

江苏铜山上新世 *Promephitis* 一新种

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关键词 江苏铜山 上新世 鼬科

内 容 提 要

本文记述了一个采自江苏铜山的原臭鼬类头骨化石。根据铜山标本自身的特征以及与 *P. maotica*、*P. lartetii* 和 *P. alexejewi* 等相近类型的比较,我们认为它不同于目前已知的任何原臭鼬种,而是 *Promephitis* 属中一新成员——*P. maxima* sp. nov., 其地质时代为上新世。

本文记述的标本是由徐州博物馆提供的,该标本由徐州博物馆文物普查队于1979年采自江苏省铜山县大黑山一石灰岩裂隙堆积中。其岩性为棕红色砂质粘土,夹角砾,钙质胶结。化石发现时,上下颌骨彼此咬合,包裹于一结核之中。标本经李功卓先生精心修理后,基本完好。在研究过程中,邱占祥先生曾提出许多很好的意见。李荣山、张杰先生分别为本文制作插图、摄制图版,在此谨致谢意。

本文的标本编号系采用徐州博物馆的馆藏化石标本编号。

食肉目 Carnivora Bowdich, 1821

鼬科 Mustelidae Swainson, 1835

臭鼬亚科 Mephitinae Gill, 1872

原臭鼬属 *Promephitis* Gaudry, 1862

最大原臭鼬(新种) *Promephitis maxima* sp. nov.

正型标本 同一个体头骨连着下颌骨(XM 001)。

地点及时代 江苏省铜山县大黑山(野外地点编号79004)。上新世,距今约3—3.5百万年。

特征 个体为 *Promephitis* 属中的最大者,颜面部较短;头骨最高点位于眶上突后部少许;无眶后突;眶下孔小而圆,紧靠眼眶;下颌骨体底缘较平直,后端向上略微收缩,下颌联合部宽而深;齿式 $\frac{3 \cdot 1 \cdot 2 \cdot 1}{3 \cdot 1 \cdot 3 \cdot 2}$; P_4 原尖发育,无前附尖,齿长与 M^1 相等; M^1 内、外齿带发育; M_1 长度超过下前臼齿列长度,但小于 $C - P_4$ 长,三角座长于跟座,下后尖位于下原尖之后,下内尖发育,双尖型。

描述 化石保存基本完好,发现时,头骨、下颌骨彼此咬合,包裹在一个红色砂质粘土

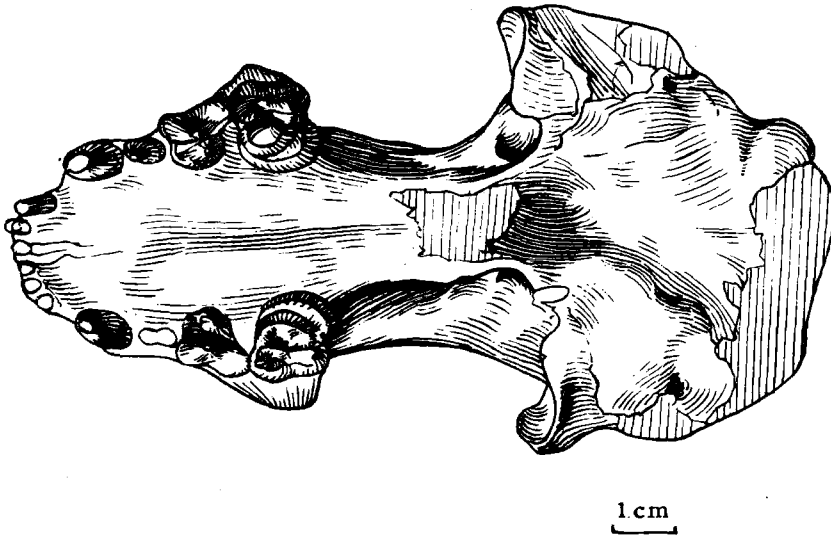


图 1 *Promephitis maxima* 头骨腹视, XM001
Fig. 1 Ventral view of skull of *Promephitis maxima*

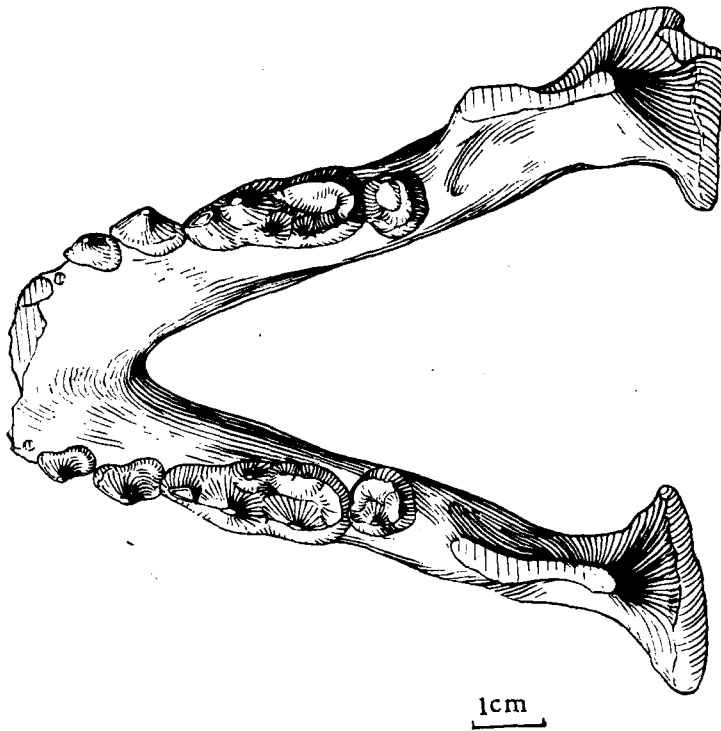


图 2 *Promephitis maxima* 下颌骨嚼面视, XM 001
Fig. 2 Inner view of lower jaw of *Promephitis maxima*

表 1 *Promephitis* 几个种头骨和下颌的比较(毫米)
Table 1 Comparison of the skull and lower jaws of some *Promephitis* species (in mm)

	<i>P. maxima</i> (present paper)	<i>P. majori</i> (Pilgrim, 1933)	<i>P. maerotic</i> (Alexeev, 1916)	<i>P. alexejewi</i> (Schlosser, 1924)	<i>P. larretii</i> (Gaudry, 1861)	<i>P. malusrenensis</i> (Simionescu, 1930)
头全长 L. of skull from occipital condyles to incisors	91	53.6	67.5		70	
I ³ 之间宽度 W. across incisors	13.4	7.5	9.6			
C 间宽度 W. across canines	23.1	14.0	18.2			
M ¹ 间宽度 W. across molars	33.2					
翼间窝宽度 W. of interpterygoid fossa	6.4					
腭 长 L. of palate	37	27.5	36.0			
眶 间 宽 Interorbital breadth	28.4					
眶 后 宽 Posterorbital breadth	21.1	14.7	16.6			
听 泡 间 宽 Min. dist. between bullae	10.5					
下 颌 全 长 Dist. between condyles and incisors	53	35.0	38.7			
P ₂ -P ₄ 处下颌高 H. of ramus beneath P ₂ -P ₄	12					
M ₁ 处下颌高 H. of ramus beneath M ₁	11	7.0	8.5	8.0		

结核中。两侧颧弓,上下门齿、P³、P₂及下颌联合部远端破失,头骨顶区因受顶向挤压有所变扁,枕区的部分骨片脱落。

根据头骨骨缝愈合、各颊齿的磨蚀程度较浅等情况判断,这是一个刚成年的个体。

头骨 总的来看,头骨长而窄,颜面部较短。头骨最高点位于眶上突后部少许,其前部自最高点急剧下降。鼻骨前端与前腭骨前端基本相齐。眶下孔近圆形,位于P⁴与M¹交界处上方,泪管通道紧位于眶下孔上方。无眶后突。额脊较微弱,但额脊汇聚后形成明显的顶脊,顶脊长约33毫米。腭裂较长,呈八字形分开。硬腭后缘位于臼齿后缘前方。耳泡略微隆起,左右两耳泡前部相距较近,后部较远,使基枕骨呈梯形。外耳道开孔斜向前方。乳突已破失,但根据其残余部分看是发育的。右枕髁破损。

表 2 *Promephitis* 几个种上、下牙齿的比较(毫米)Table 2 Comparison of the *Promephitis* upper and lower teeth (in mm)

		<i>P. maxima</i> (present paper)	<i>P. majori</i> (Pilgrim, 1933)	<i>P. maeotica</i> (Alexejew, 1916)	<i>P. alexejewi</i> (Schlosser, 1924)	<i>P. tarteti</i> (Gaudry, 1861)	<i>P. malusrenensis</i> (Simionescu, 1930)
I ¹ —M ¹		36.2					
C—M ¹		28.4	17.1	21.4		26.0	
P ³ —M ¹		21.3					
P ⁴ —M ¹		16.4			14		
C	L. of the crown	9.7	5	9.7	7.0		
	L. of the root	14					
P ³	L	3.6	2.0	2.5			
	W	3.1	1.6	2.0			
P ⁴	L	8.2—8.5	5.6	7.1	8.0	8.0	
	W	6.9—7.3	4.1	5.3	5.0		
M ¹	L	8.8—8.9	5.6	5.7	5.8	5.0	
	W	10.3—10.5	6.5	9.1	7.6	8.0	
C—M ₂		31.1	19.7	26.0		25.0	
C—P ₄		15.1					
P ₂ —M ₂		27.2					
P ₂ —P ₄		10.3	6.0	8.0		8.0	14.5
M ₁ —M ₂		17.5					
P ₃	L	3.8—3.7	2.0				
	W	2.9—3	1.4				
P ₄	L	4.9—4.7	3.0		3.8		
	W	3.7—4	2.0		2.0		
M ₂	L	4.2—4.3	2.4				
	W	4.8—5	2.4				
M ₁	L	12.8—13.1	7.9	10.2	10.6	8.0	9.0
	W	5.9—6	3.5	4.7	4.8		3.5
	L. of trigonid	7.3—7.5	4.5		5.6		

铜山标本除门齿齿冠破损外,颊齿基本保存,它的齿式为 $\frac{3 \cdot 1 \cdot 2 \cdot 1}{3 \cdot 1 \cdot 3 \cdot 2}$ 。

I¹⁻² 仅存齿根,齿根前后径约为左右径之二倍。I³ 较高,略粗,内壁平。

C 粗壮,横截面椭圆形,齿尖略向后外方弯曲。

P² 缺失(齿槽上无迹可寻)。

P³ 双齿根,齿冠后缘有一微弱齿带状小尖。后齿带发育, P³ 与 P⁴ 间有齿隙, 其间距约 1—1.5 毫米。

P⁴ 三齿根,冠面基部呈不等边三角形,原尖发育,基部膨大,其前缘超过前尖位置。前尖高耸,向后略倾斜,外壁圆突,内壁陡直。后尖低于前尖,其长度约为整个牙齿长度之半,后尖与前尖相连形成裂叶。无前附尖。前齿带从原尖前缘绕至前尖外壁,后齿带自后尖末端向舌侧延伸,终止于原尖与裂叶之间的纵沟处。

M¹ 宽大于长,四个齿根,牙齿齿冠的中部收缩,分成内、外两部分。内侧部分半圆形,位置靠后;外侧部分哑铃形。原尖位于内侧。略呈弯月形,其前端陡直,后端舒缓下降。前、后尖位于外侧,锥形,大小相等,中部以沟分开。前附尖明显,无次尖。原尖与前、后尖之间有一深的坑。内、外齿带极其发育。

下颌骨 基本完好。下颌骨体短,其底缘较平。上升枝后缘与髁状突之间成直角相交,角突伸向外方,与髁状突基本相齐。咬肌窝深。下颌联合的前端较平缓,相对较宽,其后缘位于 P₃ 后端下方。下颌骨外侧有三个颞孔,最大者位于 M₁ 的前端下方,另外二个分别位于 P₄ 下方和 P₃ 前下方。

下门齿全部破失。下犬齿保留齿根,截面圆形。下前臼齿呈覆瓦状排列。

P₂ 相当小,单根,紧靠犬齿,与 P₃ 间有齿隙。

P₃ 双根,下前尖不发育。后齿带发育,形成后跟座。

P₄ 双根,主尖高,锥形。有发育的齿带状内尖。P₄ 大小约为 P₃ 两倍。下前尖和下后尖不甚明显。后齿带形成较宽大的后跟座。

M₁ 宽而长,其长度大于 P₂—P₄ 长度,接近于犬齿至 P₄ 的长度。下原尖粗壮,内、外壁陡直。下前尖并不很斜向下原尖,它的长度与下原尖相等,但明显较低。下后尖圆锥形,位于下原尖内后方,其高度仅达下原尖高度之半。三角座长度超过后跟座长度,跟座发育,中凹。下次尖明显,较高。下内尖双尖,两尖之间有一 V 形沟。下内尖与三角座间有一较深的凹陷。

M₂ 较小,单根,冠面接近圆形,牙齿中部微凹。它位于下颌骨上升枝前端,在牙齿内外边上有两个尖,两者均呈圆形。

比较与讨论 臭鼬亚科 (*Mephitinae*) 的化石以往在我国发现仅一种,即 *Promephitis alexejewi*。这些材料大多零星破碎。铜山大黑山发现的材料,保存基本完好,这对了解该属的种间关系提供了珍贵的依据。

现生臭鼬有三个属: *Mephitis*, *Conepatus* 和 *Spilogale*, 分布于北美洲至南美洲。化石材料除上述三个属外,还有 *Brachyprotoma*, *Buisnictis*, *Osmotherium*, *Trocharion* 和 *Promephitis*。除后二者外,其余仅发现于美洲的更新世地层中。*Mephitis* 和 *Spilogale* 具有 P², *Spilogale* 个体较小,这些特征明显不同于铜山标本。*Conepatus* 虽然缺失 P², 但它的牙齿结构及耳区特征可清楚地区别于铜山标本,如它的 M¹ 长宽基本相等, M₁ 三角座短于跟座,耳泡较平,不隆起等。*Brachyprotoma* 和 *Buisnictis* 个体远小于本文材料,它们的上、下前臼齿前后相挤、倾斜,吻部和下颌极短,下裂齿的下后尖较小。*Bu-*

isnicitis 具有 P^2 , 与本文材料相差较大。*Osmotherium* 个体大小如 *Mephitis*, 两者形态特征也相近, Kurtén 认为它可能就是 *Mephitis*。至于 *Trocharion* 在形态上极为原始, 个体较大。因此铜山标本不可能归入上述几个属中。

铜山标本缺失 P^2 , 它的 M^1 宽大于长, 无眶后突, 眶下孔紧靠眼眶。 M_1 长度长于下前臼齿列长度, 三角座长于跟座, 跟座呈盆形。 P_2 极细小。 M_2 退化。这些特征与 *Promephitis* 相同, 因此铜山标本应为 *Promephitis* 一种。

Promephitis 属是 Gaudry 于 1861 年建立的, 属型种是发现于希腊 Pikermi 的 *P. lartetii*。根据 Gaudry 的记述, 这个模式标本受到强烈挤压。在 Gaudry 描述后, 该标本又遭受到破坏, 因此在鉴定 *Promephitis* 时应予以足够注意。迄今为止, *Promephitis* 共有以下六种:

(1) *P. lartetii* Gaudry; (2) *P. gaudryi* Schlosser; (3) *P. maeotica* Alexejew; (4) *P. majori* Pilgrim; (5) *P. alexejewi* Schlosser; (6) *P. malustenensis* Simone-scu。

P. malustenensis 发现于罗马尼亚的 Malusteni。关于该种的描述和图版都较简单, 从测量数据看, *P. malustenensis* 最突出的特点是具有极长的下颌骨和极长的下前臼齿列, 它的 M_1 与一般的 *Promephitis* 者大小相近, 只是宽度较小, 这些特征与铜山标本的区别是显而易见的, 铜山标本下前臼齿列的长度远小于 *P. malustenensis* 的, 但 M_1 无论长度还是宽度却远大于 *P. malustenensis* 的。我们同意 Pilgrim 的看法, 认为 *P. malustenensis* 可能是另外一个属。

P. lartetii 发现于希腊的 Pikermi, 以后发现于 Samos 的一件下颌骨也被归入该种。它们在尺寸上均小于铜山标本。根据转述, Pikermi 的标本头骨腹部特征与 *Conepatus* 相近, 如果确系如此的话, 当与铜山标本区别较大。因为 *Conepatus* 的耳泡较平, 不隆起, 它的硬腭的后端超过臼齿的后缘。Pikermi 的下颌骨只有两个前臼齿, 不过发现于 Samos 的下颌骨具有很微小的 P_2 。*P. lartetii* 有别于铜山标本的特征还有它的 P^4 长度长于 M^1 者, M_1 外壁平直, 下后尖位于下原尖之前。

发现于希腊 Samos 的 *P. majori* 的材料较完整, 它比铜山标本小得多, 而且具有明显的眶后突。它的顶骨脊很宽, 从顶面观察呈带状, 而铜山标本者呈线状。*P. majori* 的枕髁突出不明显, P^4 具有较明显的前附尖, 无后齿带。 M^1 的长度相对较长。它的下颌骨也远小于铜山标本, 下门齿大小相等。 M_1 的后尖与原尖相齐。这些特征与铜山标本者很不相同。

P. gaudryi 是 Schlosser 根据一枚 M_1 建立的, 一些学者对其可靠性曾表示过怀疑。铜山标本的 M_1 除舌侧弯曲及测量较大外, 其余与 *P. gaudryi* 无异, 由于材料关系, 无法进一步对比。

P. maeotica 发现于苏联的敖德萨北, 是由 Alexejew 最初建立的, 以后在苏联陆续有所发现。它的头骨顶部较平, P^4 和 M_1 在比例上相当大, P^4 的原尖并不呈三角形, 其长度也较小, 未达整个牙齿长度之半。 M_1 长度极长, 下内尖不明显。它的时代可能也是最早的, 属 Maeotian 期。

1924 年, Schlosser 根据我国内蒙二登图的材料建立了 *P. alexejewi*, 同时他还描

述了定名为 *Trochictis minutus* 的材料。1945 年, 德日进系统研究我国鼬科化石时, 根据 *T. minutus* 的大小及其它特征, 将 *T. minutus* 合并到 *P. alexejewi* 中, 一起合并到 *P. alexejewi* 中的还有 Zdansky 1937 年研究的保德材料。但同时德日进还是注意到 *P. alexejewi* 实际上有两种类型, 一种个体较大, 如榆社的材料; 一种个体较小, 如保德的材料。在时代上两者也不相同。因 *P. alexejewi* 的材料目前只有牙齿, 所以对比仅限于牙齿的结构和测量。它不同于铜山标本主要有以下几点: (1) 所有的测量数据均小于铜山标本者, 而且相差悬殊; (2) P^4 原尖较大, 双尖型; (3) P^4 的长度大于 M^1 者; (4) M_1 长度约为 $C-P_4$ 长; (5) M_1 的下内尖不明显。其中它的测量数据较小这一点尤其显著, 其它结构上的差异则较细微。事实上, Mephitinae 的几个现生属中各种之种间差别主要表现在其外形上, 牙齿结构的不同非常细微甚至难以区分。根据 Van Gelder 对大量现生 *Spilogale* 和 *Coneparus* 的统计分析, 它们种内的个体差异在头骨的几个要素(包括牙齿)的测量上不超过 5%, 双性差异不超过 10%。因此我们完全可以认为铜山标本与 *P. alexejewi* 的区别不是种内的个体或双性差异, 而是种间的不同。

综上所述, 铜山标本明显不同于任何现生种和化石种, 它最突出的特征是其较大的个体。根据我们掌握的资料, 它可能是 *Promephitis* 中最大者。为此, 我们建立一个新种: *P. maxima* sp. nov.。

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A PLIOCENE SPECIES OF *PROMEPHITIS* FROM TONGSHAN, JIANGSU

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Key words Tongshan Jiangsu; Pliocene; Mustelidae

Summary

The specimen which forms the subject of the present paper is from the fillings of a limestone fissure in Daheishan of Tongshan County, Jiangsu Province, east China. The fillings mainly consist of violet sandy clay containing breccia, which is calcareously concreted. The specimen consisted of the conjoined skull and mandible which was found in a nodule. It is by far the most perfect specimen of the skunk fossils known in China. By comparisons with each one of the fossil species of *Promephitis*, the described specimen shows features distinct from them. It represents a new evolutionary level of the genus, to which the name *maxima* may be affixed because of the largest size.

XM—Xuzhou Museum, Jiangsu Province, China.

Carnivora Bowdich, 1821

Mustelidae Swainson, 1835

Mephitinae Gill, 1872

***Promephitis* Gaudry, 1862**

***Promephitis maxima* sp. nov.**

Holotype a skull and mandible(XM001).

Locality and age Daheishan of Tongshan County, Jiangsu Province (field site no. 79004); Late Pliocene, approximately 3—3.5Ma.

Diagnosis A *Promephitis* of larger size than the hitherto known species; skull with short muzzle; infraorbital foramen small and round, situated close to the orbit; mandible ramus with ventral border straight, but compressed hinder end; the symphysis deep and wide; dentition $\frac{3 \cdot 1 \cdot 2 \cdot 1}{3 \cdot 1 \cdot 3 \cdot 2}$; P⁴ with developed protocone, without parastyle, as long as M¹;

M¹ with strongly developed internal and external cingulum; M₁ longer than premolar series, but shorter than C—P₄; trigonid longer than talonid; metaconid of M₁ behind protoconid, entoconid well developed and bicusped.

Description The skull and mandible are almost perfect. They belong to one individual. The skull is dorsally compressed. The zygomatic arches, the crown of upper and lower incisors, P³ and P₂ are missing, but the roots are preserved. The individual had just attained the adult state before its death, since the sutures are obliterated and teeth show little sign of wear. The skull with short muzzle is long and narrow. The cranium forms a curve, with the highest point above the orbits, slightly posterior to the supraorbital process. The rostrum is de-

pressed, sloping sharply down from the highest point. The nasals extend rather far forward, so that the anterior end is nearly at the level of the anteriormost end of the premaxilla. The infraorbital foramen, which is round and above the border between P^4 and M^1 , lies closely adjacent to the anterior edge of the orbit. The postorbital processes are absent. The frontal-parietal crests are improminent, but the two branches unite into a distinct parietal crest, which is about 33mm long. The palatine fissures are elongated. The posterior margin of the palate is within either side of the posterior border of the molars. The auditory bullae are relatively uninflated. The distance between bullae is shorter at anterior portion than at posterior portion. The external auditory meatus is round and directed laterally and only very slightly forward. The mastoid process, though broken off, is strong and projects outward. Only the left occipital condyle is preserved. The crowns of I^{1-2} are broken away, only roots are preserved. The anteroposterior diameter is twice as that of transverse ones. I^3 is higher and wider than I^1 and I^2 , with its lingual surface flat. The canine, of which cross-section is oval-shaped, is large and curved backward. Diastema exists between the canine and P^3 . P^3 is double-rooted. A tiny cusp presents on the posterior cingulum which is well developed. Diastema between P^3 and P^4 is about 1.5mm long. P^4 is three-rooted. The crown has a triangular outline. The protocone is well developed and expanded at the base. The paracone is very high and oblique backward slightly, with its external wall curve and internal wall straight. The metacone is lower than the paracone, extending almost the half of the entire length of the tooth. The paracone and metacone are in the same fore-and-aft line, being joined to form a blade. The anterior cingulum passes from the anterior end of the protocone to the anterior border of the paracone. The posterior cingulum stretches from the apex of the metacone down to the bottom of the valley which separates the protocone from the blade. Both the anteroposterior and transverse diameters of M^1 are more than outside length of P^4 . In M^1 , transverse diameter is greater than anteroposterior diameter. The lingual half of crown is semicircular and displaced posteriorly. The outline of buccal half is dumbbell-shaped. The protocone is large and semilunar. The buccal half bears two cusps, paracone and metacone, of nearly equal size. A shallow notch presents between the paracone and metacone. The external and internal cingulum are strongly developed, the latter being more massive than the former.

The horizontal part of mandible is relatively short. Its ventral border is thick and rounded. The condyle process is placed very low—not much higher than the alveolar border when the bone is resting on a flat surface. It is long transversely and the medial part of the articular surface is much wider and extends over the posterior surface. The hinder border of the coronoid process is vertical to the articular surface of the condyle. The angular process projects backward and outward. The masseteric fossa is deep. The symphysis ends at the level of the posterior border of the P_3 . There are three mental foramina on the ramus, the biggest is below M_1 and the other two below P_4 and the anterior root of P_3 . All of the lower incisors dropped out. The roots of canines are preserved. P_2 is very minute and vestigial. P_3 is two-rooted, with a distinct anterior basal cusp and a slight posterior cingulum. P_4 is two-rooted and more than twice the size of P_3 . The main cusp is high. The posterior cingulum forms talonid. M_1 is strongly developed. The length of this tooth is greater than all the premolars, equalling their length plus half the diameter of the canine. The protoconid is wide and high. The paraconid is not very oblique to the protoconid. The metaconid is conical and behind the protoconid, being lower than the protoconid. The trigonid is longer than talonid which is basinshaped. The hypoconid is distinct. The entoconid has two cusps between which a V-shaped valley is present. A deep notch separates the entoconid from posterolingual edge of the

trigonid. M_2 is small, simple, single rooted, and approximately round, with a central depression. It is situated on the beginning of the nearly vertical anterior border of the ascending ramus. Two cusps are present on both the internal and external side.

Comparison and discussion The living skunks, which are widespread throughout much of North and South America, are divided into three genera *Mephitis*, *Conepatus*, and *Spilogale*. The fossil skunk genera are *Brachyprotoma*, *Buisnictis*, *Osmotherium*, *Trocharion*, and *Promephitis* besides the genera mentioned above. Except for the genera *Trocharion* and *Promephitis*, the others are fairly common in the North American Pliocene. As compared with the above genera, the Tongshan specimen is closely related to *Promephitis* and shows more characters in common with it than with the other genera. Therefore what we need is only to compare the Tongshan specimen with the species of *Promephitis*.

The genus *Promephitis* was established by Gaudry in 1861. The genotype is *Promephitis lartetii* from Pikermi. In addition to the genotype, five other species had been referred to this genus, namely *P. gaudryi* Schlosser; *P. maeotica* Alexejew; *P. dlexejewi* Schlosser; *P. majori* Pilgrim; *P. malustenensis* Simionescu.

P. malustenensis was founded on a fragmentary ramus from Malusteni, Rumania. It is insufficiently figured and described. According to the measurements, extremely long ramus and premolar series are the characteristic features of the species. Its M_1 is common in the genus *Promephitis*, only it is a bit shorter transversely. We agreed that it probably belong to another genus.

The genotype *P. lartetii* from Pikermi is a skull with the mandible. A mandible found in Samos is also referred to this species. They are all smaller than Tongshan specimen in size. According to the description of other authors, the ventral surface of the Pikermi specimen recalls some form like *Conepatus*. Provided the description is correct, the Pikermi specimen differs greatly from the Tongshan specimen, for, in *Conepatus*, the bullae is hardly inflated and the posterior margin of palate is behind upper molars. The Pikermi specimen has two lower premolars instead of three. However, a minute P_2 is present in the ramus from Samos. In *P. lartetii*, P^4 is longer than M^1 , the metaconid of M_1 is in front of the protoconid. All the above mentioned characters are different from those of Tongshan specimen.

The skull and mandible based on which *P. majori* was erected are almost perfect. They are also much smaller than Tongshan specimen. The postorbital process is rather strong. The sagittal crest is strong and broad. A pronounced parastyle is present on P^4 , but posterior cingulum is absent. M^1 has a relatively long anteroposterior diameter. In M_1 , the metaconid is almost on the same level with the protoconid. However, all the mentioned features are on the contrary in Tongshan specimen.

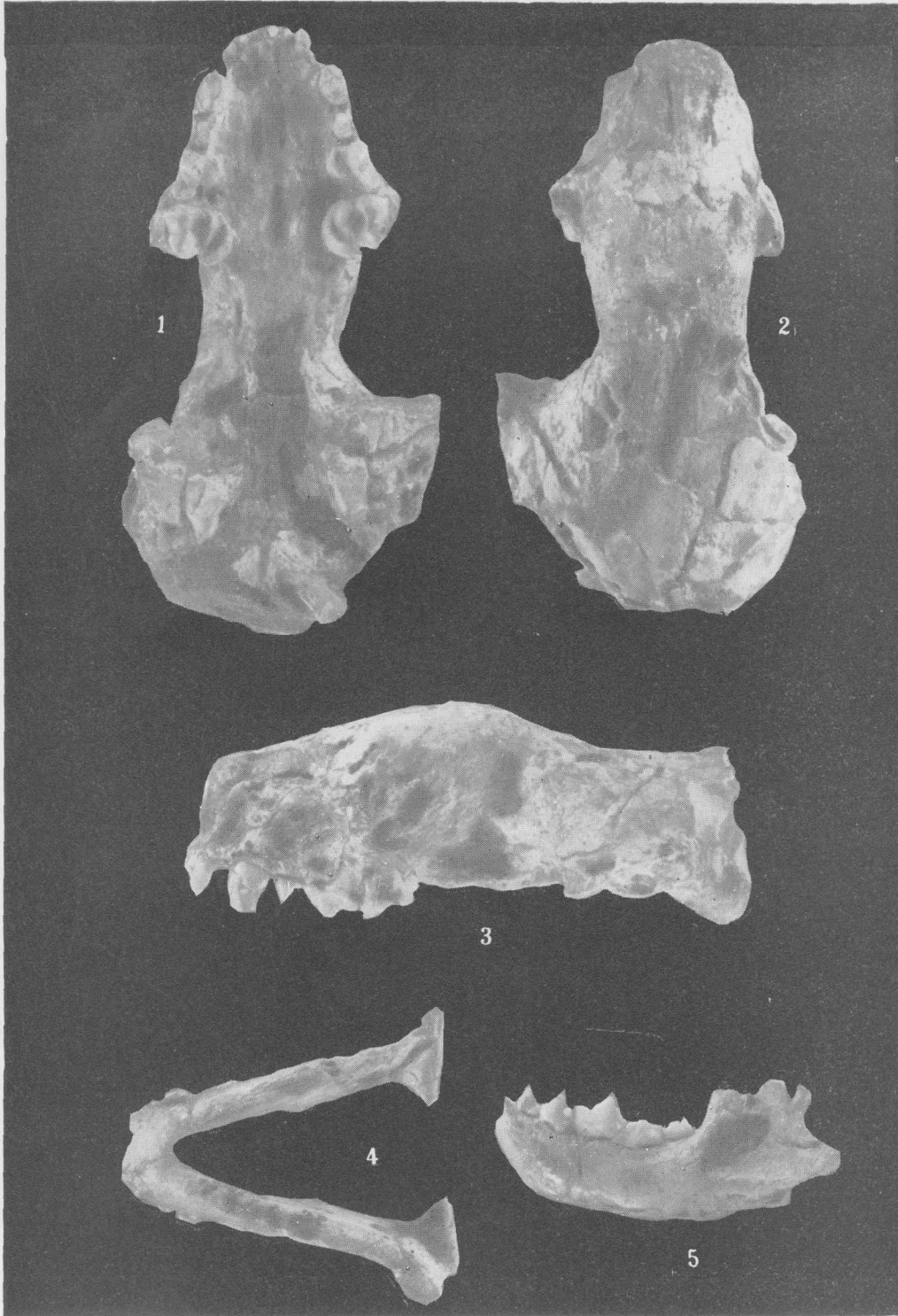
The species *P. gaudryi* is represented merely by an isolated M_1 . Except for the large size and convex inner side of M_1 , no evident characters in which Tongshan specimen differs from *P. gaudryi* are observable.

P. maeotica was erected by Alexejew on the associated skull, mandible, humerus, calcaneum and metacarpals found near Odessa, USSR. The upper profile of the skull is flattened. P^4 and M_1 are relatively larger. The protocone of P^4 is not triangular, nor extending more than half the entire length of the tooth. The entoconid of M_1 is low. The age of this species is Maotian, perhaps the earliest of *Promephitis*.

All the fossil skunks found in China are referred to *P. alexejewi* erected by Schlosser on the material from Ertemte, Nei Mongol. While he also described fossils under the name of

Trochictis minutus. Later, Teilhard de Chardin merged *T. minutus* as well as *P. cf. maeotica* Zdansky into *P. alexejewi*. In spite of the mergence, de Chardin noticed that two forms could be recognized actually. One is larger in size and later in age, the other is smaller and earlier. Because of the material, only dentition comparison can be made. As far as we know, *P. alexejewi* differs from Tongshan specimen in the following characters: (1) All the measurements are much smaller; (2) The protocone of P^4 is bicusped; (3) Anteroposterior diameter of P^4 is larger than that of M^1 ; (4) The length of M_1 is longer than or equal to the length of C— P_4 ; (5) A distinct entoconid of M_1 is wanting. It is noteworthy that the measurements of the Tongshan specimen are especially large. Therefore, the differences between them are neither individual nor sexual dimorphism, but of specific significance.

Throughout the description and comparison, we find the Tongshan specimen different from any known living or fossil species of skunk. As we know, it is the largest of the genus *Promephitis*. For it, we erect a new species, *P. maxima*, sp. nov.



1—5 最大原臭鼬 *Promephiis maxima* sp. nov. XM 001, $\times 1$

1. 头骨腹视 (ventral view of skull); 2. 头骨背视 (dorsal view of skull); 3. 头骨侧视 (lateral view of skull); 4. 下颌骨腹视 (ventral view of ramus); 5. 下颌骨侧视 (lateral view of ramus)