

# 华北更新世的一大型鼯鼯化石\*

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近年內在欧、亚、美洲大陆的上新世和更新世地层中接連地发现了几种大型的鼯鼯化石,如欧洲的 *Beremendia* Kormos 1934, *Blarinoides* Sulimski 1959, 日本的 *Shikaimosorex* Hasegawa 1957 和北美的 *Paracryptotis* Hibbard 1950 等。这些化石的发现和研究的引起学者们的兴趣,对该类动物的分类和进化等问题开展了讨论。笔者最近在观察收藏在古脊椎动物与古人类研究所的食虫类标本时,发现一采自河北唐山賈家山的大型鼯鼯化石的下颌标本。它显然不同于上述的所有种类,代表一新的种属,笔者认为极有必要加以研究报导。

賈家山地点包括有两个可能是同一时代的洞穴堆积,所产的动物化石裴文中教授于1930年做过研究(裴,1930),化石包括: *Talpidae* indet., *Erinaceus* sp., *Canis* (*Nyctereutes*) *sinensis* Schlosser, *Ursus* sp., *Meles* sp., *Mustela* (*Putorius*) sp., ?*Hyaena* sp., ?*Machairodus* sp., *Trogontherium* cf. *cuvieri* Fischer, *Microtus* sp., *Cricetulus* sp., *Mus* cf. *rattus* L., *Siphneus* cf. *tingi* Young, *Prosiphneus* cf. *intermedius* Teilhard and Young, *Ochotona* sp., *Lepus* sp., *Equus* cf. *sanmeniensis* Teilhard and Piveteau, *Suidae* indet., *Cervus* cf. *boulei* Teilhard and Piveteau, *Bison* cf. *palaeosinensis* Teilhard and Piveteau, *Moschus* sp.。应当说明,在裴文中的論文內并没有提到我們研究的鼯鼯化石,但有根据判断它可能是与上述大型哺乳动物化石同时同地采集到的。

賈家山动物羣所代表的时代,根据裴文中的意見(裴,1930,377頁),是介于泥河湾期与周口店期之間。但从动物羣中有一些較古老的类型如 *Prosiphneus* cf. *intermedius* 的存在来看,說明它的时代可能即泥河湾期(維拉方期)。

## 标本記述

### 渤海裴氏鼯 (*Peisorex pohaiensis*) 新属,新种

(插图 1, a—c)

**正型标本:** 一左下颌骨的后部,第一臼齿以前的部分未保存。标本具完整的臼齿列( $M_1-M_3$ ),喙突、关节突保存完整,角突破碎。古脊椎动物与古人类研究所标本编号 V. 2671。

**地点及时代:** 河北唐山賈家山,可能是泥河湾期。

**命名由来:** 属名贈荣誉予著名的中国古生物学家裴文中教授;种名因化石产地临近

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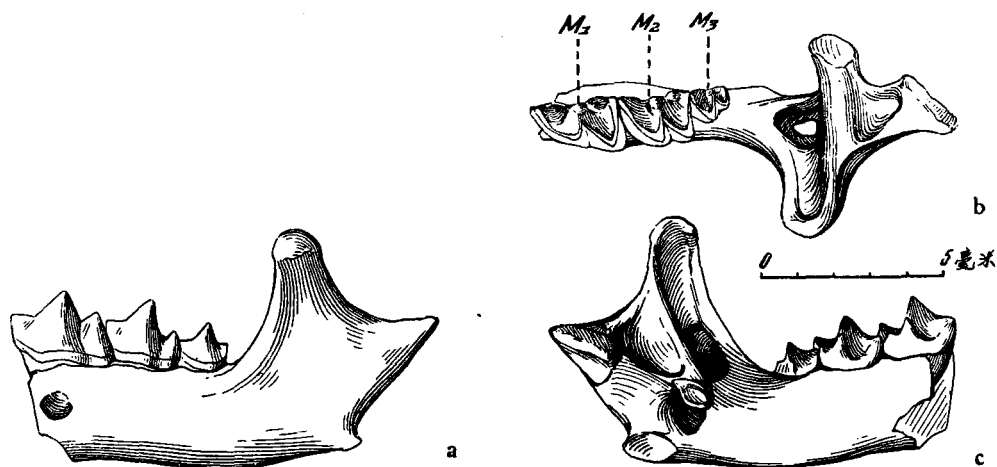


插图 1 渤海裴氏鼯 *Peisorex pohaiensis* gen. et sp. nov. 新属, 新种  
 左下颌骨后部 Posterior part of mandible  
 a) 外侧视 external view b) 冠面视 crown view c) 内侧视 internal view

渤海而得名。

**描述：**化石标本下颌骨厚大。从侧面观察，喙突相当狭，无喙刺（coronoid spicule）。喙突的关节面处平滑简单，不被坑凹所分割。整个喙突体自下颌水平枝的主轴线向外倾斜。翼窝深，与大而圆的下颌孔宽敞地汇通，两孔之间仅隔一狭的骨桥。关节突的上表面有一深窝，它的前部与后部被一深的切迹所分开，前部的基端狭，末端变宽。关节突内板（lamina interarticularis）的中部极向内凹。上关节突面约成  $45^\circ$  向下倾斜。角突在我们标本上虽未能保存下来，估计是极微弱。它的基部内面有一显著的窝。神经孔位于第一臼齿跟座之下。

臼齿齿冠呈棕红色。第一、二臼齿的前缘和外缘虽具齿带，但不发育。第一臼齿的次尖在原尖与后尖之间与三角座相连接。第三臼齿跟座小，跟座上有一非常小的内尖存在。

**标本测量**(单位:毫米) Dimension (in mm)

喙突高 Height of coronoid process.....	7.2
下颌体高(在第一臼齿内侧三角座下) Height of mandible body on the inner side below the trigonid of $M_1$ .....	3.0
第一至第三臼齿长 $M_1-M_3$ length .....	5.8
第一臼齿长与宽(在三角座处) Length and width of $M_1$ (on trigonid).....	2.6 1.7
第二臼齿长与宽(在三角座处) Length and width of $M_2$ (on trigonid).....	2.1 1.4
第三臼齿长与宽(在三角座处) Length and width of $M_3$ (on trigonid).....	1.5 0.86

**讨论：**根据上述特征，贾家山标本无疑应归入鼯鼯科。设若我们采用亚科分类时，它应属于鼯鼯亚科。从它的个体硕大，下颌垂直枝的构造和颊齿颜色来看，它与该亚科的现生种属均有明显区别。

如上述，近年来在欧洲、日本、美洲等地发现了四种大型的鼯鼯化石，如 *Beremendia* Kormos 1934, *Plarinoides* Sulimski 1959, *Shikaimosorex* Hasegawa 1957 *Paracryptotios* Hibbard 1950。渤海裴氏鼯在下列方面与上述四种均不同，即它的翼窝与下颌孔间宽敞汇

通,中間仅隔一狹的骨桥;喙突形状特別簡單,它的关节面平滑,不分割;喙突无喙刺;以及角突內面有一窩坑等。所有这些特征表明渤海裴氏鼯的头骨和下颌間可能具有一种特別的有关节构造,这使裴氏鼯与其他四种大型鼯类之間差异远大过其他四种鼯类之間的差别。

裴氏鼯与 *Shikaimosorex* Hasegawa 的不同在后者的下颌神經孔位于第一下臼齿的中部,而裴氏鼯的神經孔位于第一臼齿前部三角座下。裴氏鼯的頰齿齿带比 *Shikaimosorex* Hasegawa 显著为弱。

裴氏鼯与 *Paracryptotis* Hibbard 的不同在于后者的喙突后緣和关节突的上緣自下颌骨的側面視全为凸形,而裴氏鼯則成凹形。

我們直接与波兰的 *Beremendia fissidens* (Petényi) 和 *Blarinoides mariae* Sulimski 标本做了对比,裴氏鼯皆不同于两者。它的上关节面的位置是介于欧洲的两属之間;下关节面末端加寬,而欧洲的两属末端都变狹。

中国境内还发现有另外两种較大的鼯类化石:一为內蒙二登得(Ertemte)的 *Neomys* (*Crossopus*) *inexpectatus* Schlosser。依据 G. S. 米勒(G. S. Miller, 1927)的意見,該类应归入 *Anourosorex* Milne-Edwards 属。*Neomys* (*Crossopus*) *inexpectatus* 仅发现一不具牙齿的下颌骨的后部,它不仅比裴氏鼯个体为小,而翼窝与下颌孔的联通程度也和其他大型鼯类一样不象裴氏鼯那样寬敞。

另一大型的鼯类化石——中国水鼯 (*Neomys sinensis* Zdansky) 是师丹斯基(O. Zdansky)在1928年研究的。据研究者报告,該化石采自北京周口店第一地点(Zdansky, 1928, 頁12)。值得奇怪的是,以后在第一地点的多次发掘和研究中(包括楊鍾健教授1934年研究的专著在內),都沒再找到該种化石。这种奇异的现象正如楊鍾健(楊, 1934, 頁16)早已指出的那样,“可能是由于师丹斯基把材料的地点相互混淆造成的”。中国水鼯不同于裴氏鼯处在前者頰齿冠无染色,齿带更为微弱,和不具有裴氏鼯的其他独有特征。根据 M. Kretzoi (1956)的意見, *Neomys sinensis* Zdansky 应归入 *Beremendia* Kormos 属。但是,尽管 *Neomys sinensis* Zdansky 与 *Neomys* Kaup 属有較大的差别,但从它的齿冠无染色,喙突形状不同和齿带不发育来看也显然不同于 *Beremendia* Kormos。另外, M. Kretzoi (1961)在与本文前一作者的通信中又提出 *Blarinoides* Sulimski 和 *Shikaimosorex* Hasegawa 应是同一属的問題,这从两属中都有較发育的齿带,第三下臼齿都显著退化来看, Kretzoi 的看法不是沒有道理的。但在目前,在 *Shikaimosorex* 沒有发现上頰齿的材料时,无法将两属的上頰齿进行比較,也很难肯定两属是否真应合为一属。无论如何,在目前大型鼯类化石的材料不很完整的情况下,企图將該类化石做一总结是一件比較困难的事情。

当第四紀初,也象今天一样,鼯类动物在旧大陆的温带分化成不少种属。在欧洲生存的現生种类有四属,而在当时却有九属之多(Bate, 1945)。在鼯类科中一些今天分布于东南亚的种类,在当时的欧洲同样也极繁多。渤海裴氏鼯代表目前在旧大陆发现的最大的化石鼯类,它的发现也說明了亚洲东部的食虫类动物羣在第四紀初已开始分化。

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## A NEW FORM OF THE SORICIDAE (INSECTIVORA) FROM THE PLEISTOCENE OF NORTH CHINA

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The aim of our paper is to describe lower jaw of an insectivore from Chiachiashan near Tangshan in North China. It is kept in the collection of the Institute of Vertebrate Palaeontology and Palaeoanthropology of the Academia Sinica. It was probably collected by W. C. Pei together with other mammalian remains from the same locality but was not mentioned in his paper (W. C. Pei, 1930). We examined it and compared with some of the recently described European, Asian and North American forms of the Insectivora. The comparison led us to the conclusion that we were dealing with a representative of a new species and genus of the Soricidae.

At Chiachiashan, in two pockets situated close together and bearing faunal remains probably of the same age, the following mammalian forms were recognized (W. C. Pei 1930): *Talpidae* indet., *Erinaceus* sp., *Canis* (*Nyctereutes*) *sinensis* Schlosser, *Ursus* sp., *Meles* sp., *Mustela* (*Putorius*) sp., ? *Hyaena* sp., ? *Machairodus* sp., *Trogontherium* cf. *cuvieri* Fischer, *Microtus* sp., *Cricetulus* sp., *Mus* cf. *rattus* L., *Siphneus* cf. *tingi* Young, *Prosiphneus* cf. *intermedius* Teilhard and Young, *Ochotona* sp., *Lepus* sp., *Equus* cf. *sanmeniensis* Teilhard and Piveteau, *Suidae* indet., *Cervus* cf. *boulei* Teilhard and Piveteau, *Bison* cf. *palaeosinensis* Teilhard and Piveteau and ? *Moschus* sp.

According to W. C. Pei (1930) the age of this fauna is intermediate between the age of the Nihowan beds and that of Loc. 1 at Choukoutien. The presence of such forms as *Prosiphneus* cf. *intermedius* suggests the Sanmenian (Villafranchian) age of the deposits. It is not possible to state now if all the above-mentioned species are exactly the same age.

***Peisorex pohaiensis* gen. et sp. nov.**

(fig. 1, a—c)

**Holotype:** Damaged mandible with  $M_1$ — $M_3$ , in the collection of the Institute of Vertebrate Palaeontology and Palaeoanthropology, Academia Sinica, in Peking. No. 2671.

**Locus and stratum typicum:** Chiachiashan near Tangshan, probably Villafranchian (Sanmenian).

**Derivatio nominis:** Generic name in honour of Prof. W. C. Pei, an eminent Chinese palaeontologist; specific name *pohaiensis* after the Pohai Sea, in the vicinity of which the locality, is situated.

**Material:** One left mandible with completely preserved proc. coronoideus and articularis, damaged proc. angularis and with its ramus broken in front of  $M_1$ ,  $M_1$ — $M_3$  being in place.

**Description:** Mandible massive. Processus coronoideus relatively narrow when seen from the side, without coronoid spicule; its articular facet simple, not divided by any incision. Proc. coronoideus inclined distally from the main axis of the lower jaw. Fossa pterygoidea deep, broadly connected with the large, round foramen mandibulare; between them there is only a relatively narrow bone bridge. Proc. articularis has a deep fossa on its upper surface. Its anterior part is separated from the posterior one by a deep incision; the anterior part, narrower at the base, expands at the distal end. Its lamina interarticularis conspicuously concave in its middle part. Facies condyli superior inclined at an angle of about  $45^\circ$ . Proc. angularis, not preserved in our specimen, was probably very weak. Its base has a conspicuous fossa, on the inner side. For mentale below the trigonid of  $M_1$ .

The crowns of molars are markedly pigmented brown. Cingulum on the first two molars developed all along their anterior and distal edges, but it is not very large. In  $M_1$  the hypoconid joins the trigonid at the depression between the protoconid and the metaconid. Talonid of  $M_3$  small with entoconid preserved but tiny.

**Dimensions:** (see Chinese text).

**Discussion:** The form described belongs undoubtedly to the family Soricidae and if we accept the classical division into subfamilies—the subfamily Soricinae. It differs markedly from all recent East-Asiatic genera of this subfamily in its large dimensions, the shape of the ascending ramus of mandible and the pigmentation of the teeth.

In the last years four new genera of large soricids were described from the Pliocene and Pleistocene of Europe, Japan and North America: *Beremendia* Kormos 1934, *Blarinoides* Sulimski 1959, *Shikaimosorex* Hasegawa 1957 and *Paracryptotis* Hibbard 1950. Our form differs from all those forms in the large connection of the fossa pterygoidea with the foramen mandibulare which are separated only by a narrow bone bridge, in the simple shape of the processus coronoideus with its articular surface undivided and devoid of a coronoid spicule, and finally in the presence of a fossa on the base of the processus angularis. All these characters suggest a peculiar form of articulation of the lower jaw with the skull and make our form stand apart from the genera mentioned above, which are nearer to each other than to *Peisorex*.

*Peisorex* differs also from *Shikaimosorex* Hasegawa in the position of the for. mentale which in the Japanese form is below the middle of  $M_1$ , and in the much weaker

cingulum and from *Paracryptotis* Hibbard in the different shape of the proc. coronoideus, the posterior margin of which as well as the upper margin of the proc. articularis seen from the distal side of the mandible is convex in *Paracryptotis*, while they are both concave in *Peisorex*.

We were able to compare *Peisorex* directly with *Beremendia fissidens* (Petényi) and *Blarinoides mariae* Sulimski from Poland. *Peisorex* differs distinctly from both. The position of the facies condyli superior in the Chinese form is intermediate between those in the two European genera, which, however, both have the lower part of the proc. articularis narrowing at the end where as it is widened in *Peisorex*.

Two species of large sorcids have been described from North China and they need to be compared with *Peisorex*. According to G. S. Miller (1927) *Neomys (Crossopus) inexpectatus* Schlosser described from Ertemte, belongs to the genus *Anourosorex* Milne-Edwards. This form (only a toothless posterior part of mandible is preserved) differs from *Peisorex* not only in its considerably smaller size but also in the shape of its fossa pterygoidea which is of the some type as in other large shrews.

Another form needs to be discussed here in detail. It is *Neomys sinensis* Zdansky 1928, described by this author from Loc. 1 at Choukoutien. Strange enough, since then this form has never been found at this locality, even in much more abundant material unearthed by C. C. Young (1934). As it has been pointed out by the last named author (1934, p. 16), it is even possible that "some confusion has been made by Zdansky in the locality". *N. sinensis* Zdansky differs from *Peisorex* in the lack of pigmentation of the teeth, the very weak development of the cingulum as well as in the lack of other characters mentioned above, characteristic of *Peisorex* alone. In the opinions of M. Kretzoi (1956) *N. sinensis* belongs to the genus *Beremendia* Kormos.

That it does not belong to *Neomys* Kaup seems obvious, but it differs from *Beremendia* Kormos in the lack of pigmentation of molars, the different shape of the proc. coronoideus and the weaker development of the cingulum. M. Kretzoi (in letter) also supposes that *Blarinoides* Sulimski and *Shikaimosorex* Hasegawa are congeneric. The much stronger reduction of  $M_3$  and the much broader cingulum in the later form refute this supposition. The definite solution of this question seems impossible without examining the upper teeth which, however, are unknown in *Shikaimosorex* Hasegawa. In any case the growing number of named forms of large sorcids claim for revision, which is rather difficult until the adequate fossil material is collected.

At any rate it is clear that at the beginning of the Quaternary the sorcids were more differentiated in the temperate area of the Old World than they are to-day. In Europe 9 genera are present at that time in comparison with 4 living there to-day (Bate, 1945), the large forms of this family, now confined to South-East Asia, were abundant in Europe at that time. *Peisorex pohaiensis* represents the largest of all the fossil sorcids so far discovered in the Old World and proves a diversity of the East Asia Insectivorous fauna at the beginning of the Quaternary.