

独角犀的线虫—新属新种

(线虫纲:圆线科,球首亚科)

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1981年10月,我们从北京动物园一头死于肠炎的、原产于尼泊尔的独角犀(*Rhinocera unicornis*)小肠中采获大量圆线科线虫,在已检查的1090条成虫中,计有雄虫288条,雌虫802条。经鉴定,我们认为系一新属新种。量度单位:毫米。

犀犀线虫属,新属 *Rhinocerotonema* gen. nov.

定义 隶属球首亚科 *Globocephalinae*; 口孔指向前背侧;口囊发达,呈圆形或近似圆形;口孔边缘上无内外叶冠,亦无切板或切齿。口囊底部有一对亚背齿和一对亚腹齿;有一个发达的背锥,伸达口囊中部。雄虫交合伞的腹肋与侧肋起始于同一主干;腹腹肋与侧腹肋紧贴并行;侧肋同起于一个总干,中后侧肋并行,前侧肋与中侧肋间有一分岐角。外背侧的配置不对称,左外背侧先从主干分出,随后主干略向右侧弯曲,并分出右外背肋,接着主干下行分为两支,每支又分为三小支。生殖锥呈指状。交合刺一对,细长。无引器。雌虫阴门位于体前1/3处。

犀犀线虫,新属新种 *Rhinocerotonema rhinocerotis* gen. et sp. nov. (图1—9)

虫体白色,活虫常弯曲成弓形,前端弯向背侧。体表有细横纹。口囊发达,呈球形或亚球形;口孔开向前背侧。口囊深0.095—0.135,宽0.115—0.146;口孔边缘上无切板或切齿。口囊内有一发达的背锥,伸达口囊中部稍前,背食道腺管贯穿其中。口囊底部有一对较大的亚腹齿和一对稍小的亚背齿。食道呈棒状,长0.64—0.83,前端宽0.062—0.096,后膨大部宽0.085—0.155。颈乳突短而粗,位于食道膨大部份体表两侧,距头端0.48—0.66。神经环位于食道中央部稍前,距头端0.33—0.40(图1—3)。

雄虫(10条):体长7.5—8.3,体中部最宽,宽0.27—0.35。头部宽0.14—0.21;交合伞前的体宽为0.125—0.170。交合伞由两个较大的侧叶和一个较小的背叶组成。有一对短而粗的伞前乳突。交合伞侧叶长0.32—0.60(自侧肋基部至伞缘)。生殖锥极为发达,呈指状,几与交合伞侧叶等长。腹肋与侧肋起始于同一主干。腹腹肋与侧腹肋紧贴并行,末端伸抵伞缘。三根侧肋起始于同一主干,前侧肋细,远端与中后侧肋成相反的方向分开;中侧与后侧肋较粗,并行伸达伞缘。背肋的配置稍不对称,左外背肋先从主干(距主

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狄伯雄、高齐瑜同志赠送解剖病料,汪明同志协助进行电镜扫描标本的制作,一并致以谢意。

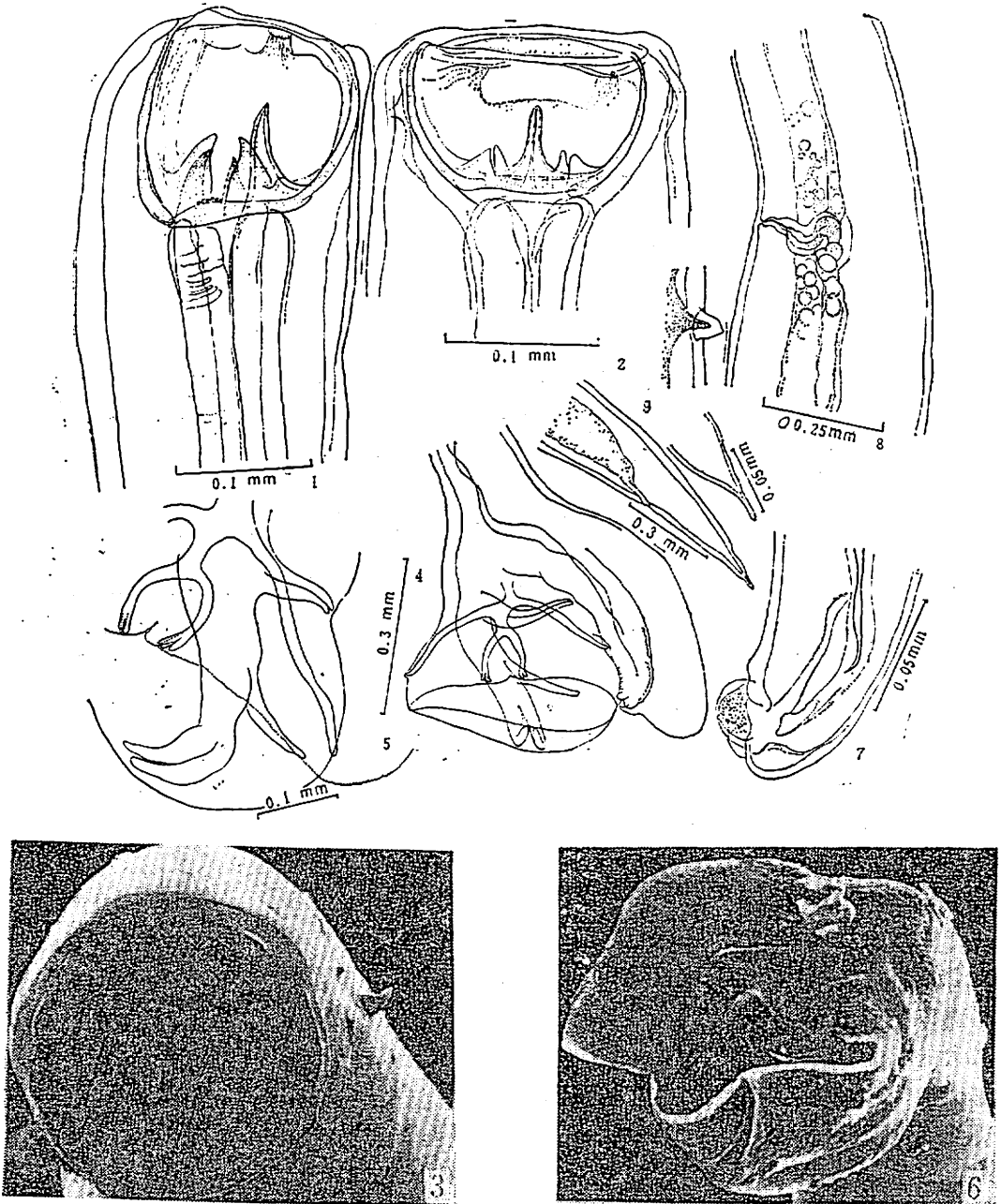


图1—9 犀犀线虫,新属新种 *Rhinocerotonema rhinocerotis* gen. et sp.

- 1. 前端侧面 (anterior extremity, lateral view.)
- 2. 前端背面与颈乳突的构造 (anterior extremity, dorsal view, and the structure of deirid.)
- 3. 头顶面 (扫描电镜显示的开口) (scanning electron micrograph of en face view, showing the oral opening)
- 4. 雄虫交合伞腹面观 (male bursa, ventral view.)
- 5. 雄虫交合伞背叶 (male bursa, dorsal lobe, showing the structure of dorsal ray)
- 6. 交合伞 (扫描电镜显示的交合伞背叶) (scanning electron micrograph of bursa, showing dorsal lobe)
- 7. 雄虫生殖锥侧面观 (显示生殖锥的后端和交合刺) (Genital cone, lateral view, showing the posterior extremity of genital cone and the spicule)
- 8. 阴门区侧面观 (vulva region, lateral view.)
- 9. 雌虫尾部侧面观 (posterior extremity of female, lateral view)

干起始部约 0.04 处)分出,随后主干略向右侧弯曲,然后分出右外背肋,接着主干下行分为两支,每支的末端分为三小支伸抵伞缘。交合刺一对,细长,末端尖锐,长 1.29—1.61。无引器(图 4—7)。

雌虫(10 条): 体长 9.6—12, 体中部最宽,宽 0.43—0.58。头部宽 0.158—0.210。肛门部体宽 0.105—0.150。阴门横列,无明显的侧唇,位于体前 1/3 处附近,距头端约 2.88—3.34。阴道短,横向连子宫。肛门距尾端 0.35—0.42,肛门之后,尾部收缩变尖(图 8—9)。

宿主 独角犀 *Rhinoceros unicornis*

寄生部位: 小肠

采集地点: 北京动物园(原产地为尼泊尔)。

正模♂,配模♀,副模 12♂, 10♀。模式标本保存于北京农业大学兽医学院寄生虫学教研室。

讨 论

本新属口囊发达,口孔开向前背侧,内有牙齿。口孔边缘上无外叶冠和内叶冠,亦无切割器官。外背肋与背肋起始于同一主干。根据 S. Yamaguti, 1961 的分类系统,本新属应隶属于球首亚科 *Globocephalinae*。本新属与球首亚科中现有的 *Characostomum*, *Acheilostoma*, *Globocephalus* 和 *Globocephaloides* 4 个属相比较时,最明显的区别是新属雄虫的外背肋排列不对称,已知四个属都没有这一特点。除此以外,还有一些其它的重要区别。*Characostomum* 的口囊无任何齿样构造,新种则有背锥和两对小齿,球首属 *Globocephalus* 有明显的背嵴但无背锥,新种无背嵴,但有背锥;类球首属 *Globocephaloides* 的口囊有四个柱状物支持着,为一奇特的构造,本新种则无。从口囊构造看,本新种与 *Acheilostoma* 比较近似,但仍有明显不同,主要是 *Acheilostoma* 属的定义为口领 (mouth collar) 发达,非常明显(从模式种的原图看,口领后缘几达口囊中部),背锥两侧各连一尖齿,另有两对亚腹侧小齿(矛形小齿),新种无口领,口囊内仅有一对亚腹齿和一对亚背齿。据此作者认为应建立一新属 *Rhinocerotonema*, 现时包括一个新种 *R. rhinocerotis*。鉴于新属的某些特征已超越球首亚科的原有定义,故应对 *Globocephalinae* 亚科的定义及亚科中属的检索表作如下修订:

球首亚科 *Globocephalinae* Travassos et Vogelsang, 1932

定义——圆线科 *Strongylidae*: 口孔指向前背侧,或稍偏向前背侧或前腹侧。无外叶冠和内叶冠。口囊底部有齿或角质刺。雄虫交合伞的外背肋与背肋起始于同一主干。外背肋的配置对称或不对称。

球首亚科 *Globocephalinae* 各属的检索表

- | | |
|---|------------------------|
| 1. 外背肋排列不对称..... | <i>Rhinocerotonema</i> |
| 外背肋排列对称..... | 2 |
| 2. 口囊内无齿或矛状构造..... | <i>Characostomum</i> |
| 口囊内有齿或矛状构造..... | 3 |
| 3. 口领发达,口囊内背锥两侧各连一尖齿,另有一对亚背齿和一对亚腹齿..... | <i>Acheilostoma</i> |
| 无口领,口囊内有一个背齿或成对的亚腹齿..... | 4 |

4. 口囊由 4 个柱状体支持着,其底部有一个背齿;两根腹肋分开,外背肋起始于背肋之基部 *Globocephaloides*
 口囊无上述的 4 个柱状体,其底部有一对亚腹齿;两根腹肋远端分开,外背肋起始于背肋主干部 *Globocephalus*
 (参照 Yamaguti, 1961 加以修订)。

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RHINOCEROTONEMA RHINOCEROTIS GEN. ET SP. NOV.
FROM THE RHINOCEROS UNICORNIS IN
BEIJING ZOO
 (NEMATODA, STONGYLIDAE: GLOBOCEPHALINAE)

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In 1981, a One-horned rhino (*Rhinoceros unicornis*) from Beijing Zoo died of a bad haemorrhagic enteritis and necropsied for helminth parasites. Among the nematodes collected from the small intestine there were more than 1,000 strongylid specimens, which seemed to belong to one of the genera of the subfamily Globocephalinae by the subglobular buccal capsule and the absence of leafcrowns and cutting organs on the ventral margin of the oral opening. But by careful examination it differed from all the members of this subfamily by the asymmetrical arrangement of the external dorsal rays of the male bursa. The reason of proposition of the new genus and new species that it should be so is clear.

***Rhinocertonema* gen. nov.**

Generic diagnosis—Strongylidae, Globocephalinae: Mouth directed anterodorsally; without leafcrowns; buccal capsule well developed, subglobular, without cutting organs at its ventral margin. There is a well developed dorsal cone in the buccal capsule, it contains the gutter of the dorsal oesophageal gland. Also present in the depth of the buccal capsule are one pair of subventral teeth and one pair of subdorsal teeth.

Male: bursal formula—The ventral and lateral rays arise from a common trunk; ventral rays parallel; laterals arise from a common trunk, medio- and posterolaterals close together; there is a distinct divergence between the antero- and mediolaterals. The arrangement of the external dorsal rays is asymmetrical. The genital cone is long and digitiform. Spicules long and filiform. Gubernaculum absent.

Female: Vulva lies at the anterior third of the body, tail conical. Parasites of the Rhinoceros.

Genotype: *Rhinocerotonema rhinocerotis* sp. nov.

***Rhinocerotonema rhinocerotis* gen. et sp. nov.** (figs. 1—9)

Diagnosis (based on 20 out of 1090 examined): Mouth directed anterioporsally; without leaf-erown; buccal capsule well developed, subglobular, without cutting organs at its ventral margin. The length of the buccal capsule varies from 0.095—0.135 mm. Its greatest width varies from 0.115—0.146 mm. There is a well developed dorsal cone in the buccal capsule, ends with a sharp point at the level of the anterior 1/3 of the buccal capsule. It contains the gutter of the dorsal oesophageal gland. Also present in the depth of the buccal capsule are one pair of larger subventral teeth and one pair of smaller subdorsal teeth. Oesophagus club-shaped, 0.64—0.83 mm. long, with maximum width 0.085—0.155 mm. Deirids short and stout, lie at the level of the middle portion of the posterior swelling of the oesophagus. The nerve ring is situated a short distance anterior to the middle of the oesophagus, and the distance from the head end to the nerve ring varies from 0.33—0.50 mm.

10 males measure 7.5—8.3 mm. in length and 0.27—0.35 mm. in greatest breadth of the body. The lateral lobes of the bursa are long. The lateral lobe varies from 0.42—0.62 mm. in length measured from the base of the lateral ray to the margin of the lateral lobe. The ventral and lateral rays arise from a common trunk. The ventral rays are parallel and lie close together. The laterals arise from a common trunk, and the medio and postero-laterals lie close together. There is a distinct divergence between the antero- and medio-laterals. The general appearance of the bursa and the arrangement of the rays are similar to that of the genus *Bunostomum* in many ways. The arrangement of the external dorsal rays is asymmetrical. The dorsal main stem gives off the left external dorsal ray a short distance posterior to its origin, and then the main stem bends to the right, a short distance posterior to the origin of the left external dorsal ray, and gives rise to the right external dorsal ray. The dorsal main stem is cleft near its middle into two branches which have three short digitations.

The genital cone is well developed, long and digitiform. The spicules are long and thin, with sharp points, 1.29—1.61 mm. long. Gubernaculum absent.

Ten females measure 9.6—12.0 mm. in length and 0.43—0.58 mm. in greatest breadth of the body. The anal opening is a transverse slit. The tail is 0.35—0.42 mm. long. The vulva is a small transverse opening. The distance from the vulva to the head end varies from 2.88—3.34 mm.

Host: *Rhinoceros unicornis*.

Location: Large intestine.

Holotype: BAUV Helm. Coll. No. 1981—5, ♂.

Allotype; BAUV Helm. Coll. No. 1981—6, ♀.

Paratypes: BAUV Helm. Coll. No. 1981—7, 12♂, 10♀, Remarks.

Rhinocerotonema rhinocerotis sp. nov. is the type and only species of the new genus *Rhinocerotonema*. It differs from all the species of the subfamily Globocephalinae essentially in the following respects: (1) the structure of the male bursa and the unusual arrangement of the dorsal ray; (2) unusual shape of the genital cone; (3) the structure of the head.