

鱼类寄生线虫伍氏属*

鳢伍氏线虫新属新种的研究

余 仪 王桂堂

(中国科学院水生生物研究所, 武汉 430072)

提 要

本文报道了我国西南武陵山区鱼类寄生线虫一新种——鳢伍氏线虫, 新种 (*Wuinema mysti* sp. nov.); 建立了伍氏属一新属 (*Wuinema* gen. nov.), 隶属于琴柏科 (Quimperiidae), 琴柏亚科 (Quimperiinae)。

关键词 琴柏科线虫, 伍氏属, 新属, 新种, 鳢伍氏线虫。

作者在武陵山区水系鱼类寄生虫调查中, 发现一种寄生于大鳍鳢 [*Mystus macropterus* (Bleeker)] 消化道中的线虫, 经鉴定, 该种线虫隶于琴柏科、琴柏亚科^[1], 但与琴柏亚科中的现有种、属的特征有较显著差异, 故认为是琴柏科的一新属新种。现将此新属新种描述如下:

伍氏属, 新属 (*Wuinema* gen. nov.)

属的特征: 隶属琴柏科 (*Quimperiidae* Baylis, 1930) 体小、线形, 尾尖细。体前段具发达的侧翼膜, 口呈三角形; 无唇和头乳突。排泄孔位于接近肠前端处。颈部具一对感觉神经。食管分为长的前肌质部和短的后腺体部。雄虫交合刺两根, 长度相等, 形状相似; 具引带。肛门前方具一乳突状腺体孔。具肛前肌质吸盘, 无尾翼膜或尾翼膜极不发达。尾乳突均不带柄。雌虫阴门位于身体后半部, 卵生, 卵为椭圆形至圆形, 卵壳较厚, 光滑。寄生于淡水鱼类。

模式种: 鳢伍氏线虫, 新种 (*W. mysti* sp. nov.)

寄主: 大鳍鳢 (*Mystus macropterus*)

寄生部位: 胃、前肠。

采集地点: 贵州省松桃县(酉水); 湖南省慈利县(澧水)。

成虫为线形, 乳白色, 前段具发达的侧翼膜, 头部顶端具透明薄膜罩住口周围, 头部前端的皮下组织不向外弯曲 (图 1a)。口呈三角形, 无头乳突, 化感器不显著, 在口的腹面具一裂口 (图 1d)。食管圆筒形, 由三部分构成, 神经环前端是较细密的肌质部, 神经环后是一段较粗疏的肌质部, 最后约 1/4 段食管是腺体部, 与肌质部无明显的分界线。腺体部前端具一个小核, 后端具两个小核。在食管腺体部开始处两侧具一对感觉神经, 其末梢通

* 本学名谨为表达对已故著名鱼类学家、线虫学家伍献文教授(学部委员)的怀念和对伍惠生教授的敬意。

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至侧翼膜上(图 1a,b)。排泄孔位于食管与肠连接处稍偏后。雌雄虫尾部均尖细,尾尖端均具一小突起。

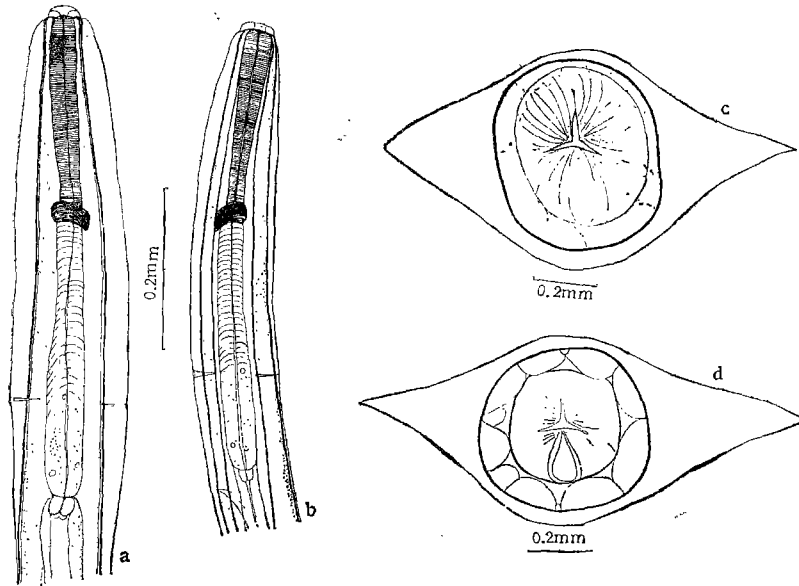


图 1 鰻伍氏线虫,新种

Fig. 1 *Wuinema mysti* sp. nov.

a. 虫体前段腹面观; b. 虫体前段背侧面观; c. 头顶面观; d. 头顶截面观

a. Anterior end of body, dorsal view; b. Anterior end of body, lateral view;
c. Head end, apical view; d. Head end, sectional view

雄虫: 尾部通常向腹面呈螺旋形卷曲,尾翼膜不发达或无。有发达的肌质肛前吸盘。交合刺一对,大小及形状相同,在其后部有一短而呈倒三角形的鞘状引带,套住交合刺的后部。尾乳突均不具柄,肛前 4 对,第一对位于肛前吸盘前方,第二对位于吸盘两侧或略靠前,第三对在吸盘以后,第四对接近泄殖孔。在第四对乳突的腹面正中有一乳突状腺体孔。肛侧乳突两对,分别位于泄殖孔前后两侧,肛后乳突 5 对,有 3 对小的位于近侧面处;另有两对大而呈块状的乳突位于腹面处。靠近侧方的后两对乳突。(图 2a,b)

雄虫各部测量如下 ($n = 10$, 单位: mm): 体长 5.797—7.526, 体宽 0.101—0.172。食管长 0.535—0.596;神经环至前端 0.212—0.263;感觉神经至前端 0.434—0.515;排泄孔至前端 0.566—0.626。交合刺长 0.088—0.098,引带长 0.030—0.040;尾长 0.150—0.188。

雌虫: 阴门位于身体后部约 1/3 处,没有发达的前阴唇。卵巢为盘曲的长管状,向后伸至尾尖。卵生,卵在卵巢内排成双排或多排,卵近球形,卵壳较厚,卵排出体外后开始分裂。经 24h 形成的线虫胚体就已在卵内不断地转动,48h 后已形成线虫幼虫,在卵壳内作间隙性转动,5d 后已有活动的幼虫脱离卵壳,在水中以尾部附在皿底或碎屑上,头端不断扭曲摆动。这时幼虫体长 ($n = 1$) 0.596mm, 头钝圆,尾尖细。(图 3a—e)

雌虫各部测量如下 ($n = 6$, 单位: mm): 体长 6.572—8.618, 体宽 0.141—0.172。食管长 0.525—0.606;神经环至前端 0.212—0.252;感觉神经至前端 0.434—0.495;排泄孔至前端 0.566—0.697。阴门至前端 4.340—5.487;阴门至尾端 2.232—3.131。尾长 0.253—

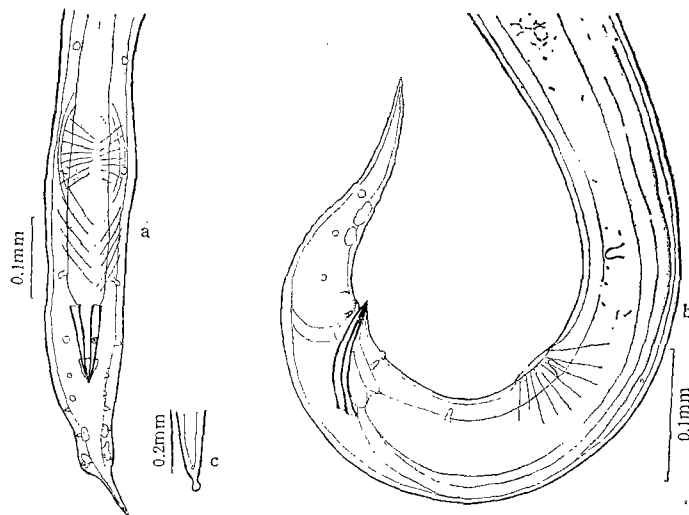


图2 鳃伍氏线虫雄虫

Fig. 2 Male of *Wuinema mysti* sp. nov.

a. 尾部腹面观; b. 尾部侧面观; c. 尾尖部放大

a. Tail, ventral view; b. Tail, lateral view; c. Tail tip (enlarged)

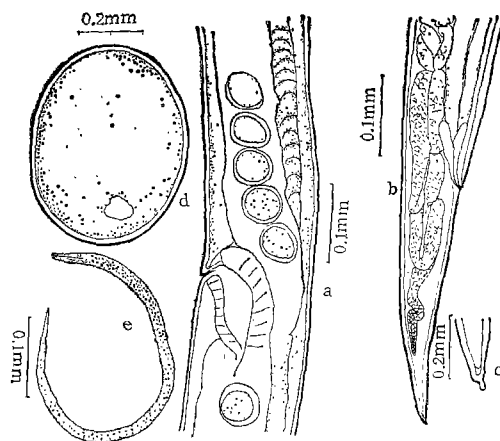


图3 鳃伍氏线虫雌虫

Fig. 3 Female of *Wuinema mysti* sp. nov.

a. 阴门; b. 尾部侧面观; c. 尾尖部放大; d. 卵; e. 幼虫

a. Vulva; b. Tail, lateral view; c. Tail tip (enlarged); d. Egg; e. Larva

0.313。卵的大小为 $0.063-0.068 \times 0.048-0.053$ 。

正模标本 1♂, 配模标本 1♀, 副模 9♂♂和 5♀♀, 保存在中国科学院水生生物研究所鱼病研究室。

讨论 1. 琴柏亚科原有 6 个属^[2,3], 其中具肛前吸盘, 头端无口囊又无唇的仅秉志属。但秉志属^[1,4]与本属又有着显著不同的特征, 主要表现在以下几方面: (1) 秉志属头端具有乳突, 而新属没有; (2) 秉志属食管由较短的肌质部和较长的腺体部构成, 而新属恰恰相反, 是由较长的肌质部及较短的腺体部构成; (3) 秉志属雄虫尾部具发达的尾翼膜, 尾乳突

具柄,新属均不具备此特征。因此,认为应建立此新属——伍氏属。

2. 由于新属的建立,则将琴柏亚科的分属检索表补充如下:

- ① 无肛前假吸盘,肛前腹壁具斜肌带.....*Paraquimperia* Baylis, 1934
具肛前假吸盘,肛前腹壁无斜肌带..... ②
- ② 具有口囊..... *Neometaquimperia* Agrawal, 1965
不具口囊..... ③
- ③ 口无唇..... ④
口围有三瓣唇..... ⑤
- ④ 具头乳突及发达的尾翼膜,尾乳突具柄..... *Pingus* Hsü, 1933
无头乳突,尾翼膜无或极不发达,尾乳突无柄..... *Wuinema* gen. nov.
- ⑤ 食道分为前肌质部和后腺质部,前后部膨大呈棒状..... *Metaquimperia* Karve, 1941
食道全为肌质性,呈圆柱形..... ⑥
- ⑥ 食道分为前后二部,具引带..... *Quimperia* Gendré, 1926
食道不分部,无引带..... *Neoquimperia* Wang et al, 1979

3. 汪溥钦 (1987)^[3]曾在福建省汀江产的长鳍鳢 (*Hemibagrus elongatus*) 中发现一种鳢后琴柏线虫 (*Metaquimperia hemibagri*), 虽然其寄主与本新种寄主较接近,但是该线虫头端具三片唇,与本新种有根本区别。

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STUDIES ON FISH PARASITIC NEMATODES OF *WUINEMA* GEN. NOV. AND *W. MYSTI* SP. NOV.

Yu Yi and Wang Guitang

(Institute of Hydrobiology, Academia Sinica, Wuhan 430072)

Abstract

A new genus, *Wuinema*, and a new species, *Wuinema mysti* (Nematoda: Quimperiidae), from Wuling Mountain Region are reported in this paper.

The general characters of the genus *Wuinema* are described as follows: Small nematodes with sharp point tails. Anterior part of the body with highly developed lateral alae. Mouth opening triangular without lips and cephalic papillae. A pair of sensory nerves in cervical position present. Excretory pore situated approximately at the level of anterior end of intestine. Oesophagus divided into anterior longer muscular portion and posterior shorter glandular portion. Male: with two spicules, equal and similar; gubernaculum present; a papilla-like glandular opening anterior to the anal; with preanal muscular sucker; without developed caudal alae; caudal papillae not pedunculated. Female: vulva located in the posterior part of the body; ovi-

parous; eggs oval or round in shape, with rather thick and smooth shells. Freshwater fish parasites.

Genotype: *Wuinma mysti* sp. nov.

Host: *Mystus macropterus*.

Locations: Stomach and anterior intestine.

Localities: Songtao (Youshui River), Guizhou Province; Cili (Lishui River), Hunan Province.

Specimens: Holotype(1♂), allotype(1♀), paratypes (9♂♂5♀♀) are deposited in the Laboratory of Fish Diseases, Institute of Hydrobiology, Academia Sinica.

Description: Whitish, small nematodes. Anterior part of the body with developed lateral alae. Head end covered with the transparent membrane. the subcutaneous tissue of head part not curved outward. Mouth opening triangular, head without lips and papillae. and amphids inconspicuous. Cylindrical oesophagus divided into three parts: anterior to nerve ring close muscular, posterior to nerve ring loose muscular, and posterior part about one-fourth of the oesophagus glandular. Anterior end of glandular oesophagus with one nucleus, and posterior end with two nuclei. Cervical portion with a pair of sensory nerves, their endings reaching to the lateral alae. Excretory pore slightly posterior to the junction of oesophagus and intestine. Both male and female tail point, with a small processus.

Male ($n = 10$, measurements in mm.): Length of body 5.797—7.526, maximum width of body 0.101—0.172. Length of oesophagus 0.535—0.596. Nerve ring 0.212—0.263, sensory nerve 0.434—0.515 and excretory pore 0.566—0.626 from anterior extremity. Developed preanal muscular sucker present. Caudal papillae without peduncle, preanal papillae 4 pairs, adanal papillae 2 pairs and postanal papillae 5 pairs, three pairs of smaller postanal papillae lateral and two pairs of bigger postanal papillae ventral. One median glandular papilla present at level of fourth pair of preanal papillae. Two spicules equal in length and similar in shape, 0.088—0.098 long. Gubernaculum present, 0.030—0.040 in length. Tail curved ventrally, 0.150—0.188 in length. Caudal alae undeveloped or absent.

Female ($n = 6$, measurements in mm.): Length of body 6.572—8.618, maximum width 0.141—0.172. Length of oesophagus 0.525—0.606. Nerve ring 0.212—0.252, sensory nerve 0.434—0.495 and excretory pore 0.566—0.697 from anterior extremity. Vulva situated in posterior part of body, 4.340—5.487 and 2.232—3.131 from anterior and posterior end respectively, anterior vulvar lip undeveloped. Ovary coiled, reaching to tail posteriorly. Uterus with most eggs arranged in two or several lines. Eggs approximately round and their shells rather thick, $0.063\text{—}0.068 \times 0.048\text{—}0.053$ in size. Tail slender, 0.253—0.313 long.

Discussion: The new genus *Wuinema*, though similar to the genus *Pingus* in some aspects(e.g. without lips), is distinctly different from the later in the following characters: without cephalic papillae; oesophagus consists of the anterior longer muscular part and the posterior shorter glandular one; without developed caudal alae, caudal papillae not pedunculated.

Key words Nematode of Quimperiidae, *Wuinema*, New genus, New species, *Wuinema mysti*