

湖北觶螺科一新属三新种*

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1979年6—7月间,我们在湖北省五峰县大山区进行肺吸虫病调查时,采到多批淡水微小螺类,经整理鉴定,发现三个新种,其中两种查到斯氏并殖吸虫尾蚴。这些新种属于觶螺科的两个属,其中一个系新属。现将新种新属描述如下。所有模式标本均保存在湖北医学院寄生虫学教研室医学贝类研究组。

小豆螺属 *Bythinella* Moquin-Tandon 1855

1. 五峰小豆螺(新种) *Bythinella wufengensis* sp. nov. (图1, 2)

形态描述 螺壳微小,细圆柱形,淡黄白色,壳质薄而透明。壳面光滑,在解剖镜下高倍放大观察仅能见到极细的生长线,有时也不明显。有 $4-4\frac{1}{2}$ 个螺层,每个螺层皆圆凸,呈阶梯状排列。各螺层的宽度增长缓慢,长度增长迅速。体螺层高大,其高度约为全长的 $\frac{2}{3}$ (66%),宽度为倒二螺层(penultimate)宽度的1.3倍。壳宽与高之比为1:1.95。壳口高与体螺层长度之比为1:2.26。壳顶矮而钝。缝合线非常明显。壳口为卵圆形,口缘完整,具有黑色框边。外唇较薄而弯圆,不外折。内唇略向外翻贴覆于体螺层上。脐孔小,呈裂缝状。螺厣角质,极薄,易碎,白色透明,为椭圆形。厣核靠底偏内,从厣核发出弧形厣纹。螺厣长0.6—0.67mm(平均0.64mm),近厣底处宽0.36—0.42mm(平均0.4mm),近厣尖处宽0.35—0.4mm(平均0.38mm)。

正模标本 壳高2mm,宽0.86mm;壳口高0.82mm,宽0.78mm。1979年7月17日采自湖北省五峰县城关镇南门坡上小溪沟。

副模标本 壳高1.82—2mm,宽0.86—0.88mm;壳口高0.7—0.82mm,宽0.68—0.78mm。采集时间、地点与正模标本相同。

内部结构 动物呈灰白色、半透明。肠管明显可见,为黄棕色细长,内充满黄棕色、梭形的粪粒,开口于外套腔之右侧。触角一对、细长,活动时可伸长三倍。眼点黑色,位于触角基部背侧。口吻粗钝,前端中部微凹。足趾活动时前端平直,略似平锹。阴茎弯曲、细长,位于颈部。齿舌带状,长0.58mm,宽0.075mm,共有74个横排,每一横排有7个齿片:中央齿片略呈梯形,上缘有9个尖齿,中间1个稍大,其下缘两侧各有2个尖齿,上下排列。侧齿片上缘有8个尖齿,内缘齿片上缘有18—24个尖齿,外缘齿片上缘有25—27个尖齿。齿舌公式: $\frac{4-1-4}{2-2}$; 3-1-4; 18—24; 25—27。

* 向选森、彭德华、孔海波三同志参加标本采集,张培喜同志摄制照片,胡鸣中同志为插图覆墨,在此一并致谢。

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栖息环境 生活在海拔 800m 高的山区小溪沟里,沟底为细砂及石块,水质清凉,终年细水长流,从不干涸。沟的两旁杂草灌木丛生,遮荫良好。小豆螺附着在小石块的底面及侧面,但以底面为多。偶在沟中一块小腐木的底面亦找到十几个小豆螺。

寄生虫 本新种为斯氏并殖吸虫 (*Paragonimus skrjabini* Chen, 1959) 的第一中间宿主,自然感染率为 0.26% (3/1120) (彭德华等, 1980)。

讨论 本新种与中国小豆螺 (*Bythinella chinensis* Liu et Zhang, 1979) 近似,但本新种为细圆柱形,个体较大,内唇上部略向外翻贴覆于体螺层上,以及齿舌公式均与后种不同。

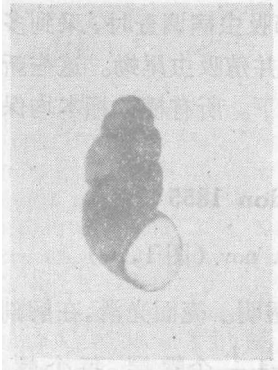


图1 五峰小豆螺(×13)

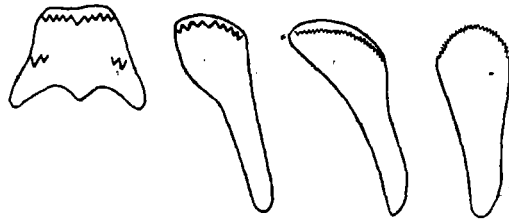


图2 五峰小豆螺的齿舌

2. 湾潭小豆螺(新种) *Bythinella wantanensis* sp. nov. (图 3, 4)

形态描述 螺壳微小,卵圆筒形、淡白色。壳质薄而透明,壳面光滑、无纵肋,在解剖镜下高倍放大观察仅能见到极细的生长线,有时也不明显。螺层 $4-4\frac{1}{2}$ 个,各螺层均圆凸,呈阶梯状排列。体螺层膨大,其高度为全长的 71%,其宽度为倒二螺层 (penultimate) 宽度的 1.45 倍。壳宽与高之比为 1:1.5。壳口高与体螺层长度之比为 1:1.68。壳顶小而钝。缝合线深陷。壳口宽卵圆形,口缘完整,具有黑色框边。外唇较薄,呈圆拱状。内唇中上部略向外翻,但不贴覆于体螺层上,在解剖镜下高倍放大观察可见内唇与体螺层二者之间有一条小缝。内唇中央无齿。脐孔小,呈裂缝状。螺厩角质,极薄,略呈长椭圆形,边缘灰白色、透明,附着点为深棕色。厩纹作放射状排列。厩长 0.65—0.84mm (平均 0.75mm),近厩底处 0.35—0.5mm (平均 0.45mm),近厩尖处宽 0.34—0.46mm (平均 0.413mm)。

正模标本 壳高 2.2mm,壳宽 1.2mm;壳口高 0.98mm,壳口宽 0.82mm。1979 年 7 月 15 日采自湖北省五峰县湾潭。

副模标本 壳高 1.9—2.3mm,宽 0.94—1.2mm;壳口高 0.97—1mm,宽 0.79—0.86 mm。采集时间、地点同正模。

内部结构 动物呈黄白色、半透明。触角一对,生活时细长而圆,末端较细而尖。死后则较粗短,比吻稍长。眼点小、黑色,位于触角基部背侧。吻粗钝,其前端中部微凹。足趾灰白色,略呈钟状 (bell-shaped)。外套缘薄而光滑。肠管粗长,明显可见,其内充满黄棕色的、短棒状的粪粒。雌雄异体,解剖 245 个螺蛳,计雄螺 72 个,雌螺 173 个,雄螺与雌螺的比例为 1:2.4。雄螺阴茎单一,无附属肢,位于颈部背侧偏右,末端弯向左边。齿舌带状,中央齿片略呈梯形,上缘有 7 个尖齿,中间 1 个最大,其下缘两侧各有 2 个尖齿,排列

在同一水平上。侧齿片上缘有 7—8 个尖齿,内缘齿片上缘有 18—22 个尖齿,外缘齿片上缘有 24—26 个尖齿。齿舌公式: $\frac{3-1-3}{2-2}$; 7-8; 18-22; 24-26。

栖息环境 生活在海拔 1150m 高的山区小溪沟,地势较平,坡度较小,水流缓慢,水质清凉。小沟两旁杂草丛生,附近有住屋。小沟底为细砂及小石块,小豆螺即附着在小石块的底面及侧面,而以底面为多。

寄生虫 本新种为斯氏并殖吸虫的第一中间宿主,自然感染率为 0.086%(3/3487)。

讨论 本新种与日本小豆螺 (*Bythinella nipponica* Mori, 1937) 相似,但本新种具有下列特点: 个体较大;壳口宽卵圆形,口缘完整,具有黑色框边;外唇薄不向外扩张,内唇中央无齿,略向外翻;齿舌公式亦有不同。

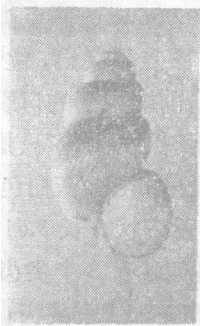


图 3 湾潭小豆螺($\times 13$)

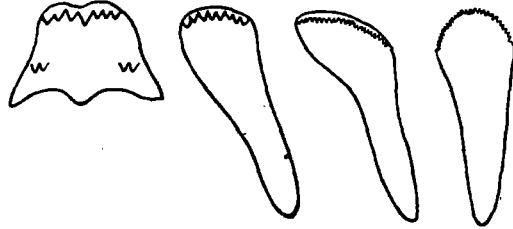


图 4 湾潭小豆螺的齿舌

伍氏螺属(新属) *Wuonchona* gen. nov.

鉴别特征 本新属的形态特征介于小豆螺属 (*Bythinella* Moquin-Tandon 1855) 与哈氏螺属 (*Halewisia* Davis 1979) 之间,但根据下列特点极易与之区别: (1)本属螺壳呈短圆锥形,壳型微小,壳质薄,表面光滑、深棕褐色而半透明; (2)壳口形状特殊,略呈卵圆形,口缘完整,外唇上方与内唇交接处形成锐角,内唇微向外翻,但不贴覆于体螺层上,也不遮盖脐孔; (3)螺唇黄褐色,薄而透明,角质,长椭圆形;唇纹细致,呈放射状;唇的最大特点是在其内缘一侧有一圈长椭圆形的粗旋纹,因此使螺唇显出一种特殊形态,唇核即位于圈内的较大一端; (4)生活标本触角细长,比吻约长三倍,而酒精固定标本,触角则粗扁,与吻等长; (5)眼点较大,但不突出,类圆形,位于触角基部稍前之背侧; (6)口吻前端中部有较深的裂口; (7)阴茎扁圆而细长,位于颈部,由右向左弯转,末端尖而弯; (8)整个软体除头足部外,全为黑色。

本新属名,以我国著名的鱼类学家伍献文教授的姓氏命名,以表敬意。

模式种 牛庄伍氏螺(新种) *Wuonchona niuzhuangensis*, sp. nov.

3. 牛庄伍氏螺(新种) *Wuonchona niuzhuangensis* sp. nov. (图 5—7)

形态描述 螺壳小而薄、半透明,外形为短圆锥形,壳面光滑,深棕褐色,具有极细的生长线,有螺层 5 个,每个螺层皆圆凸。各螺层的长度缓慢均匀增长,而宽度则迅速增长。体螺层膨大,其高度约为全长的 2/3(66%)。壳顶较尖,缝合线深陷。壳口略呈卵圆形,口缘完整。外唇上方与内唇交接处形成锐角,内唇微向外翻,但不遮盖小而明显的脐孔,也不贴覆于体螺层上,在解剖镜下高倍放大观察,可见体螺层与内唇两者之间有一条

小的裂缝。螺唇为长卵圆形的黄褐色角质薄片,能缩入壳口。唇纹细致,呈放射状,唇的最大特点是在唇的内缘一侧有一圈长椭圆型的粗旋纹,因此使螺唇显示出一种特殊形态,唇核就在圈内的较大一端。螺唇长 0.817—0.877mm (平均 0.851mm),近唇底处宽 0.387—0.404mm (平均 0.395mm),近唇尖处宽 0.275—0.37mm (平均 0.335mm)。

正模标本 壳高 2.3mm,宽 1.1mm;壳口高 0.69mm,宽 0.87mm。1979 年 7 月 14 日采自湖北省五峰县牛庄。

副模标本 壳高 2.2—2.4mm,宽 1—1.2mm;壳口高 0.69—0.84mm,宽 0.86—0.89mm。采集时间、地点与正模标本同。

内部结构 动物头足部从螺壳取出后为黄白色,螺壳则为腊黄色,从外套缘至肝脏的全部背面均为黑色。脑神经节粗大,略似等腰三角形。触角一对,生活时可伸得很细长,死后粗扁,与吻等长(0.3mm)。触角最宽处(即眼点位置)为 0.086mm。眼点类圆形,黑色,大小为 0.0384 × 0.03mm。两眼点间距离较宽为 0.455mm。眼点不突出,位于触角基部稍前之背侧。足蹠长大于宽,前端宽平,后端钝圆。口吻粗短,前端中部的口裂较深,把吻分为左右大小相等的两部分。雄螺较雌螺少,解剖 350 只螺蛳,仅发现 98 只雄螺,其余 252 只均为雌螺。雄与雌的比例为 1:2.57。雄螺的阴茎单一,无附属肢、灰白色,肌质透明,扁圆细长,盘曲于颈部背侧,由右向左弯曲,末端尖而弯。齿舌带状,长 3.612mm,宽 0.413mm。中央齿片上缘有 7 个尖齿,中间 1 个最大,其下缘两侧各有 3 个尖齿;侧齿片上缘有 6 个尖齿,内缘齿片上缘有 9—10 个尖齿,外缘齿片有 12—13 个尖齿。齿舌公式: $\frac{3-1-3}{3-3}; 2-1-3; 9-10; 12-13$ 。



图 5 牛庄伍氏螺($\times 13$)

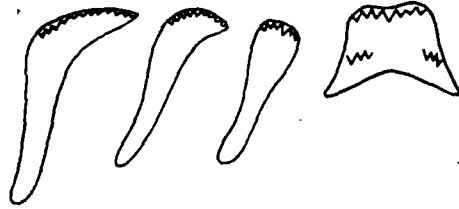


图 6 牛庄伍氏螺的齿舌

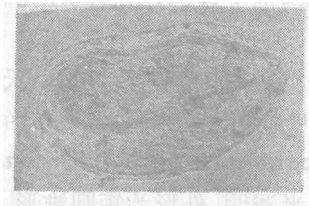


图 7 牛庄伍氏螺的螺唇

栖息环境 生活在海拔 900m 高的山区小溪沟,沟的两旁草木丛生,沟底为砂子及石块,水流不急,水质清凉,牛庄伍氏螺即附着在小石块的底面。

寄生虫 为当地斯氏并殖吸虫的怀疑宿主,但有待证实。

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A NEW GENUS AND THREE NEW SPECIES OF THE FAMILY HYDROBIIDAE (GASTROPODA: PROSOBRANCHIA) FROM HUBEI PROVINCE, CHINA

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ABSTRACT

A survey of paragonimiasis in the mountain region of Wufeng County, Hubei Province, was carried out during June to July, 1979. Many lots of different kinds of minute freshwater snails were collected and studied. Among these specimens, three new species have been identified. Two of them are found as the first intermediate hosts of the lung fluke *Paragonimus skrjabini* Chen, 1959. The new minute snails belong to two genera of the family Hydrobiidae, namely *Bythinella* and *Wuconchona*, the latter genus is new to science. The diagnostic features of these new taxa are given in this report. All these type specimens are deposited in the Department of Parasitology, Hubei Medical College, Wuchang, China.

Bythinella wufengensis sp. nov. (Figs. 1—2)

Diagnosis Shell minute, dull white, slenderly-cylindrical, thin and translucent. Shell surface smooth, with very weak growth lines. Whorls 4—4½, convex, scalariform, increase rapidly in height, but slowly in breadth; last whorl rather large, about two-thirds the length of the shell. Apex blunt. Suture well defined. Aperture round ovate, continuous, with a black margin. Outer lip thin, roundly curved. Inner lip slightly expanded outward, and attached to the body whorl. Umbilicus narrow, chink-like. Operculum elliptical, horny, thin, white and translucent, with radial growth lines. In the radula the central tooth has

the formula $\frac{4-1-4}{2-2}$ There are 8 denticles on the lateral tooth, of which the fourth is larger than the rest. The inner marginal has 18—24 denticles, the outer 25—27.

Holotype Length 2 mm, breadth 0.86 mm; length of aperture 0.82 mm, breadth of aperture 0.78 mm; collected on July 17, 1979 at the gully of mountain slope just outside the south gate of Wufeng County, Hubei Province.

Paratypes Length 1.82—2 mm, breadth 0.86—0.88 mm; length of aperture 0.70—0.82 mm; breadth of aperture 0.68—0.78 mm; collected with the holotype.

Parasite *Paragonimus skrjabini* Chen, 1959.

Discussion The present new species is closely related to *Bythinella chinensis* Liu and Zhang 1979, but differs from the latter by its slenderly-cylindrical shape, much larger size, inner lip somewhat reflected and attached to the body whorl, and by its radula formula: $\frac{4-1-4}{2-2}$; 3—1—4; 18—24; 25—27.

***Bythinella wantanensis* sp. nov.** (Figs. 3—4)

Diagnosis Shell minute, thin, cylindric ovate and semitransparently white. Shell surface rather smooth, with very weak growth lines. Whorls 4—4½, each of which well inflated and scalariform, body whorl very large, occupying about 71% of the length of the shell. Apex very obtuse. Suture well impressed. Aperture rather large, widely ovate and peristome continuous, with a dark edge. Outer lip thin, quite regularly arcuated. Inner lip slightly expanded outward, without tooth. Umbilicus narrow, slit-like. Operculum elliptical, thin, corneous, translucent, with radial growth lines. In the radula the central tooth has 7 denticles, of which the median is the strongest. There are 4 basals, that is, the formula is $\frac{3-1-3}{2-2}$. The lateral tooth is elongated and has 7—8 denticles. The inner marginal has 18—22 denticles and the outer 24—26.

Holotype Length 2.2 mm, breadth 1.2 mm; length of aperture 0.98 mm, breadth of aperture 0.82 mm; collected on July 15, 1979 at Wantan, Wufeng, Hubei Province.

Paratypes Length 1.9—2.3 mm, breadth 0.94—1.2 mm; length of aperture 0.97—1 mm, breadth of aperture 0.79—0.86 mm, collected with the holotype.

Parasite *Paragonimus skrjabini* Chen, 1959.

Discussion The new species is similar to *Bythinella nipponica* Mori, 1937 distinguished by the following features: much larger size; aperture widely ovate, peristome continuous, with a dark edge; outer lip not extended outward; inner lip slightly reflected, without tooth; and the radula formula: $\frac{3-1-3}{2-2}$; 7—8; 18—22; 24—26.

***Wuconchona* gen. nov.**

Diagnosis This new genus is near to *Bythinella* Moquin-Tandon 1855 and *Halewisia* Davis 1979, but differs from both in the following characteristics: (1) The shell is short conical, minute, thin, smooth, subtransparent, and chestnut brown; (2) The aperture has a peculiar form, its shape is somewhat ovate, peristome continuous, outer margin with an acute angle at the upper, inner margin slightly reflected outward but not attached to the body whorl; (3) The operculum is corneous, thin, semitransparent, elongate ovate, yellowish-brown, with radial growth lines, its salient feature is with an elongate ovate ring of spiral lines near the inner margin; the nucleus excentrically situated on the inner side of

the ring; (4) The tentacles are long and slender in the living specimens but thick and flat in the alcohol-fixed specimens, its length is equal to snout; (5) The eye-spots are larger, ovate but not protruding, and situated in a little front of the base of the back of tentacles; (6) The snout of animal is blunt and there is a deep split at the middle part of snout; (7) The verge is flat and rounded, long and thin, and is situated on the neck, turning it from the right to the left, and its end is pointed and curved; (8) With the exception of head and foot, all soft parts is covered with dark color.

The new genus is named in honor of Prof. Hsien-wen Wu, the famous ichthyologist, member of the Division of Biological Sciences, Academia Sinica and the director of the Institute of Hydrobiology, Academia Sinica.

Type species *Wuconchona niuzhuangensis* Kang, sp. nov.

Wuconchona niuzhuangensis sp. nov. (Figs. 5—7)

Diagnosis Shell minute, thin, translucent, and short conical. Surface smooth, chestnut brown, with very fine growth lines. Whorls five in number, each of which somewhat convex, increase rapidly in breadth, but slowly in height; body whorl well inflated, occupying about 2/3 of the shell length. Apex acute. Suture distinctly constricted. Aperture ovate, peristome continuous. Outer lip thin, simple, with an acute angle at the upper. Inner lip slightly expanded outward, but not attached to the body whorl, and under high magnification a rift may be seen between them. Umbilicus narrow. Operculum elongate ovate, yellowish-brown, corneous, thin, semitransparent, with very fine radial growth lines; its outstanding characteristic is with an elongate ovate ring of spiral lines near the inner margin; the nucleus excentrically situated on the inner side of the ring near the broader end; the size of operculum is 0.851 mm by 0.395 mm; it is capable of retraction within the mouth of the shell. With the exception of head and foot, all soft parts is of a dark colour. The tentacles are long and slender in the living specimens but thick and flat in the alcoholic specimens and its length is equal to proboscis. There is a black eye-spot, which is larger and ovate but not projecting, situated at a little front of the base of the back of each tentacle. The proboscis which extends beyond the foot when the animal creeps forward is divided into two parts by a deep split, each part is equal in size. The verge is simple, grayish white, transparent, flat, rounded, long and slender, and is twined on the back of neck, turning it from the right to the left, its end is pointed and curved. The radular band is 3.612 mm in length and 0.413 mm in breadth, the central tooth of the radula has the formula: $\frac{3-1-3}{3-3}$. The lateral

tooth has 6 denticles of which the third is larger than the rest. The inner marginal has 9—10 denticles and the outer 12—13.

Holotype Length 2.3 mm, breadth 1.1 mm; length of aperture 0.69 mm, breadth of aperture 0.87 mm; collected on July 14, 1979 at Niuzhuang, Wufeng, Hubei Province.

Paratypes Length 2.2—2.4 mm, breadth 1—1.2 mm; length of aperture 0.69—0.84 mm, breadth of aperture 0.86—0.89 mm; collected with the holotype.