New species of the marine free – living nematodes of the genus *Rhips* Cobb, 1920 (Chromadorida: Chromadoridae) from the Kuril Islands waters

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Summary. *Rhips orientalis* sp. n. was found in the sandy sediments at a depth of 33 m, close to Shumshu Island (Northern Kuril). It is distinguished from the five known species of the genus by the larger size of its body, oesophagus and spicula measurements, by the structure of the anterior end cuticle and the values of the De Man indices 'b' and 'c'. A key for the identification of *Rhips* species is given.

Key words: new species, key, *Rhips* spp, marine nematodes, Chromadoridae, Kuril Islands.

According to the diagnosis of the genus *Rhips* Cobb, 1920, species belonging to this genus have a sclerotized annulated cuticle with well-defined lateral fields. Members of the *Rhips* are characterized by their large transversally elongated amphids with thickened margins of the pouch, articulate spicules from two arcuate parts and the gubernaculum with two L-shaped auxiliary pieces. Also by the presence of six ribs radially arranged around the cephalic capsule, originating from the anterior margin of thicker body cuticle. The nematodes of the genus *Rhips* resemble those of *Actinonema* Cobb, 1920. Between the five described species of the genus *Rhips* (Gerlach, Riemann, 1973; Platt, Zhang, 1982; Blome, 1985), *R. longicaudata* should be considered as a "species inquirenda" as it was described by Timm (1961) only from an immature female.

This paper is based on a study of material collected from the Kuril Islands. Nematodes of the genus *Rhips* were found in this region for the first time and differ markedly from known species the genus by their large body size, cephalic end cuticle structure and values of the De Man indices 'b' and 'c'.

MATERIALS AND METHODS

Nematodes were found in meiobenthic samples collected near Shumshu Island in the Okhotsk Sea (12. 10. 1987). The samples were fixed in 4% formalin, nematodes cleared in glycerine and embedded in glycerine-gelatin.

DESCRIPTION

Rhips orientalis sp. n. (Fig. 1 & 2)

Holotype male: L = 2945 μ m; a = 43.9; b = 8.1; c = 12.6.

Paratypes males (n=2): L = 2937, 3150 μ m; a = 43.7, 43.8; b = 8.1, 8.9; c = 10.6, 12.6.

Paratype female: L = 2100 μ m, a = 47.7, b = 8.5, c = 9.7, V = 49%.

Adults. Body long, slender. Tail narrowly attenuated. Annulated cuticle with transversal striation throughout body surface lacking only on cephalic capsule and tail terminus. Between head end and mid-body anterior edge of each cuticular ring overhangs the posterior edge of the neighbouring ring.

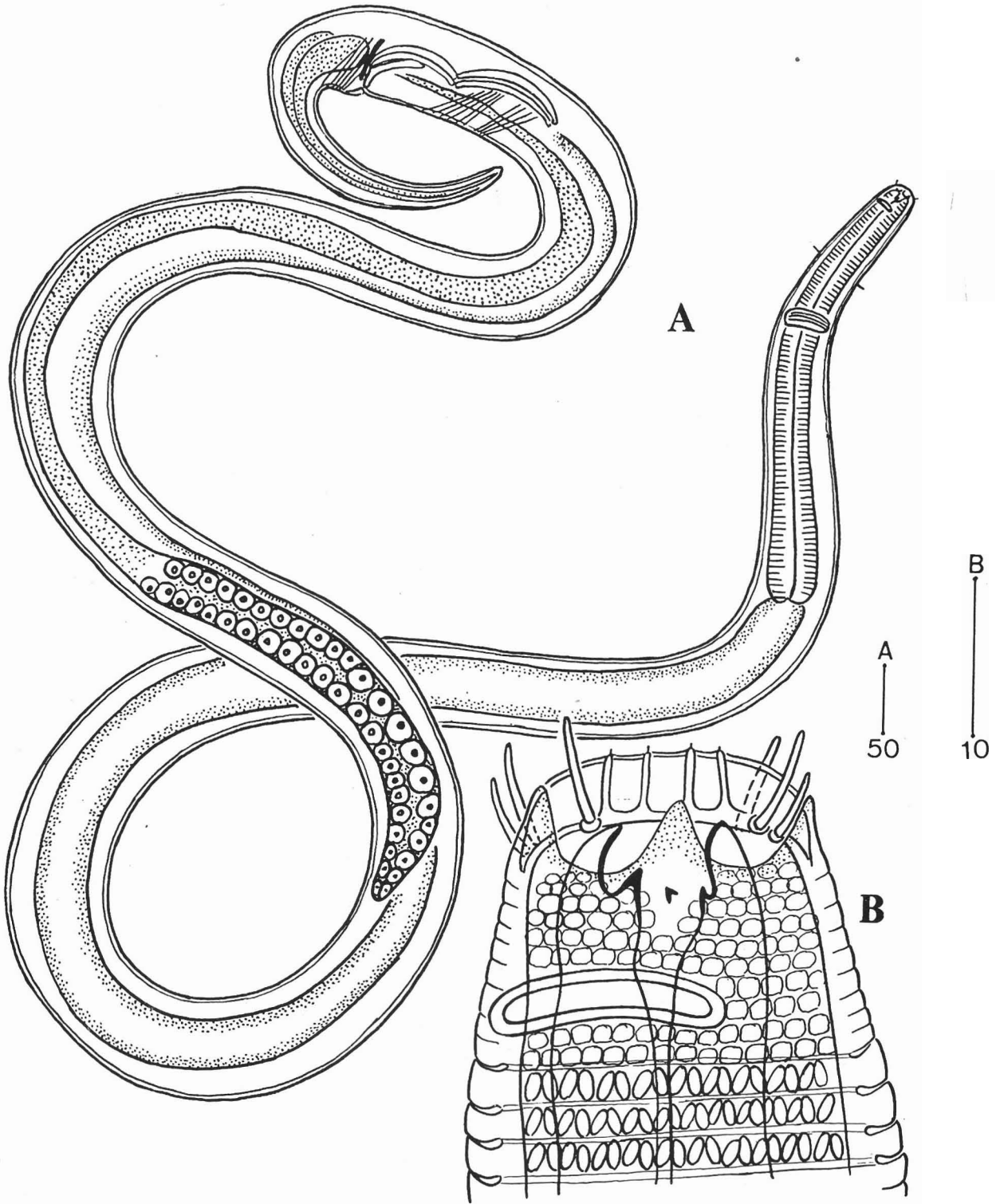


Fig.1. *Rhips orientalis* sp.n. Male. A: Total view; B: Head end. Bars in μm .

Posterior to mid-body an opposite pattern was observed: posterior edge of ring overhangs anterior edge of next ring. Lateral line begins about 100 μm from posterior margin of amphidial pouch, gradually broadening to maximum width near mid-body and then narrowing and disappearing in tail region. In addition to lateral fields separate sublateral fields were also observed, as narrow strips of non-annulated cuticle with maximum width in posterior body half. Sublateral fields disappear in posterior quarter of tail region. Cuticle visibly thinner in head-end with 6 cap-like projections of thick body cuticle radially arranged between cephalic sensillae. Inner sclerotia inside each cuticle ring: quadrangular ones close to anterior end or elliptical ones throughout the body. Cephalic bristles in two circles. Cervical bristles situated at a distance of three body diameters of stoma bottom level from anterior end. Thin-walled stoma vestibulum supported by 12 rod-like cuticular projections. One large hollow tooth and two small sublateral onchia. Oesophagus slightly broadened posteriorly.

Male. Body diameter: stoma bottom level 23–25 μm , oesophagus base level 67–70 μm , cloacal level 65–74 μm , maximal diameter 72–73 μm . First circle bristles 7–7.5 μm long, second circle bristles 5–5.5 μm long. Stoma length 14–17 μm . Stoma width at dorsal tooth tip level 7–7.5 μm . Dorsal tooth length 2.5 μm . Oesophagus length 352–362 μm , diameter 12–14 μm close to stoma and 38–40 μm in basal part. Testis elongated, situated to the right of intestine, 300–320 μm long. Total length of male gonad 1085–1260 μm . Spicula proximal part 83–96 μm long along arc or 75–80 μm if measured on span. Length of spicula distal part 60–68 μm along arc and 75–85 μm on span. Auxiliary L-shaped pieces of gubernaculum 40–47 μm long. Tail length 245–270 μm .

Female. (Single female specimen was in poor condition, therefore the measurements are incomplete). Body diameter: stoma bottom level 23

μm , oesophagus base level 56 μm , anal level 46 μm , body maximum 63 μm . Stoma length 13 μm , dorsal tooth length 3 μm . Oesophagus 310 μm long, with 14 μm diameter close to stoma and 35 μm in basal part.

Type locality. Sandy sediments from a depth of 33 m, close to the Okhotsk Sea coast of Shumshu Island in Northern Kuril.

Type material. Holotype male (slide MH-6536) deposited in the nematode collection of the Department of Zoology, Far East State University, Vladivostok. Paratype male (MH 6535) and female (MH 6539).

Differential diagnosis. Resembling *Rhyps gracilicauda* Blome, 1985 and *R. paraornata* Platt, Zhang, 1982 in head morphology, *R. orientalis* sp. n. differs markedly in the body size, oesophagus and spicula length, which are twice as large as in all others *Rhyps* species. The values of the De Man indices 'b' and 'c' of *R. orientalis* sp. n. also differ markedly from those in other species.

Key for identification of *Rhyps* species

1. Amphids are situated just posterior to the basis of wedge-shaped ribs of the cuticle at cephalic end.... 2
 - Amphids are situated about 1/4 corresponding body diameter from the base of wedge-shaped ribs.... 3
2. Articulate spicula of two unequal parts: anterior one 1.5 times longer than posterior one..... *R. ornata* Cobb, 1920.
 - Spicula from two equal parts..... *R. galapagensis* Blome, 1985.
3. Tail short, conical, 'c' index value more than 7.3..... 4.
 - Tail long, filiform close to terminus, 'c' index value 6.0–6.3..... *R. gracilicaudata* Blome, 1985.
4. 'b' index value less than 6.7; body length 920–1280 μm *R. paraornata* Platt, Zhang 1982.
 - 'b' index value more than 8.0; body length 2937–3150 μm *R. orientalis* sp. n.

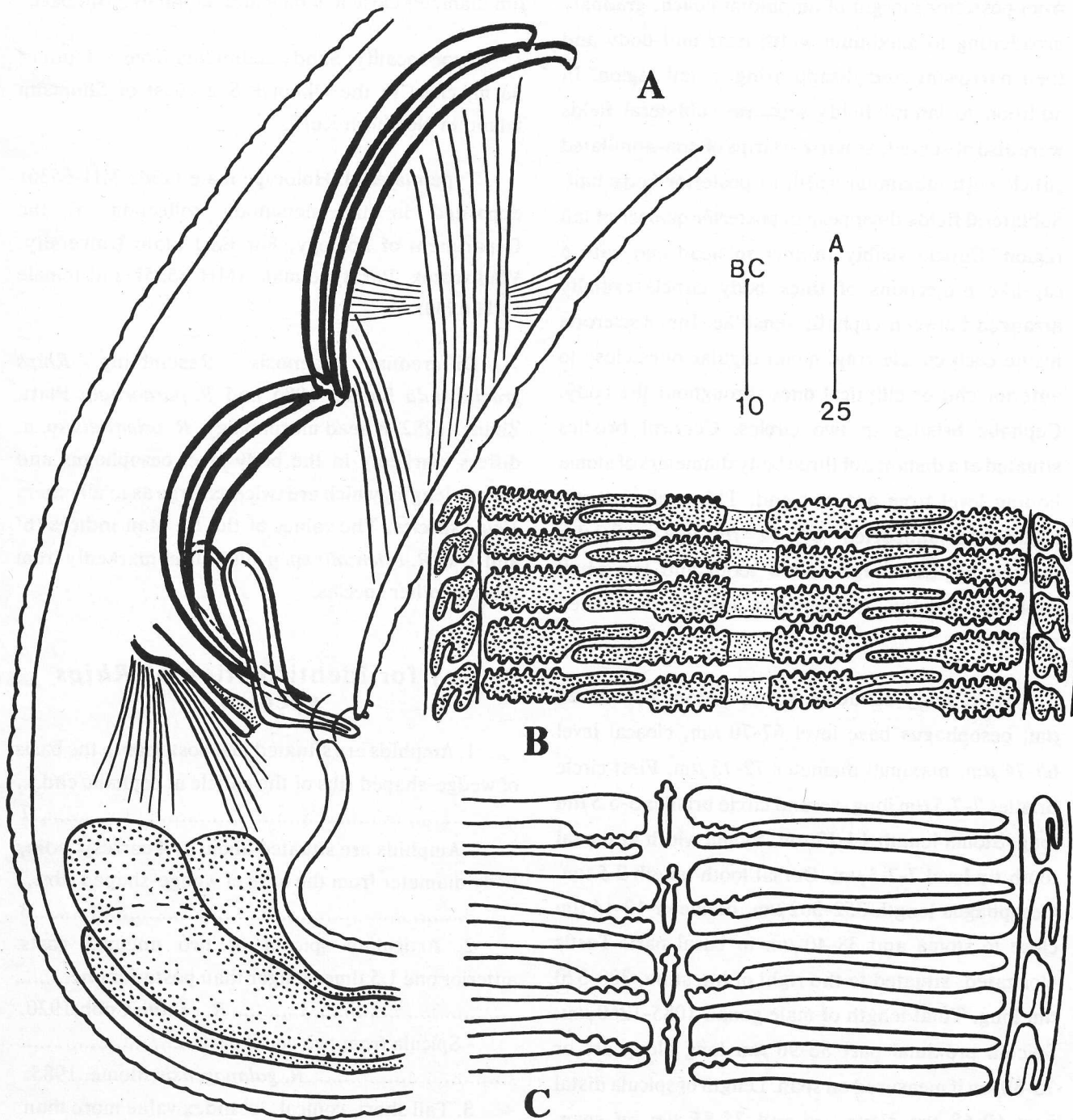


Fig.2. *Rhips orientalis* sp.n. A: Copulatory apparatus; B: Lateral differentiation of cuticle in the body middle; C: Lateral differentiation of cuticle close to cloacal level. Bars in μm .

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Куликов В. В. Новый вид морских нематод рода *Rhips* Cobb, 1920 (Chromadorida: Chromadoridae) из района Курильских островов.

Резюме. В пробах мейобентоса, взятых в районе Охотского побережья острова Шумшу (Курильские острова) на глубине 33 м, обнаружен новый вид морских свободноживущих нематод *Rhips orientalis* sp. n., который отличается от 5 известных в настоящее время видов более крупными размерами, структурой кутикулы в области головного конца и значением индексов 'b' и 'c'. На основании собственных и литературных данных составлен ключ для определения видов рода *Rhips*.
