

中国始新世恐角兽类的新资料

周明镇 童永生

(中国科学院古脊椎动物与古人类研究所)

恐角兽类(Dinocerata)是一类绝灭的古有蹄类,它们生存时代限于古新世晚期至始新世晚期。在很长的一段时期内,古生物学者认为这类动物的分布限于北美洲。后来,在我国(内蒙)的上始新统和蒙古人民共和国的上古新统和下始新统也找到这一类动物化石;不久前,在新疆吐鲁番盆地的古新统中也发现了这一类化石。在本文中,我们记述了最近在我国山东、河南和江西的始新统中新采集到的一些这类动物的化石。虽然只有一些零星的牙齿,但从已有的证据看来,无论在地理上或地层上,恐角兽类的化石在我国分布都较广,并且包括了各个主要类型和发展阶段的代表。所以本文记述的一些标本,虽然较为零碎,却为进一步了解恐角兽类的历史提供了有意义的资料。

标本记述

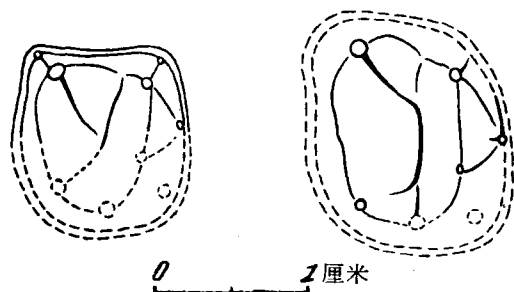
?Probathyopsis sinyüensis sp. nov.

正型标本: 一个破碎的右上颚骨的一段,附有 M^1 和 M^2 。古脊椎动物与古人类研究所编号: V.2666。

地点: 江西省新喻市姚墟人民公社宁家山。

层位: 新喻组,下始新统。

种的特征: 一种个体较小的恐角兽。 M^{1-2} 的前尖和后尖间有较弱的外脊连结;前尖



? *probathyopsis sinyüensis* sp. nov. 的 M^1 和 M^2 的复原图, $\times 2$ 。

的内侧有较发育的纵脊伸向齿盆的中心。 M^1 具有前附尖;在后尖的后方齿带附近有一刺状小尖,从后尖伸出一小脊与之连结。 M^2 的原小尖发育,使二横脊近于平行,呈U形;后脊上的后小尖较接近原尖;在后脊的后侧面上,从后小尖向后伸出的纵脊斜交牙齿的长轴,和后尖后方的纵脊与后缘齿带连结形成一个小的“凹坑”。

描述: 标本原来是一个破碎的上颚骨,上面附有 M^{1-2} , M^1 已完全长出,而 M^2

还没有完全长出。由于 M^1 仅保存靠唇面的一半,为了便于观察,破坏了上颚骨,取出 M^2 。

两个上臼齿都不很完整,难以测出确实的大小。从U形脊大小来看,个体大小近于北美早始新世的一个种 *Probathyopsis successor*。

右 M^1 : 只保存唇面的一半。后尖明显,有较低的外脊和前尖相连。前尖比后尖高而

大;內側有一較強縱脊伸向齿盆的中心。前附尖存在,弱,較后附尖发育。靠近唇面部分的前后橫脊近于平行。后尖的后方齿带附近有一突出的刺状小尖,和后尖之間有一不明显的縱脊連結。这个刺状小尖从它的大小、位置及与后尖有縱脊連結来看,不可能是次尖。保存的后緣和外緣的部分齿带弱,但連續。

右 M^2 : 原尖与四周的齿带已几乎完全破坏。前尖和后尖的特征同 M^1 。前附尖不存在。原小尖較发育,使前脊近于平行后脊,形成U形,和 *P. successor* 的齿冠情况相似,而不同于 *Prodinoceras* 和 *Probathyopsis praecursor*, 后两者的橫脊成V形;原小尖和前尖之間的橫脊上有一小突起。后小尖靠近原尖;有一斜交于牙齿的长軸的縱脊向后伸出;并和后尖后方的縱脊与后緣齿带相接,在后脊后側方围成一小的“凹坑”。

比較和討論: 从上面描述中,可看出新喻种的主要特征:(1) M^{1-2} 的前尖內側有一較強的縱脊,伸向齿盆的中心;(2) M^1 后尖的后方齿带附近有一刺状小尖;(3) M^2 的后小尖靠近原尖;从它向后伸出的縱脊和牙齿的长軸斜交;后小尖的縱脊和后尖后方的縱脊及齿带围成一“凹坑”。这些特征在其他已知的恐角兽中不存在或不明显。

在形态上,新喻标本和北美早始新世的 *P. successor* 的形态最为相近。两者 M^2 的原小尖較发育,二橫脊近于平行,形成U形; M^{1-2} 的后脊較复杂; M^{1-2} 的前尖和后尖之間都有外脊相連;大小相近。二者的区别是(1)新喻种 M^1 上有微弱的前附尖存在,而 *P. successor* 的 M^1 上不存在;(2)新喻种 M^{1-2} 的外脊比 *P. successor* 的外脊較发育等等。

周明鎮(1959年)曾提到出产? *P. sinyuensis* 的新喻組的时代不超出中始新世。从新发现恐角兽和共生的其他化石(*Coryphodon* sp. 等)的性质看来,新喻組的时代可能为早始新世。

cf. *Uintatherium* sp.

材料有不完整的右 M^3 一个和上犬齿二个。采于山东新泰县西西周的官庄統中。古脊椎动物与古人类研究所編号: V. 2667。

右 M^3 的后內角已损坏,齿冠釉质层已部分脱落,V形脊还相当清楚。前尖和后尖已完全分开;前后緣齿带发育。牙齿的基本构造和大小都可和北美中、晚始新世 *Uintatherium-Eobasileus* 类的大型恐角兽类的相当的牙齿相比較。

上犬齿发育成獠牙。牙齿的內外側面扁平、前后延长,因此橫切面呈长椭圆形。雄性个体的上犬齿比雌性个体的上犬齿更为强大,而且弯曲。(♂上犬齿前后长: 66毫米,内外寬: 31毫米;♀上犬齿前后长: 39毫米,内外寬28.5毫米)。

从臼齿和上犬齿的构造和大小来看,新泰标本显然属于北美的 *Uintatherium* 等一类的大型恐角兽。結合它与 *Hyrachus* spp. *Coryphodon flerowi* 等化石共生的情况,时代似应为中始新世。

? *Gobiatherium* sp.

仅有一个右上頰齿。古脊椎动物与古人类研究所編号: V. 2668。标本采自河南省浙川县李官桥盆地的玉皇頂組的淡水灰岩中部。化石地点隶属于湖北省均县賈家寨南五里的指甲坡。

标本只保存 V 形脊部分, 未經磨蝕。上頰齒的后脊平直; 原小尖和原尖之間的脊相当发育; 前尖和后尖已完全分开。李官桥标本与內蒙晚始新世的 *Gobiatherium* 有不少相似之点: (1) 后脊較简单; (2) 前尖和后尖已完全分开; (3) 原尖和原尖之間的脊相当发育(参照 Wheeler, 1961 年; 图版 14, 图 1)。但李官桥标本个体較小, 只有 *Gobiatherium* 的一半。大小和后脊平直(后尖、后小尖和原尖几乎成一直綫)的情况和蒙古人民共和国下始新統中 *Mongotherium* 的性質相似。但 *Mongotherium* 的前后尖沒有完全分开, 后小尖发育。李官桥标本与其他的小型恐角兽比較, 主要区别于前后尖已完全分开。

它的层位在出产伊尔丁曼哈哺乳动物羣的核桃园淡水泥灰岩之下。因此, 时代可能早于晚始新世。

由于只有一个牙齿, 浙川这种恐角兽的性質还很不清楚, 但从这个牙齿的一些特征看来, 的确和 *Gobiatherium* 很相似。关于 *Gobiatherium* 的系統关系目前还不清楚, 但出現的地理和层位情况, 說明它可能是从亚洲某一类早期的小型恐角兽分出的一个特化的分枝。从这个化石提供的綫索看来, 河南浙川的一些始新世化石地点值得作进一步的調查和采集。

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从以上初步記述的三种化石表明, 亚洲(主要是我国和蒙古人民共和国)古新世晚期和始新世的恐角兽类虽然目前材料不多, 但所代表的种类很丰富, 已包括了所有主要类型的代表, 并且分布到华南地区。

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NOTES ON SOME NEW UINTATHERE MATERIALS OF CHINA

CHOW MIN-CHEN TUNG YUNG-SHENG

(*Institute of Vertebrate Palaeontology and Palaeoanthropology, Academia Sinica*)

(Summary)

Outside of North America the occurrence of fossils of uintathere was for a long time known only in a few instances in the Mongolian region. Recently some new materials have been acquired from several widely separated localities in China. One of them had already been described by the senior writer (Chow, 1959), and the remaining ones are recorded in the present note.

Only a few specimens, all being isolated teeth and rather fragmentarily preserved, are available. But, these fossils are of great interest because they are from three different Eocene levels in South and eastern China and represent three quite distinct groups of the uintatheres as are briefly described in the following.

?*Probathyopsis sinyuensis* sp. nov.

Type: An upper jaw fragment with partly broken unworn M^{1-2} . (IVPP: 2666).

Locality: Ninchiashan, Sinyu, Kiangsi Province.

Horizon: Sinyu formation, probably lower Eocene. The specimen is found adhering to a lower jaw of coryphodont.

Diagnosis: A small uintathere with *Probathyopsis*-like molars and comparable to *P. successor* in general molar structure and in size. Paracone and metacone of M^1 and M^2 partially joined labially to form an incomplete ectoloph; paracone with a prominent ridge extending into the tooth basin; a small parastyle on M^1 ; two crests, one from the metacone and other from behind the metaloph, extending downwards to meet each other and form a small pit-like depression with a small cusplet rising from the cingular shelf.

The specimen from Sinyu formation is evidently a new form of early uintathere which seems to show nearest affinity to the genus *Probathyopsis* in molar structure. The structure of molars differs from those of *Prodinoceras* in having more fully developed transverse lophs, deeper tooth basin, and broader posterior cingular shelf with accessory cusplets and ridges flanking the metaloph.

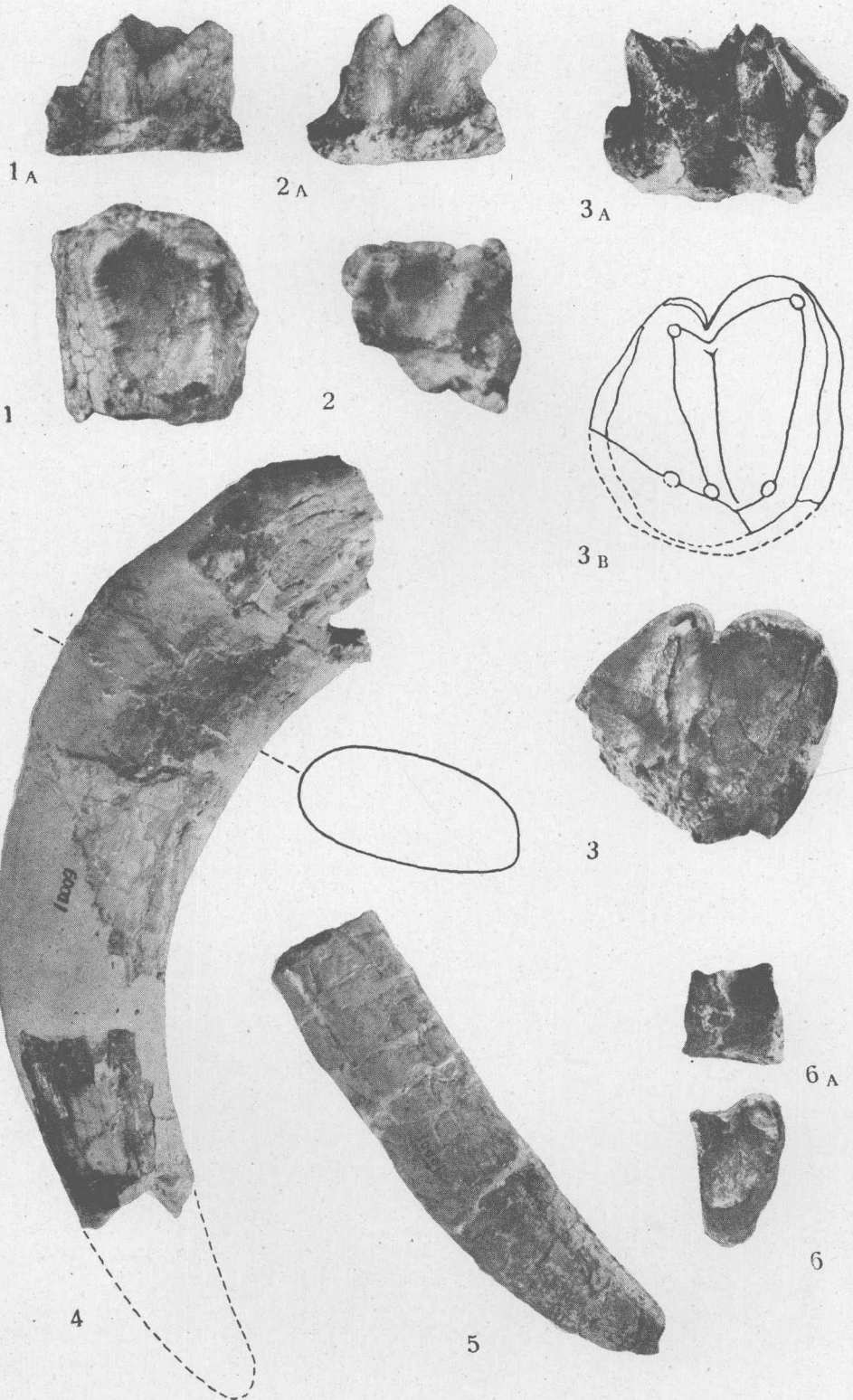
The age of the fossil bearing beds is not yet certain, but was formerly thought to be middle Eocene (Chow, 1959). From the few fossils including *Anosteira*, *Coryphodon* and characters of the here described species, it is considered now by the present writers as early Eocene.

cf. *Uintatherium* sp.

Three isolated teeth, including an incomplete right M^3 and two canines, are referred to this species. They were found at Cicizhou, Sintai District, in central Shantung, together with fossils of *Hyrachus* spp. and *Coryphodon flerowi*. The last upper molar as is shown by the photo and restoration (Pl. 1) is typical of the uintatheres of *Uinta-*

图 版 說 明

- 1, 1A. ? *Probathyopsis sinyuensis* sp. nov. 右 M^3 , $\times 1/1$ V. 2666。
1—冠面視, 1A—外側視。
- 2, 2A. ? *Probathyopsis sinyuensis* sp. nov. 右 M^1 , $\times 1/1$ V. 2666。
2—冠面視, 2A—外側視。
- 3, 3A, 3B. cf. *Uintatherium* sp. 右 M^3 , $\times 1/1$ V. 2667。
3—冠面視, 3A—外側視, 3B—冠面复原图。
4. cf. *Uintatherium* sp. ♂左上犬齿 $\times 1/1$ V. 2667。
5. cf. *Uintatherium* sp. ♂左上犬齿 $\times 1/1$ V. 2667。
- 6, 6A. ? *Gobiatherium* sp. 右上頰齿 V. 2668。
6—冠面視, 6A—外側視。



therium-Eobasileus group (Subfamily Uintatheriinae of the Wheeler, 1961; p. 961). The specimen has an anteroposterior diameter of 38 mm. and is comparatively smaller.

One of the upper canine, probably of a male individual, is a long formidable tusk, laterally flattened and with an elongated oval cross section. Its diameters near the base are 66 and 31 mm. It is identical with those on the skull of *Uintatherium anceps* (ref. *op. cite*, USNM 18600.) in general shape and size. The other specimen tentatively referred to the same species is one which is much inferior in size and may represent that of a female individual.

?*Gobiatherium* sp.

This species is represented by a right premolar or first molar collected by the junior writer from a freshwater limestone bed at Likwanchiao, Sichuan, Honan. Late Eocene mammalian fossils with definite Irudin Manha affinity occur in the overlying beds. The age of the beds yielding the uintathere tooth is not certain. It may belong to an earlier stage. The tooth, the cingular shelves of which were gone, is of small size (14 × 20 mm.) and quite simple in structure. It consists of two fully developed lophs connected lingually. The posterior crest is nearly straight. The metaconule is only indistinctly shown. Pa and Me are separated from each other by a wide gap.

The specimen as a whole shows striking resemblance to that of *Gobiatherium* though in size it is only half as big. It may represent a small form closely related to or possibly morphologically ancestral to it.