

玛利安蚓属一新种

(环节动物门:寡毛纲:线蚓科)

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摘要 描述线蚓科 Enchytraeidae 玛利安蚓属 *Marionina* Michaelsen 1889 一新种——长白山玛利安蚓 *M. changbaishanensis* Xie, Liang et Wang, sp. nov.。该种的主要特点为:刚毛每束 2~4 条,直棒状,一束内刚毛长度不等;肾管在隔膜前仅包含肾漏斗;储精囊单个,发达;受精囊腔有 2 个近球形的分支,分支内具精子环。

关键词 环节动物门,寡毛纲,线蚓科,玛利安蚓属,新种。

中图分类号 Q959.193

我国线蚓科环节动物寡毛纲的研究起步较晚。且主要集中于长江流域。而有关我国东北地区土壤小蚓类的工作至今尚未展开,其邻近地区(如日本、俄罗斯等地)线蚓的分类研究仅有零星报道(Nakamura, 1978, 1986; Nurminen, 1980)。有鉴于此,作者于 1993 年对吉林省长白山土壤小蚓类区系进行了调查。描述的一新种——长白山玛利安蚓,新种 *Marionina changbaishanensis* sp. nov.。

模式标本保存于中国科学院水生生物研究所无脊椎动物标本室。

长白山玛利安蚓,新种 *Marionina changbaishanensis* Xie, Liang et Wang, sp. nov.

(图 1~7)

体长(固定)=5~6 mm(正模 5.5 mm)。体节数=20~39(正模 38)。头孔在 0/1 节。皮肤腺体发达,呈横向排列,每节 3~4 排。刚毛直棒状,无毛节,近端略钩转(图 1~2)。刚毛分布:3,4-2,3,4:3,4-2,3,4。一束内刚毛长度不等,最大长度达 50~60 μm ,最大宽度为 4~5 μm 。环带位于 VII~XIII 节,略增厚,腺体细胞明显,形状及分布不规则。雄孔一对,在 XII 节腹面两侧。成熟标本 XII 节无刚毛。

脑在 II 节(图 3),前端有明显凹陷,后端平截或略内凹,长 85~90 μm ,最宽处 62~66 μm 。咽板发达,在 II~III 节。咽后球一对,明显。隔膜腺 3 对,在 IV~VI 节,首对小且无腹叶;后两对发达,腹叶明显。3 对隔膜腺的背叶均不相连。无消化肾管,无其它消化道附属物。黄色细胞始于 VI 节,稀少。背血管始于 VII~XIII 节。肾管始于 6/7,环带前有 5 对。肾管在隔膜前长 5~10 μm ,主要包含肾漏斗;隔膜后间隙组织发达,椭圆形,长 58~65 μm 。排泄管的起始位置视各节而有不同,前段体节始于隔膜后组织的后腹部,至中、后部逐渐移至组织末端(图 5~6)。体腔球多,椭圆形,直径 20~25 μm 。储精囊单个,占 X~XI 背部。精巢一对,裸露,不分叶,位于 XI 节。精漏斗圆柱形,颈部略宽于漏斗体,长 350~358 μm ,宽 80~85 μm ,可向前延

伸至 X 节(图 7)。输精管细长,出现多次盘曲,限于 VII 节,偶亦至 XIII 节。阴茎球一对,在 VII 节,半球形,长约 $100\sim 104\ \mu\text{m}$,宽 $60\sim 65\ \mu\text{m}$,高 $60\sim 63\ \mu\text{m}$ 。卵巢一对,在 VII 节。缺卵囊。成熟个体每次具 1~2 个卵。

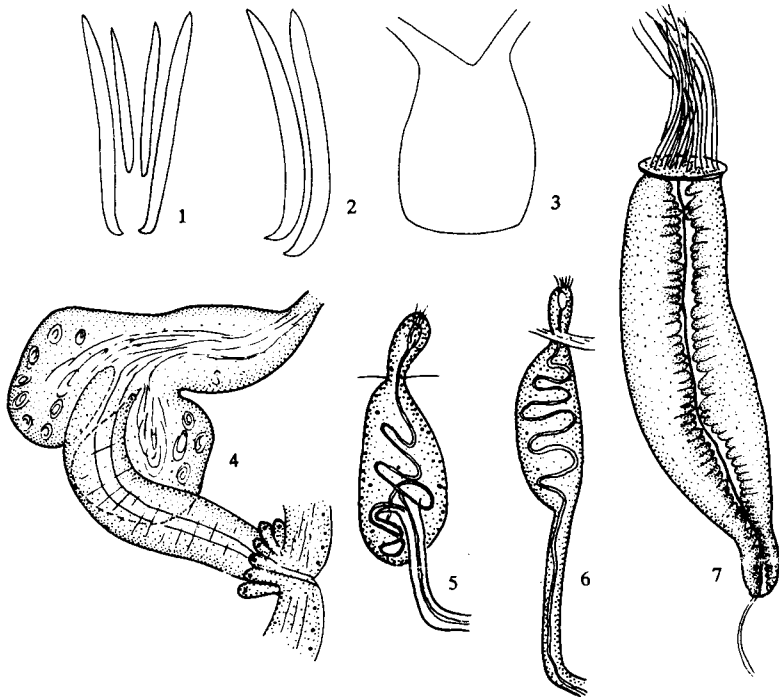


图 1~7 长白山玛利安蚓,新种 *Marionina changbaishanensis* Xie, Liang et Wang, sp. nov.

1. 脑(brain) 2. V 节刚毛(setae in V) 3. XVII 节刚毛(setae in XVII) 4. 受精囊(spermatheca) 5. 前端肾管 VI/VII (nephridium in VI/VII) 6. 后端肾管(nephridium in XVII/XVIII) 7. 精漏斗(sperm funnel)

受精囊局限于 V 节,有一短的内囊管连食道,但左右两内囊管不相连(图 4)。受精囊腔圆形,形成一对近球形分支,长 $55\sim 60\ \mu\text{m}$,分支的直径 $58\sim 60\ \mu\text{m}$ 。各分支近腔壁处有多个精子环。受精囊外囊管粗短,壁厚,具明显管腔,长 $130\sim 140\ \mu\text{m}$,宽 $20\sim 22\ \mu\text{m}$ 。受精囊孔基部有 5~6 个附属腺体,其大小约为外囊管长度的 $1/3$ 。

正模标本 完全成熟,整体封片。1993 年 8 月采于吉林省长白山海拔约 740 m。

副模标本 约 50 条成熟标本,10 条整体封片,余者保存于 10% 的福尔马林溶液中。采集地同上。

讨论 就肾管的形态而言,本种与 *M. tubifera* Nielsen & Christensen 及 *M. cambrensis* O'Connor 较接近。但新种的许多特征如肾管始于 6/7,具单个发达的储精囊,受精囊孔基部有 5~6 个大的附属腺体以及受精囊腔具双分支等,与 *M. tubifera* 有明显差别;而新种 VI 节无食道附属物,受精囊腔有两分支以及两内囊管不相连等特点,则可与 *M. cambrensis* 区别。

在本属已知的陆生种类中,仅 *M. sjællandica* Nielsen & Christensen, *M. southerni* Nielsen et Christensen, *M. simillima* Nielsen et Christensen 的受精囊腔有精子环,与新种有相似处。但它们的刚毛数,隔膜腺的分布,肾管的形态以及受精囊的形状等特征均与新种不同。

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A NEW SPECIES OF *MARIONINA* (OLIGOCHAETA:ANNELIDA:ENCHYTRAEIDAE)

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Abstract

One new species of *Marionina* Enchytraeidae is described in this paper. *Marionina changbaishanensis* Xie, Liang et Wang, sp. nov. characterized in 1) setae straight, with 2-4 unequal setae in a bundle; 2) preseptal nephridial portion with funnel only; 3) seminal vesicle unpaired and developed; and (4) spermathecae with 2 sub-spherical diverticula containing sperm rings.

***Marionina changbaishanensis* Xie, Liang et Wang, sp. nov.** (Figs. 1-7)

Length(preserved) = 5-6 mm (holotype 5.5 mm). Segments 20-39 (holotype 38). Head pore in 0/1. Epidermal gland cells abundant and arranged transversely, ca. 3-4 rows per segment. Setae from II onwards ventrally and laterally, straight and with distinct ental hook, 2-4 setae per bundle. Unequal the setal length of bundles, usually longer and thicker the outer ones, 50-60 μm long and 4-5 μm wide in maximum. Clitellum extending over XIII and setae of XIII, with epidermal gland cells irregularly arranged. Male pores one pair and ventral at mid XIII.

Brain in II, concave anteriorly and slightly incised or truncated posteriorly; 85-90 μm in length and 62-66 μm in width. 3 pairs of septal glands in IV-VI, not united dorsally; the first pair small and no ventral lobes, the rest large and with ventral lobes. No abruption between oesophagus and intestine. Chloragogen cells poor. Dorsal blood vessel originating in XIII or XIII. Nephridia from 6/7 onwards, with 5 pairs in pre-clitellum region. Anteseptale small, with funnel only, ca. 5-10 μm in size. Postseptale elongate, length 58-65 μm , with postero-ventral or terminal efferent duct. Lymphocytes elliptic, abundant, 20-25 μm in size.

Seminal vesicle single, extending forward to X. Testes compact, finger-shaped and confined to XI. Sperm funnel cylindrical, 350-358 μm in length and 80-85 μm in width. Collar distinct and slightly wider than sperm funnel. Vasa deferentia unmodified, confined in XIII (sometimes to XIII), much coiled. Penial bulbs sub-spherical, ca. 100-104 μm in length, 60-65 μm in width and 60-63 μm in height. Spermathecae paired and confined in V. Ental ducts very short and respectively connecting to oesophageus posterior of V. Ampulla cylindrical, length 55-60 μm . Two subspherical diverticula at the base of ampulla, 58-60 μm in diameter, with sperm rings encycling near greatest circumference. Ectal duct short and stout, length ca. 130-140 μm and width 20-22 μm .

With 5-6 conspicuous accessory glands surrounding the base of spermathecal pore, the size ca. 1/3 the length of ectal duct.

Holotype matured, whole-mounted, collected August, 1993 from Changbaishan Mountain (41°95'N, 127°88'E; about 740 m), Jilin Province.

Paratypes ca. 50 matured specimens. All from the type locality. 10 whole-mounts, the rest in 10% formalin.

Etymology. The name is derived from of the new species.

Remarks. The new species is close to *M. tubifera* Nielsen *et* Christensen and *M. cambrensis* O'Connor in the shape of nephridia, but differs from *M. tubifera* in the presence of the unpaired seminal vesicle, the large accessory glands at the spermathecal pores, and the two spermathecal diverticula. From *M. cambrensis*, in addition to the presence of the spermathecal diverticula, it differs also in the absence of the oesophageal appendages at VI, and the no fusion of two spermathecal ental ducts.

Key words Oligochaeta, Annelida, Enchytraeidae, *Marionina*, new species.