

云南路南早第三紀一新种原始爪蹄兽类

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1957 年春,地質部地質博物館胡承志同志,在云南路南早第三紀地层中采集了一种奇蹄类的化石,代表一种新的原始爪蹄兽类。本文主要是关于这一新种的描述,此外,对过去路南地区发现的另一种系統关系尚不清楚的奇蹄类 *Lunania youngi* 的性質作了討論。

一、新种記述

Eomoropus ulterior sp. nov.

正型标本: 下頰齿列 (P_2-M_3); 北京地質博物館 Vm0053。

地点及层位: 云南路南小沙河;“路南紅层”上部(“扳桥組”),漸新統底部或始新統頂部(?)。

种的特征: 一种大小与 *Eomoropus amarorum* 相近的原始爪蹄兽类。下頰齿 P_2-M_3 长 84 毫米;前白齿部分长度小于白齿列长度的 $2/3$ 。白齿齿冠低寬,最后一个白齿特别长,下次小尖发达。

标本描述: 标本原包括部分下顎骨和完全的下頰齿列,但后来在采集时只保全了牙齿,其中第二白齿后叶系根据基岩上的印模复原而来,其它牙齿保存完整;顏色浅黄;磨蝕程度不深。齿冠的构造基本上都能清楚鉴别。

P_2 簡單,圓錐状,尖端強烈向前;后方有一小跟。 P_3 与 P_4 的基本結構近似,均由一完全的連成脊状的三角座和一个較簡單的后脊組成。 P_3 前端有发达的“前脊”(Paralophid);在 P_4 中几乎不发育,仅由原脊外側伸出一小脊,向前下方引伸,与牙齿前端邊緣較发达的齿帶相接。“后脊”主要只有一縱行的低稜,后端不向舌面褶曲,未形成一橫的后脊。下內尖不存在。白齿的大小,特别是前后长度,与前白齿的相对比例显著地較大;齿冠相对較低。下后附尖 (mtsd) 可以較清楚地看出已較发育,并与下后尖 (med) 在頂端分离,其大小亦与后者接近,但比下內尖小得多。第三下白齿特别长大,下次小尖发达,呈錐状,前沿平坦,靠舌面邊緣的內側有一长条形的小凹坑。各白齿的橫脊均极平直、平行,外側成約 70° 的銳角褶曲,伸出一附脊自舌面向前向下斜伸。白齿的前后叶并未形成在爪蹄兽类中典型的两个新月形或半月形的結構。

下齿列及各牙齿的主要測量及比較数字見附表及插图。

比較与討論: 路南的爪蹄兽,从身体較小,前白齿較簡單,白齿化的程度較差,和白齿的前后叶未形成較典型的半月形等性質都表示它是一种接近于 *Eomoropinae* 的比較原始的爪蹄兽类,而这些特征和 *Eomoropus* 属的較近似。因此,当目前材料还不多,对这个种

的其他部分构造的性质尚不清楚时,暂时将它归入同一属内。

中国过去发现的爪蹄兽类化石胡长康(1959)曾作过一次系统的概述。

路南爪蹄兽新种下颊齿测量与北美几种爪蹄兽类的比较(北美种的数字依 Osborn, 1913):

	P_2-M_3	P_2-4	M_{1-3}	$\frac{P_2-4}{P_2-M_3}$	$\frac{M_{1-3}}{P_2-M_3}$	$\frac{P_2-4}{M_{1-3}}$	$\frac{M_{1-3}}{P_2-4}$	P_2	P_3	P_4	M_1	M_2	M_3
<i>Eomoropus amarorum</i>	86	33	53	38.4	61.6	62.3	160.6	10.5	12	11.5	13	18	23
<i>E. ulterior</i>	83.5	28	55.5	33.5	66.5	50.4	219.2	7	11	10	13	18	25.5
<i>Schizotherium</i> sp.	118	42	76	35.6	64.4	55.3	178.6	11.5	15	16	20.5	28	29
<i>Moropus?</i> sp.	208	66	136	32.2	67.8	48.6	206.1	17	24	28	35	50	55

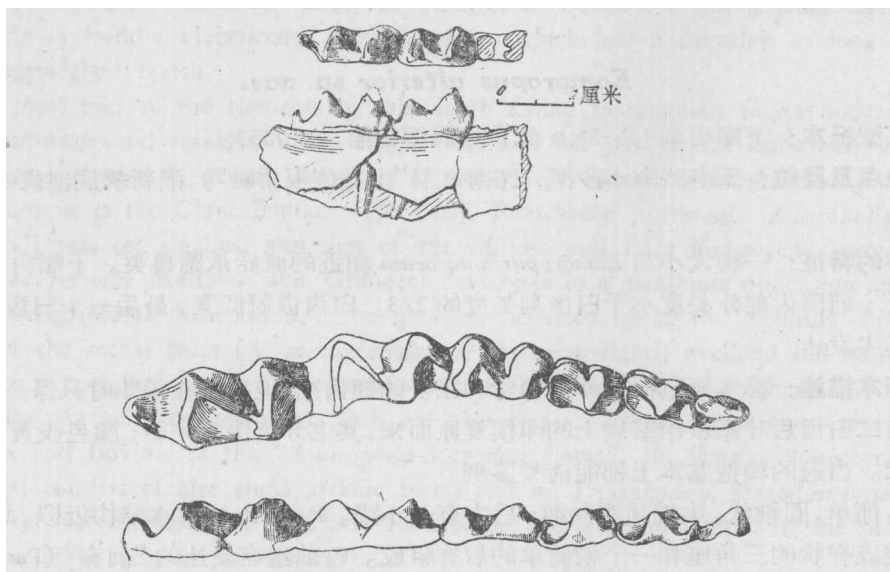


图1. 上 *Lunania youngi* Chow
正型标本 ($M_{2,3}$ 及部分下颚骨),
顶面及内侧面视。×1。
下 *Eomoropus ulterior* Chow
正型标本 (P_2-M_3)。
顶面及内侧面视。×1。

从牙齿的大小和白齿后附尖的发育程度来看,路南的标本与北美中、晚始新世的 *E. amarorum* 相近。可是这两点还不能说明两者间的关系,因为我国已知的 *Eomoropus* 的三个种都未发现过较完全的下颊齿列,因此无法直接比较。但在牙齿结构和河南(濉池)的 *E. quadridentatus* 的下白齿显然有很大差别,后者的齿冠较狭,下后附尖较发达,第一、二下白齿的后端有下次小尖,白齿引长的程度不如属型种中那样显著。因此,这一个种及垣曲盆地一起发现的另两个种,司丹斯基(O. Zdansky, 1930)对于它们的属性也未肯定,后来虽然一般都将它归入北美始新世的 *Eomoropus* 属,但实际上两者可能还是

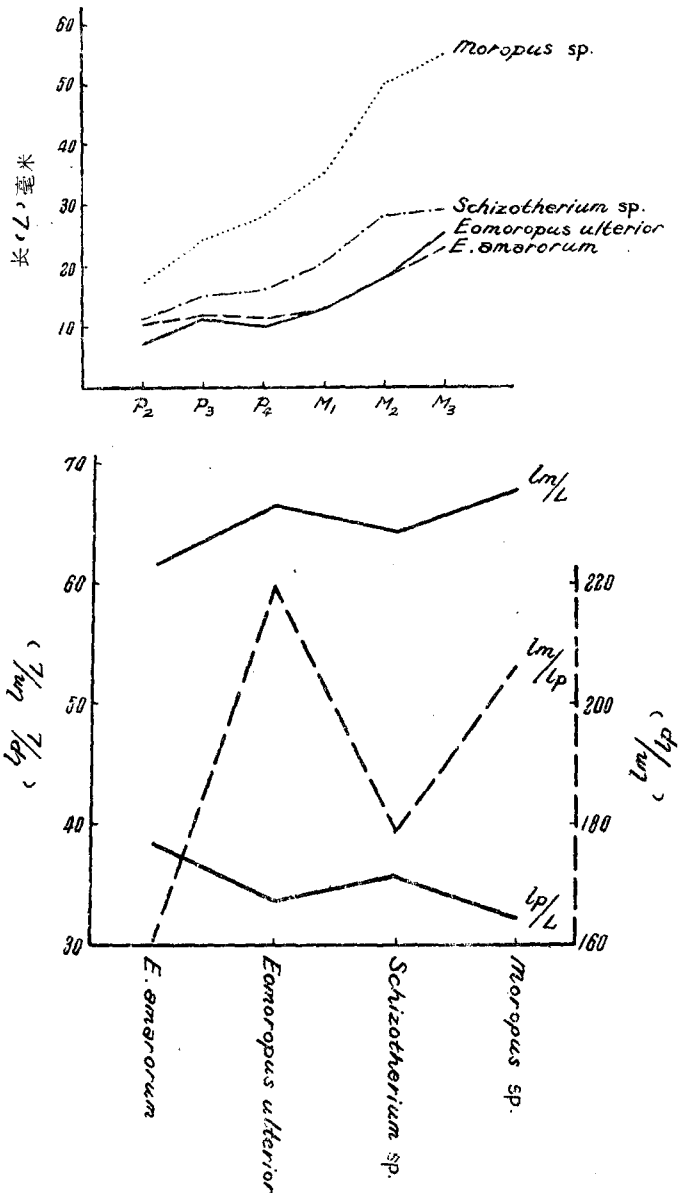


图 2. *Eomoropus ulterior* 与三种其他爪蹄兽类的前臼齿及臼齿列的长度变化及比例的比较,着重表示前者的臼齿特别引长的特征(比较数字依 Osborn, 1913 的数字及插图 3 繪图)。

有区别的。云南的标本与北美的 *E. amarorum* 在臼齿性质上比垣曲的各种更近似一些。可能在系统上亦较接近。

路南的新种,从现有的材料看来,最突出的一点是前、后臼齿的比例。虽然在多数草食动物中,前臼齿列都趋向于缩短(与食肉类及马科不同),而在爪蹄兽类中这一趋势十分显著。路南的爪蹄兽,虽然在大小和牙齿的构造上与北美始新世的种相近,但在臼齿列引长和前臼齿列缩短这一点上则非常突出,以至在程度上超过了渐新世早期的 *Schizotherium*

属中的情况,而趋近于中新世北美的 *Moropus* 属。这种性质可以从图 2 中看到。云南的 *E. ulterior* 和 *Moropus* 颊齿长度变化的曲线特别相似,而与 *Eomoropus* 属的很不相同。从这一特点看来,云南的标本很可能是一个独立的属。但这一点最好待有较完整的标本时,结合华北和北美的材料一同处理。

路南这种新爪蹄兽的时代,目前还不能十分确定。过去认为路南红层的哺乳类化石代表好几个(三个或更多)层位,下部的肯定为晚始新世,上部为较晚的渐新世,中间可能还有一、二个从始新世到渐新世的层位。从 *Eomoropus ulterior* 的性质看来,有较大可能为渐新世。目前的证据还无法作较可信的推论。

二、Lunania 的系统位置

1939 年杨鍾健、卞美年报导了几种云南路南老第三系红层中的化石,但只开列化石初步鉴定的名录。这些化石后来由本文笔者作了描述(1957),其中有一种奇蹄类下颞骨的后半段,带有最后两个臼齿,定名为 *Lunania youngi*, 其系统关系不清楚。当时被认为可能是一种 Lophiodontidae。最近在研究本文中上述的 *Eomoropus* 标本时,又对它作了观察。*Lunania* 的标本要小得多,下臼齿没有下后附尖。但是在牙齿的基本结构上,则与 *Eomoropus ulterior* 十分相象(图 1),例如臼齿的横脊及其附脊的方向与接触关系,都是由一垂直牙齿长轴的主脊(原脊及后脊),在外侧有一附脊以 70° 左右的锐角折向前伸;后脊的附脊在下后尖后内侧与前脊相连。在 *Eomoropus* 中,并在此连接点的舌面分离出下后附尖。而在 *Lunania* 中则看来并无这一构造,但如用放大镜在适当光线下,也可看到有裂缝,可能代表下后附尖的萌芽。但是这一点在目前不能予以肯定,因在其他原始奇蹄类,如 *Hyracotherium* 中也有同样现象,并且与 *Lunania* 的十分相象。另外, *Lunania* 下第三臼齿有一发达的第三叶(下次小尖),在内侧面(舌面)有一纵向小裂口状的浅坑,而这一构造和一般同一构造上的盆状的小凹不同,而和 *Eomoropus* 属的特别相近。总之从现有的材料看, *Lunania* 有可能是一种原始的爪蹄兽。过去发表过的插图(Chow, 1957)不很清楚,这里予以重绘,以便于和 *Eomoropus ulterior* 直接比较。

如果 *Lunania* 确系一种爪蹄兽类,那么这是目前这一类中最原始的一个属。*Lunania* 及其他共生动物的时代,从最近发现的一些资料看来,可能比过去认为的要早一些,可能更接近于河南卢氏动物群的时代。

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A NEW SPECIES OF PRIMITIVE CHALICOTHERE FROM THE TERTIARY OF LUNAN, YUNNAN

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A new species of chalicothere represented by the lower cheek teeth is described. The specimen was collected in 1957 by Mr. C. C. Hu of the Geological Museum, Peking, from the lower Tertiary of the Lunan Basin in eastern Yunnan. It is the same locality (Hsiaoshaho) whence the type specimen of *Prohyracodon progressa* (Chow and Xu, 1961) was collected. Several fossil zones have been recognized in the Paleogene of Lunan Basin. While the lower part of the series contains an Eocene mammalian assemblage and the uppermost part an Oligocene one, the age of the intermediate portion from which the here described species was derived, is yet uncertain. It was formerly thought by the present writer to represent an upper Eocene horizon and probably stratigraphically as well as faunistically closely tied to the underlying Eocene. On the evidences set forth through more detail field observation and the study of recently discovered material, there seems to exist, between the two, a horizon with a mammalian assemblage highly suggestive of an early Oligocene affiliation. The new chalicothere, *Eomoropus ulterior*, is probably also one belonging to this category though the known stratigraphical range of this genus does not extend beyond Eocene.

1. DESCRIPTION OF THE SPECIES

Eomoropus ulterior sp. nov.

Type—Lower cheek teeth row (P_2 - M_3); VM0053, geological Museum, Peking.

Locality and Horizon—Hsiaoshaho, Lunan District, E. Yunnan; Upper part of "Lower Lunan Formation" ("Panchiao Stage"); Uppermost Eocene or lowest Oligocene.

Diagnosis—A primitive chalicothere about the size of *Eomoropus amarorum*. Length of P_2 - M_3 , 84 mm; that of premolar (P_2 - P_4) less than two third that of the molars. Crown of molars broad and low; last lower molar much elongated and with a relatively large hypoconulid.

Description—All the teeth are moderately worn and well preserved except the posterior of M_2 which was restored from its cast in the matrix. P_2 is simple, conical and with anteriorly pointed apex and a small posterior shelf. P_3 and P_4 are quite similar in construction, each consisting of a complete anterior loph and a longitudinal crest, the posterior of which does not swing lingually to form a bend; and the hypostylid is not developed. Lower molars are relatively large and progressively broadened and elongated. Metastylids are distinct and well marked off from the metaconids, and much weaker than the entoconids. Hypoconulid of M_3 is comparatively large and with a small elongated pit on its internal side.

Remarks—So far as the comparison of the available parts are concerned, the new species is close to the genus *Eomoropus* in premolar and molar structure, as well as in

size. Among the five species formerly known of this genus, *E. amarorum* is the only form with which a direct comparison could be made. As to the other species, either they are too small, or their lower dentition yet unknown. From *E. amarorum* and possibly the others, *E. ulterior* differs markedly in having much elongated molars, especially its proportionate length with reference to the anterior teeth. In this connection, *E. ulterior* surpassed even the much more advanced later forms (see figures in Chinese text).

2. ON THE AFFINITY OF *LUNANIA*

In 1957 a lower jaw fragment of a small perrisodactyle (*Lunania youngi* Chow) from the upper Eocene of the same district was described by the writer. The specimen, a jaw fragment with the two posterior lower molars, is refigured in the present note. Owing to the scantiness of material and the fragmentary nature of the specimen its affinity was not clear, but has been referred provisionally to as a lophiodontid. A comparison of it with that of *E. ulterior* and the allied species of *Eomoropus* recently collected in North China seems to indicate that it is quite probably a chalicothere which has very primitive lower molar construction. The teeth resemble those of an *Eomoropus* strikingly, but differ markedly in its much inferior size and in that the metastylid has not yet come into existence or is barely in an incipient stage of development. Had this inference be correct, and *Lunania* is really a chalicothere, as the present writer now tends to believe, it is the most primitive form of chalicothere yet uncovered.