

中国水栖寡毛类的研究

IV. 仙女虫科和颤蚓科的新记录和稀有种*

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摘要 本文共记载仙女虫科和颤蚓科的9个种, 其中6个种是国内新记录, 即森珀头鳃虫 (*Branchiodrilus semperi*)、三齿尾盘虫 (*Dero trifida*)、平叉吻盲虫 (*Pristina synclites*)、坦氏泥蚓 (*Ilyodrilus templetoni*)、美洲管水蚓 (*Aulodrilus americanus*)、维氏沼丝蚓 (*Telmatodrilus vej dovskiy*); 同时将一亚种 [昌都两栖吻盲虫 (*Pristina amphibiotica changtuensis*)] 提升为种 [昌都小吻盲虫 (*Pristinella changtuensis* stat. et comb. nov.)]。

关键词 水栖寡毛类, 仙女虫科, 颤蚓科, 新记录

本文除将一亚种提升为种外, 主要记述了仙女虫科和颤蚓科(环节动物门, 寡毛纲)的6种新记录。文中对2个稀有种亦作了扼要描述。

仙女虫科 Naididae

洛蒙吻仙女虫 *Arcteonais lomondi* (Martin, 1907) (图 1AB)

1(固定后标本体长) = 5.0—5.5mm。s(体节数) = 27—36。具短吻。发状刚毛每束4—17条, 无锯齿。针状刚毛尖刺状, 无毛节, 每束5—9条。腹刚毛每束3—8条, 毛节在中间或近端, 远叉长。

采集地: 江西省潘桥、梅林和芦围三个水库('91-IV~'92-I)

讨论: 本种曾在长江和黑龙江发现过^[1,2]。国外见于欧洲、俄国的亚洲部分和北美洲^[3-5]。

瓦氏红仙女虫 *Haemonais waldvogeli* Bretscher, 1900

1 = 7—8mm。s = 46—66。首数节具黑色斑块。背刚毛约自 XV—XIX 节始, 发状刚毛每束0—2条, 常1条, “S”形; 针状刚毛每束0—2条, 常1条, 毛节在远端, 远叉的长度为近叉的1.6倍。腹刚毛每束2—4条, 体前端者(约 XIII 节前)细长, 毛节在近端, 远叉细长; 体后端者较弯曲, 毛节在远端, 远叉由等于至短于近叉。交配毛每束2—3条, 似钩状刚毛。

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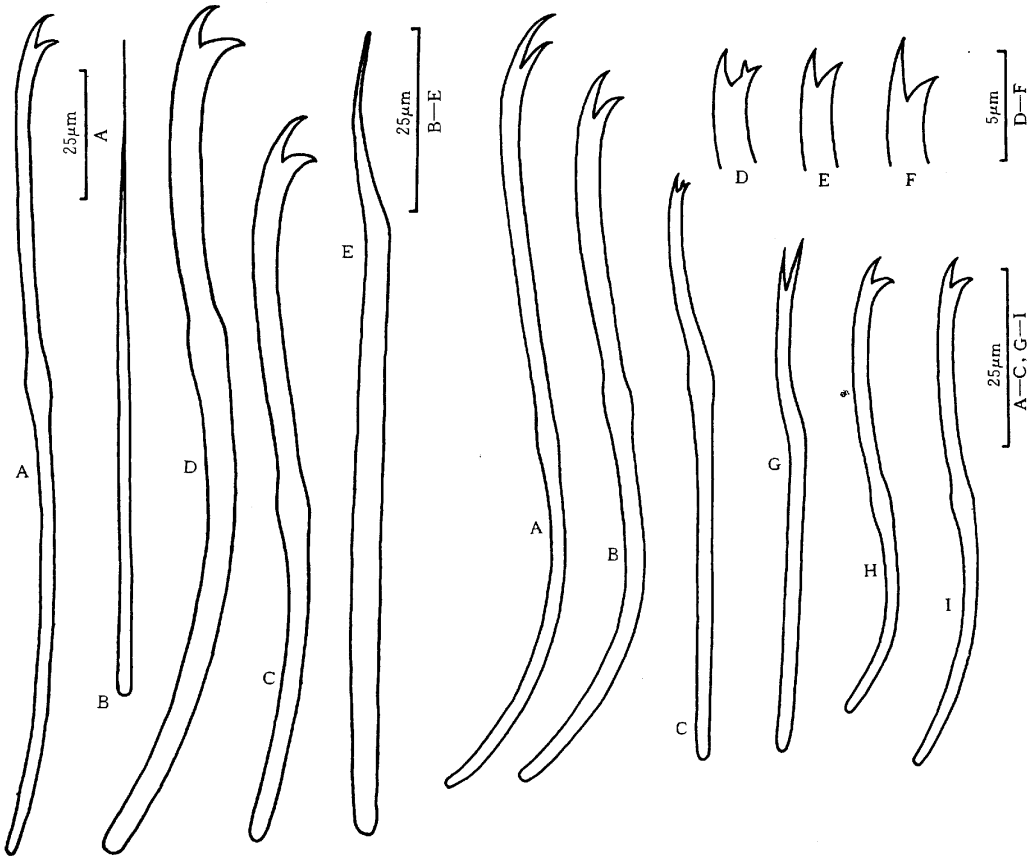


图 1 AB. 洛蒙吻仙女虫, C—E. 森珀头鳃虫; AC D. 腹刚毛(III, IX, LX), BE. 针状刚毛(VI, 尾部)

Fig. 1 AB. *Arcteonais lomondi*, C—E. *Branchiodrilus semperi*; ACD. ventral seta(III, IX, LX), BE. needle(VI, posterior)

图 2 A—F. 三齿尾盘虫, G—I. 平叉吻盲虫; ABHI. 腹刚毛(体前端, 体后端, IV, XIV), CG. 针状刚毛, D—F. 针状刚毛远端放大

Fig. 2 A—F. *Dero trifida*, G—I. *Pristina synclites*; ABHI. ventral seta (anterior, posterior, IV, XIV), CG. needle, D—F. distal end of needle

采集地: 武汉东湖('90—VI), 衡阳市池塘及小水沟('91—V)。

讨论: 陈义^[6]记载的 *Haemonais laurentii* Stephenson 为本种的次级同物异名。瓦氏红仙女虫在国外分布于印度、欧洲、美洲等地^[3,4]。

森珀头鳃虫 *Branchiodrilus semperi* (Bourne, 1890) (图 1C—E)

1 ≈ 15mm. s ≈ 152. n = 83. 头端鳃丝长, 包裹发状刚毛, 向后鳃丝渐短以至消失。发状刚毛每束 1—4 条。在固定标本中体前端的针状刚毛难以观察, 体后端针状刚毛枪刺状, 每束 1 条。腹刚毛每束 2—3 条, 体前端者较细, 远叉细长, 毛节近中, 体后端者两叉近等长, 毛节在远端。

采集地: 桂林和南宁地区的流水和静水('93—IX)

讨论: 本种系国内新记录。国外仅见于印度^[3,7]。

三齿尾盘虫 *Dero trifida* Loden, 1979(图 2A—F)

1 ≈ 6mm. s = 69. n = 33. 背刚毛自 VI 节始, 每束含发状刚毛和针状刚毛各 1 条; 针

状刚毛的远叉长于或等于近叉,叉间有小齿或无。腹刚毛每束2—5条,II—V节者细长,远叉较长,V节后腹刚毛粗短,远叉较细,略长于近叉。鳃4对。

采集地:衡阳市耒水('91-V),梧州贺县贺江('93-VIII)。

讨论:本种系国内新记录。国外仅见于北美洲^[8]。

昌都小吻盲虫亚种提升为种 新组合 *Pristinella changtuensis*(Liang, 1963) stat. et comb. nov.

Pristina amphibiotica changtuensis Liang, 1963.

l = 1.0—1.8mm。 w(宽) = 0.1—0.17mm。 s = 17—27。 n = 11—14。无吻。背刚毛每束具发状刚毛和针状刚毛各1—2条。发状刚毛无锯齿。IV节针状刚毛特别粗,约为它节的2—3倍,且较长,远叉退化甚至消失;V节针状毛亦稍粗长,VI节者远叉偶尔消失;其它体节针状刚毛正常,两叉近平行,远叉较短。腹刚毛每束4—7条,毛节在远端,毛干长度自前向后渐增,体前端者通常远叉略长或两叉相等,后端者通常两叉相等或远叉略短。环带在VIII—1/2IX节。无受精囊。精管膨部明显。无交配毛。

模式产地:西藏昌都地区察隅县察瓦龙(扎那)。

其它采集地:衡山溪流和水田('91-V)。

讨论:本文第一作者曾将本种定为两栖吻盲虫昌都亚种(*Pristina amphibiotica changtuensis*)^[9],但现在我们认为应提升为种,即昌都小吻盲虫(*Pristinella changtuensis*)(原吻盲虫属中的无吻类群已另立为小吻盲虫属^[10])。上述种的特征综合了原始描述和对最新材料的观察结果。湖南衡山与西藏昌都相距甚远,尽管如此,两地标本的特征却十分相似。这说明昌都小吻盲虫的特征是稳定的。

昌都小吻盲虫与相似种 *Pristinella idrensis* (Sperber) 和 *Pristinella amphibiotica* (Lastockin)^[3] 构成一个单系,称之为两栖小吻盲虫组 (*Pristinella amphibiotica* complex)。该组成员均栖息于间歇性水体中,具有以下共同离征:IV节针状刚毛粗大;无受精囊和精英,有精巢,具卵囊。它们均是无性种,因其生殖系统特殊,种群内个体之间不能交换基因。关于无性种的定种标准, Wiley^[11]认为:若无性种群有足够的区别,则应分成不同的种。昌都小吻盲虫与相似种的区别明显,其主要特征为:雄性生殖器官较

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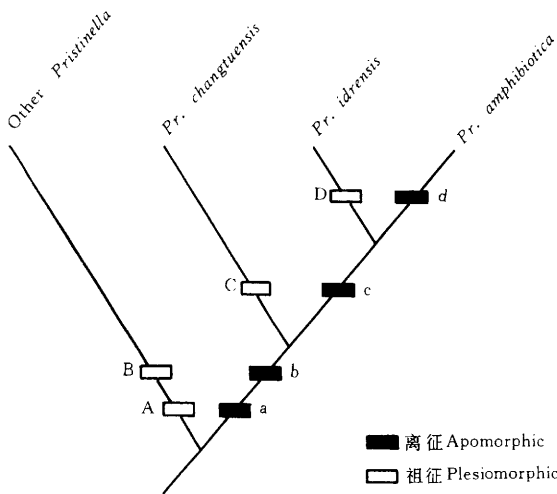


图3 两栖小吻盲虫组的系统发育关系

Fig. 3 Phylogenetic relationships among the members of *Pristinella amphibiotica* complex

A——具受精囊 spermathecae present; a——无受精囊 spermathecae absent. B——IV节针状刚毛正常 needle on IV normal; b——IV节针状刚毛粗大 needle on IV thicker and longer. C——精管膨部明显 atria conspicuous; c——精管膨部不明显 atria inconspicuous. D——雄生殖管分化 male ducts differentiated; d——雄生殖管退化 male ducts almost undifferentiated

发达, 精管膨部明显; IV 节针状刚毛特别粗, 为另外两种的 2 倍, 并且远叉退化甚至消失; V 节针状刚毛亦略增粗。因此, 原两栖吻盲虫昌都亚种应提升为独立的种。两栖小吻盲虫组的系统关系推测如图 3。特征极性的确定依据外类群原则。

平叉吻盲虫 *Pristina synclytes* Stephenson, 1925 (图 2G—I)

1 \approx 4.5mm. s = 47. n = 20. 活体淡红色。具短吻。发状刚毛每束 1 条, 无锯齿。针状刚毛每束 1 条, 毛节甚不明显, 远叉稍短, 体前端腹刚毛每束 3—5 条, 两叉等长, 远叉较细, 毛节在近端或中间; 体后端腹刚毛较少, 毛节偏远端。体腔球不透明, 白色。

采集地: 桂林扬堤漓江 ('92-IX), 梧州昭平县桂江 ('93-VIII), 梧州贺县临江 ('93-VIII)。

讨论: 本种系国内新记录。国外见于印度、非洲及北美洲^[3,4,12]。

颤蚓科 Tubificidae

坦氏泥蚓 *Ilyodrilus templetoni* (Southern, 1909) (图 4)

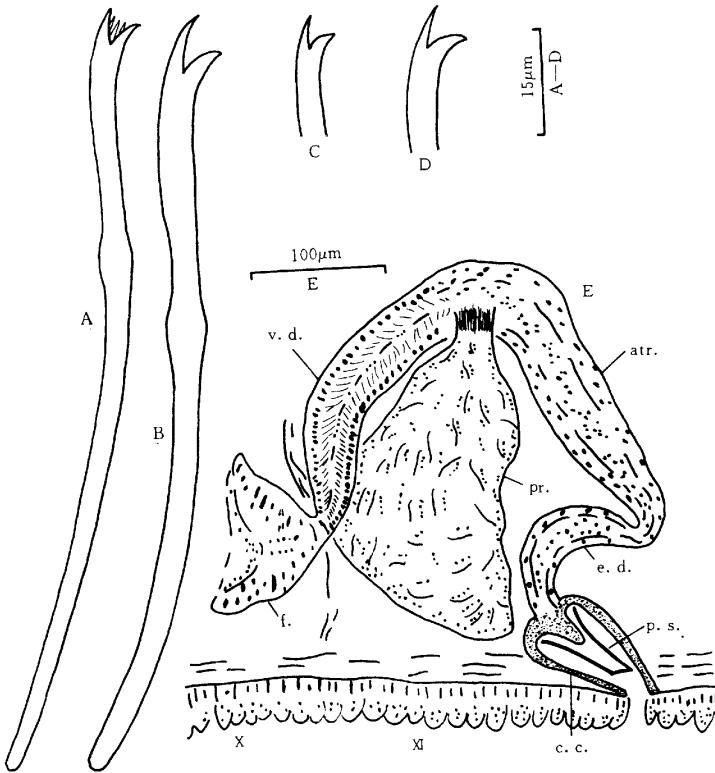


图 4 坦氏泥蚓 A. III 节针状刚毛, B. III 节腹刚毛, C. 体后端针状刚毛远端, D. 体后端腹刚毛远端, E. 雄生殖管

Fig. 4 *Ilyodrilus templetoni* A. needle(III), B. ventral seta(III), C. distal end of posterior needle, D. distal end of posterior ventral seta, E. male duct

c. c.——copulatory chamber 交配腔, e. d.——ejaculatory duct 射精管, f.——funnel 精漏斗, v. d.——vas deferens 输精管, atr.——atrium 精管膨部, pr.——prostate 前列腺, p. s.——penial sheath 阴茎鞘

1 ≈ 12mm. s ≈ 72。活体橙黄色。体宽向后锐减。发状刚毛每束 2—4 条,无锯齿;针状刚毛每束 2—3 条,前端者两叉等长,远叉稍细或等粗,叉间具 2—3 个小齿,向后远叉变细,近叉增粗,小齿少或无。腹刚毛每束 3—6 条,前端者毛干较直,远叉较长,向后两叉近乎等长。输精管短而粗,与精管膨部的界限模糊;精管膨部长筒形;射精管粗,以缢缩与膨部相连。受精囊有或无。

采集地: 武汉东湖('91-I), 衡阳市蒸水('91-V), 衡阳市湘江('91-V), 衡阳市耒水('91-V), 耒阳市耒水('91-V)。

讨论: 本种系泥蚓属在我国的首次记录。该种见于欧洲、亚洲、北美洲等地^[4]。

美洲管水蚓 *Aulodrilus americanus* Brinkhurst et Cook, 1966 (图 5)

1 ≈ 10mm. s = 70。口前叶锥形。肠道在 XII—XXIV 节粗大,约为体宽的 2/3。无发状刚毛。II—IX 节每束刚毛 6—8 条,单尖;X 节始每束 4—6 条,分叉,近叉较长,叉间具蹼状膜;至体后部刚毛数减少,近叉变得钩曲。

采集地: 衡山溪流('91-V)。

讨论: 本种系国内新记录。国外见于北美洲。本标本未性熟,但其刚毛与 *Aulodrilus americanus*^[4] 相似(仅双叉刚毛的起点不同),故暂定为该种。

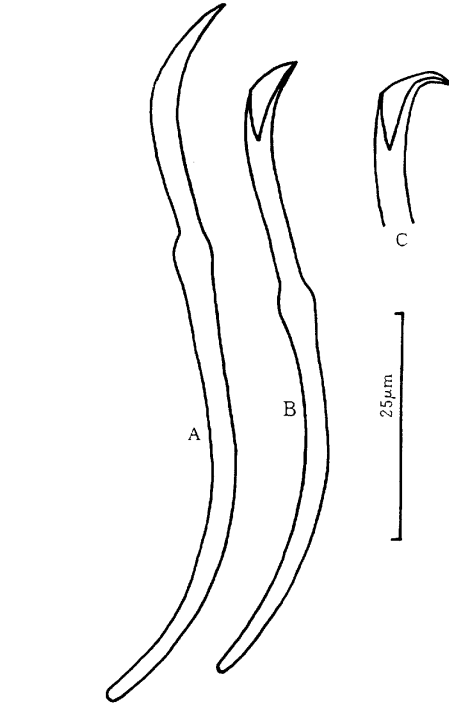


图 5 美洲管水蚓; A B. III 和 X 节刚毛, C. 尾端刚毛远端
Fig. 5 *Aulodrilus americanus*; A B. seta(III, X), C. distal end of posterior seta

维氏沼丝蚓 *Telmatodrilus vej dovskiy* Eisen, 1879 (图 6)

1 = 30—50mm. s ≥ 80。体较细长。口前叶呈矮锥状。刚毛始于 II 节,背、腹都只有钩状刚毛,其形态前后略有不同。前端体节刚毛每束 3—4 条,长 83—87µm,单尖,毛节略靠远端;后部体节刚毛每束减至 1—2 条,分二叉,远叉短小,毛节亦靠远端。环带在 XI 节。雄生殖孔在 XI 节。精漏斗在 10/11 节隔膜前,输精管长,作多次弯曲后与精管膨部相连,精管膨部呈长管状,沿膨部有多个彼此分离的小型块状前列腺。射精管长,可以翻转成假阴茎,但无真阴茎,无交配毛。受精囊开口于 X 节,受精囊管粗短,受精囊腔卵形至不规则的长卵形,腔内有精荚一个,侧视呈蝌蚪状,顶视如球状。有受精囊毛,不变型。

采集地: 长江下游江苏省仪征江段('80s)

讨论: 本种由 Eisen(1879)^[13]发现于美国加利福尼亚州内华达山脉高达 7000 英尺处,是个罕见种类。长江标本的刚毛形态及生殖器官特点与美洲的记载无大差别,只美洲标本似有较长的阴茎,并有不型型的交配毛而无受精囊毛^[4]。分布长江的个体虽无明显真阴茎,但射精管甚长,翻转时即与较长的阴茎类似,虽无交配毛,但受精囊毛存在且不变型,应系本种无疑。关于生物的地理分布,已有一些例证表明我国与北美的区系相对较接

近。维氏沼丝蚓在我国的发现亦是一例。

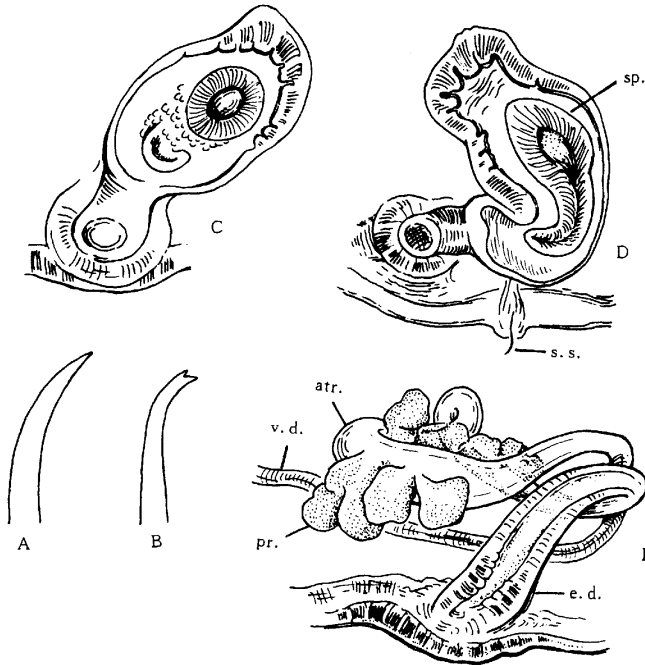


图 6 维氏沼丝蚓; A B. 体前端和体后端刚毛, C D. 受精囊, E. 雄生殖管
 Fig. 6 *Telmatodrilus vejdivskyi*; A B. seta (anterior, posterior), C D. spermathecae, E. male duct.
 sp.—spermatophore 精英, s. s.—spermathecal seta 受精囊毛; 其它同图 4

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AQUATIC OLIGOCHAETA FROM WULING MOUNTAINS AREA

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Abstract

Fifty species of oligochaetes belonging to 24 genera and 3 families, as well as a few unidentified immature enchytraeids, were collected from Wuling Mountains area in 1988—1989 (Tab. 1). Among them, *Specaria josinae* (Vejd.), *Pristinella osborni* (Walton), *Aulodrilus japonicus* Yamaguchi and *A. pectinatus* Aiyer, *A. limnobius* Bretscher are recorded from China for the first time. *Piguetiella denticulata* and *Pristinella aequidentata* are considered to be new to science. The rediscovery of *Ilyodrilus asiaticus* Chen reveals that it differs greatly from all known tubificid genera and, thus, a new genus, *Chenidrilus*, is established. Descriptions of new species and new genus are given herein.

Naididae

Piguetiella denticulata sp. nov. (Fig. 2)

l (length) = 4.3—6.5 mm; s (segments) = 46—53. No eyes. Setae all bifid crotches, dorsal setae from VI on, 3—5 in a bundle, with nodulus ca. 1/3 toward proximal end. Teeth of setae equally long, with 1—2 minute denticles between two teeth in some setae. Ventral setae of the same shape. Stomach absent. Coelomocytes numerous.

Locality: Holotype; Songtao River, Guizhou Province ('88-N-24).

Paratypes; Zhangjiajie, Hunan Province ('89-V-24).

The new species resembles *P. michiganensis* Hiltunen in general, but differ from the latter by the presence of denticular setae and the absent of a stomach.

Pristinella aequidentata sp. nov. (Fig. 3)

l = 2 mm (with budding), s = 19—40, n = 17—19. No proboscis. Dorsal setal bundle with 2—5 hairs and 2—5 needles. Hair setae 140—190 μ m long, without serration; needle setae 40—50 μ m long, bifid, teeth equal in length (1.8/1.8 μ m). Ventral crotchets all of the same shape, with equal teeth and proximal nodulus.

Locality: Holotype and Paratypes; Songtao River, Guizhou Province ('88-N-24).

The new species resembles *P. acuminata* (Liang) in the great number of dorsal

According to Wiley(1981), when two clones are adequately diagnosed, the naming of species is reasonable. In fact, *Pristinella changtuensis* has its own characteristics. It has conspicuous atria. Its needles on IV are twice as thick as those of the allied species, having distal tooth small or absent. Needles on V are also enlarged. Therefore, the authors are of the opinion that the former subspecies *Pristina amphibiotica changtuensis* should be separate.

***Telmatodrilus vej dovskyi* Eisen, 1879** (Fig. 6)

Diagnosis: $l = 30-50\text{mm}$. $s \geq 80$. Setae all crotchets, anteriorly simple pointed, 3-4 per bundle, posteriorly bifid, 1-2 per bundle. Vasa deferentia long, atria tubular, with numerous small discrete prostate glands. Eversible pseudopenes sometimes present, but no true penes and penial setae. Spermathecae containing spermatophores, with unmodified spermathecal setae.

Locality: Lower reaches of Changjiang (Yangtze) River('80s)[Yizheng Xian(32.3° N, 119.2° E)]

Remarks: The morphological characters of our specimens conform quite well to the descriptions of *Telmatodrilus vej dovskyi* from America, except some differences which are considered to be infraspecific variations. Although no unmodified penial setae, similar setae were found near spermathecal pores. The long ejaculatory duct is evaginable. The penis shown in the original description is considered to be a result when the duct is evaginated.

Key words Aquatic Oligochaeta, Naididae, Tubificidae, New records