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長陽人化石及共生的哺乳動物羣

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自从湖北省長阳县趙家堰区黃家塘乡下鍾家湾地方的一个洞穴中发現了脊椎动物化石后，湖北省文化局和長阳县文化科曾三次派人前往了解，并于1956年9月間將所得的一部分化石送交中国科学院古脊椎动物研究所鑑定。这批材料經初步观察的結果，認为十分重要，因为其中有一件人类的上頜骨是在長江以南与其相同的动物羣中从来沒有发現过的。因此，古脊椎动物研究所于1957年2、3月間又派賈蘭坡、翟人杰、黃万波等5人会同湖北省文化局徐松俊和長阳县文化科龔发达等同志前往作了一次調查和发掘。

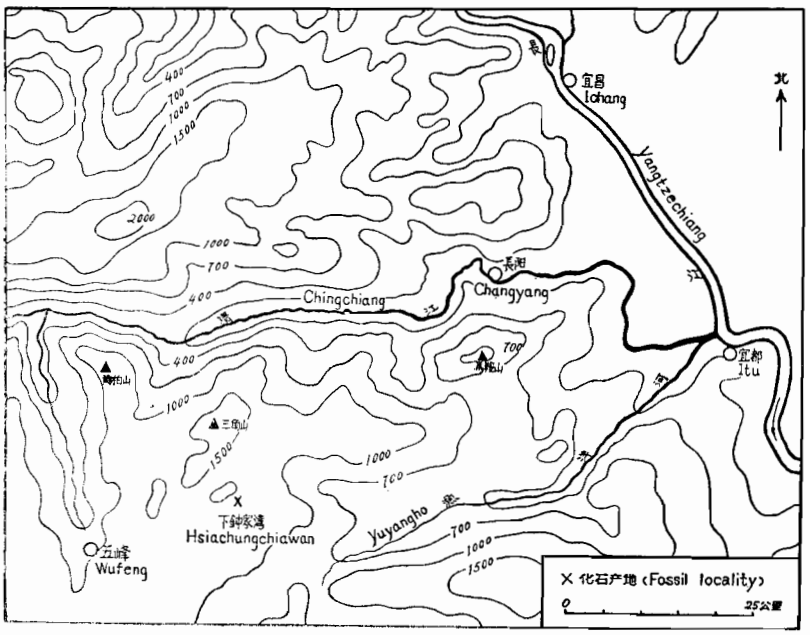

插图1. 長阳产化石地点位置簡图

产化石的洞穴名为龙洞，位于長阳西南45公里关老山的南坡（插图1及图版Ⅰ）。这一帶为宜昌石灰岩区，拔海約1300米。

龙洞洞口面向东南，离地面耕地只有 10 米左右高。洞穴的堆积除下部有大小不同的石灰岩碎块和底部靠洞壁的地方有局部的含碎石块和化石的坚硬部分可以認为是角礫岩外，大部的堆积均为深黃色松軟的沙質泥土。在角礫岩和深黃色松軟沙質泥土中均含有大量化石，但所有化石的性質相同，可以判断屬于同一时期的产物。

在这一洞穴里，虽有人类化石和大批的脊椎动物化石存在，但并未見到文化遺物和任何人类居住的痕跡，由堆积的情况观察，所有的化石显然是被水冲入的。

經过七日的发掘，我們由原生地层中和过去已挖过的松土中，又发現了一顆人类的左下第二前臼齿和許多其他的脊椎动物化石。兹根据我們这次的发現和最初发現的部分材料作如下的研究。

化 石 描 述

Ⅰ. 人 類 化 石

（1）長阳人化石（图版Ⅱ，图 1 及 2）。

由一件殘破的左上頜骨（保存有第一前臼齿及第一臼齿）（編号 V.*1681*）和一顆單独的左下第二前臼齿（編号 V.*1682*）为代表。

上頜骨保存上頜体的大部分，第一臼齿窩的后部和顴突根均遺失。左第二前臼齿保存完整。

頜的傾斜度沒有中国猿人显著，由鼻棘基部至齿槽前緣正中点向前下几乎呈一垂直綫，此种性質表示它近于正頜型。由殘留的鼻棘基部可知鼻棘較窄弱而向前，上頜竇前壁前展超过第一前臼齿，此种性質与現代人頗为接近。腭面凹凸不平与現代人相象；門齿孔和上頜間縫的下端的距离很近，也与現代人的性質近似。

由这件頜骨上观察，虽有上述的近于現代人的性質，但与現代人相比，还保持着一定的距离，因为还有下列的若干原始性質存在：梨狀孔的下部稍寬，鼻腔底壁不如現代人那样显明彎曲，此种性質与猿类接近，在中国猿人和罗坦西亞人均存在。犬齿隆凸显著，上端超过鼻腔底，此种性質表示犬齿根发达，也見于中国猿人和罗坦西亞人及其他的尼安德特人，而少見于現代人。

保存于上頜骨的第一前臼齿和第一臼齿，齿形相当的大，咬合面磨蝕甚深，但仍可以看出許多皺紋，表示具有复杂的構造。

上第一前臼齿的頰舌徑大于前后徑，頰尖稍高于舌尖，兩尖特别相向傾斜。

上第一臼齿的前尖（pa）比其他的尖为高，齿冠的頰舌徑也大于前后徑，咬合面呈方形。

下第二前臼齿，咬合面微磨，呈方形。齿冠甚低（与長寬相比）。齿冠咬合面的頰舌兩尖的內側均布有不規則的皺紋，并以頰尖和齿面的后部的皺紋为清楚。齿根甚長，舌、后兩面各有一清楚的直溝，前面靠近根尖并有一短溝，表示齿根具有 3 个分枝。

根据上述的材料观察，長阳人不仅具有現代人的性質，而且也具有一定程度的原始特征。不过就整体来說，所存在的現代人的性質比原始性質为多。

牙齒的測量（毫米）

上第一前臼齒			上第一臼齒	下第二臼齒		
齒	長	7.4	10.8	8.3	齒	7.2
	寬	10.6	12.8	10.6		9.8
冠	高	—	—	4.8	根	20.5

Ⅱ. ? 海豚科

由一單独的牙齒为代表，齒冠呈豆狀，有由齒尖向四外分布的細皺紋，齒根强大，断面呈半月形，或屬于海豚科的水生哺乳动物的牙齒（編号 V.*1683*）。

Ⅲ. 齧齒目

（1）豪豬（*Hystrix* cf. *subcristata*）（图版Ⅲ，图1）

由兩件殘破的左右下頜骨和几件零星門齒为代表（編号 V.*1665*）。頰齒均保存，兩个頜骨可能屬于同一个体。嚼肴的前端位于第四前臼齒之下，第四前臼齒的后部比前部略寬。

牙齒的測量(毫米)

	門齒	下第四前臼齒	下第一臼齒	下第二臼齒	下第三臼齒
長	—	9.8	8.0	8.0	8.8
寬	6.8	8.0	7.8	7.8	7.3

（2）竹鼠（*Rhizomys* cf. *troglodytes*）（图版Ⅱ，图3）

由一件殘破而保存有第一臼齒及第二臼齒的下頜骨为代表（編号 V.*1666*）。其性質和四川万县鹽井溝裂隙堆积中发現的竹鼠相同。

Ⅳ. 肉食目

（1）古豺（*Cuon antiquus*）（图版Ⅲ，图*2*）

由一件殘破的左下頜骨（保存有第三前臼齒至第二臼齒）及零星牙齒为代表（編号 V.*1667*）。牙齒巨大，下頜骨高厚，性質与四川万县鹽井溝更新世中期裂隙堆积中发現的古豺相同。

（2）豺（*Cuon* sp.）

由一顆殘破的左下第四前臼齒及一顆殘破的右上第四前臼齒为代表（編号 V.*1668*）。上第四前臼齒長23.0毫米，寬11.0毫米。其大小可以和豺狗（*Cuon alpinus*）相比。

（3）小熊 (*Ursus angustidens*)

由二颗上第一臼齿，一颗上第二臼齿和一颗下第二臼齿为代表（編号 V.*1669*）。牙齿較小，上第一臼齿長 17.8 毫米，寬 14.4 毫米；上第二臼齿長 27.5 毫米，寬 16.4 毫米。上第一臼齿无舌面扣帶，原尖(pr)与次尖(hy)之間有副尖。上第二臼齿的齿冠后部窄而長。依其大小与性質观察，和屬于更新世中期的周口店中国猿人化石产地所发現的小熊十分接近。

（4）熊猫 (*Ailuropus* sp.)

由一顆殘破的左下第二臼齿为代表（編号 V.*1670*）。嚼面簡單不甚粗糙，或屬于我国南部更新世中期地层中常見之熊猫 (*Ailuropus fovealis*) 的小型者。

（5）虎 (*Felis tigris*)

由零星的牙齿为代表（編号 V.*1671*）。牙齿粗大，与虎相当。

（6）猫科 (Felidae indet.)

由几顆零星牙齿为代表（編号V.*1672*）。其体积远比虎为小。

（7）獾 (*Meles* sp.)

由一件殘破的左上頜骨为代表（編号 V.*1673*）。保存有第三前臼齿至第一臼齿，未作出种的鑑定。

（8）洞穴鬣狗 (*Hyaena ultima*)（图版Ⅳ，图 1）

由一件保存有第四前臼齿和第一臼齿的殘破右下頜骨和几顆零星牙齿为代表（編号 V.*1674*）。牙齿巨大而粗壯，上第三前臼齿的前副尖較小，下第四臼齿有强大的后扣帶，下第一臼齿的下前尖(pad)比下原尖(prd)为寬；前外緣的扣帶强大，下次尖(hyd)較小。單以牙齿的構造观察，其性質与四川万县鹽井溝更新世中期裂隙堆积中的中国鬣狗 (*Hyaena sinensis*) 也很相近。

牙 齒 測 量（毫米）

	上第三前臼齿(P^3)	下第四前臼齿(P_4)	下第一臼齿(M_1)
冠長(L.)	28.5	27.5	31.8
冠寬(W.)	20.5	17.5	16.5

Ⅴ. 長 鼻 目

（1）东方劍齿象 (*Stegodon orientalis*)（图版Ⅲ，图 4 及 5）

由一个上第二乳前臼齿，二个上第三乳前臼齿和几块恆齿的殘片为代表(編号 V. *1675*)。上第二乳前臼齿呈三角形，長 24.5 毫米，寬 22.5 毫米。上第三乳前臼齿有 5 脊，齿后幷有一副脊。由第二脊至第四脊有脊中裂。左上第三乳前臼齿長 58.5 毫米，寬 45.0 毫米；右上第三乳前臼齿長 63.5 毫米，寬 48.0 毫米。

Ⅵ. 奇 蹄 目

（1）巨獏 (*Megatapirus augustus*)（图版Ⅳ，图 2）

由一件保存有第一臼齿至第三臼齿的右下頜骨和几顆零星牙齿为代表(編号 V.*1676*)。

牙齿巨大，臼齿前后的扣帶均发达。其大小和性質与四川万县鹽井溝、云南富民县河上洞等地更新世中期地层中常見之巨獏相同。

牙 齒 測 量 （毫米）

	下第二臼齿(M_2)	下第三臼齿(M_3)
冠長(L.)	35.5	36.0
冠寬(W.)	26.5	27.0

（2）中国犀 (*Rhinoceros sinensis*)（图版Ⅲ，图3）

由一件保存有第四前臼齿至第二臼齿的殘破的右上頜骨和一件門齿及几件殘破零星上下臼齿为代表（編号 V.*1677*）。

臼齿冠中等高。上第四前臼齿長51毫米，寬47毫米；上第一臼齿長58毫米，寬52毫米。上第四前臼齿的外稜 (ectoloph) 釉質向中竇 (medisinus) 展出許多不規則的脊，以致使小脊 (crista) 和小突 (crochet) 都不易区分。

上第四前臼齿及上第一臼齿的前外稜发达，后外稜細弱。上第一臼齿及上第二臼齿的原横稜 (protoloph) 的前后面和后横稜 (metaloph) 的前面有直豎之溝。在上第四前臼齿的原横稜与后横稜之間有一乳形突起。小突强大，小脊和前小突細弱。前扣帶发达，并延展至原横稜的舌面。上述的性質与我国华南各地更新世中期堆积中发現的中国犀牛相同。

Ⅶ. 偶　蹄　類

（1）猪 (*Sus* sp.)

由一顆下第四前臼齿为代表（編号 V.*1678*）。

（2）牛科1 (Bovidae indet.)

此种化石頗为丰富，但以一些殘破的上、下頜骨和大批的零星牙齿为代表(編号V.*1679*)。其中有一部分牙齿齿冠甚高，牙磁較厚，表面并包有甚厚之垩質，可能为水牛 (*Bubalus*) 的牙齿。

（3）牛科2

由一个上第一臼齿（或第二臼齿）与一个上第三臼齿为代表（編号 V.*1680*）。前者較小，后者較大。冠長36毫米，寬24毫米，或屬于大型的轉角羚羊 (*Spirocerus*)。

（4）鹿科 (Cervidae indet.)

由殘破的角尖、几块下頜骨和許多零星牙齿为代表（編号 V.*1681*）。下頜骨和牙齿分为大小兩型。大型者由粗壯的現象观察均与水鹿 (*Rusa*) 相近；小型者，下第二臼齿長20.0毫米，寬13.5毫米；下第三臼齿長25.5毫米，寬13.8毫米，下頜骨不厚，下緣虽然殘破不全，但表示不高，根据其性質与大小，可能屬于斑鹿 (*Pseudaxis*)。

結　　論

由長阳县下鍾家湾龙洞中发現的哺乳动物化石，很清楚是屬于熊猫—劍齿象动物羣的性質。此种动物羣在我国南部地区分布很广，在江苏、广西、貴州、云南和四川等地的洞穴中均有发現。我們这次所得到的材料特别与四川万县鹽井溝所发現者十分相似。

过去，在这一动物羣里，从来沒有发現过有如上述性質的人类的任何材料，因此这一发現不仅給这一动物羣增加了新的种屬并为地层的划分提出新的証据，同时給人类本身的分布与演化也提供了新的資料。

根据过去的記載是將熊猫—劍齿象动物羣的时代定为更新世初期（后來有些中国的地質学家根据第 18 次国际地質学会的决議上提为更新世中期，將泥河湾期改为初期）即与周口店中国猿人化石产地的时代相当。

但根据我們此次对長阳人材料的观察，認为它近于現代人的性質較多，远沒有中国猿人那么原始，因此，我們認为熊猫—劍齿象动物羣的时代应比中国猿人化石产地較晚，似已接近于更新世中期的后期。

NOTES ON THE HUMAN AND SOME OTHER MAMMALIAN REMAINS FROM CHANGYANG, HUPEI

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SUMMARY

INTRODUCTION

One piece of fossil human maxilla and some mammalian fossils were recently collected in the cave "Lungtung" at Hsiachungchiawan village of Ichang limestone area, about 45 km southwest of the Changyang City and about 1300 m above the sea level (Text-fig. 1 and Plate I, Figs. 1 and 2).

The deposits of the Lungtung-cave consist of a fine sandy dark yellow clay, with abundant limestone fragments at the bottom. Besides there are patches of breccia in the lower part of the cavern recess. The human material was found in the dark yellow clay. There are neither trace of artifacts nor indications of human occupation.

DESCRIPTION OF FOSSILS

I. Human Remains

(1) Human fossils (Plate II, Figs. 1 and 2)

The material consists of one fragment of the left maxilla with two teeth (P^1 and M^1 (Cat. No. V. 1681) and one isolated left P_2 (Cat. No. V. 1682).

The maxilla comprises the great part of the body, its posterior part behind the socket of M^1 was missing.

The alveolar portion of the jaw is nearly orthognathous. From the remaining base of anterior nasal spine, it indicates that the spine is weak and facing forward. The anterior wall of sinus maxillaris extends forward beyond the P^1. The palatal surface is rugged. The incisive foramen lies very close to the alveolar margin as in the recent man.

Although these features are similar to modern man, but it also possesses the following primitive characters: the lower part of nasal aperture is relatively wide and the lateral wall is not much curved in comparison with the recent man. The canine eminence is very strong and extends upward beyond the nasal floor, indicating that the root of canine is well developed as in *Sinanthropus*, Rodensian and some other Neanderthalians.

The P^1 and M^1 connected with the maxilla are rather worn, but many wrinkles still can be seen on the chewing surface. The crown of P^1 is much more developed in buccolingual direction than in mesiodistal. The buccal cusp of P^1 is larger and higher than the lingual, and both cusps strongly incline toward the tip of their respective cusp. The paracone of M^1 is the highest cusp, its crown is broader than long and with rectangular chewing surface.

The chewing surface of P_2 also rectangular. The crown is characterized by it lowness in relation to its length and breadth. The slopes of both cusps are covered by a number of irregular wrinkles, being more distinct in the buccal slope and the distal part.

The root of P_2 is very strong. Its lingual and distal sides show distinct vertical furrows and a short cleft on the mesial portion near its apex.

The crown and root of this tooth is much bigger and complex in its pattern than those of recent man, but smaller and simple than the same tooth of *Sinanthropus*.

Measurements (in mm)

		P^1	M^1	P_2		
Crown:	Length	7.4	10.8	8.3	Root:	7.2
	Breadth	10.6	12.8	10.6		9.8
	Height	—	—	4.8		20.5

Considered as a whole, the Changyang human fossil is apparently close to the recent man than those of *Sinanthropus*.

II. Delphinidae (?)

Represented by one isolated tooth (Cat. No. V. 1683).

III. Rodentia

(1) *Hystrix* cf. *subcristata* Swinhoe (Plate III, Fig. 1)

Two fragmentary lower jaws (left and right) and a few isolated teeth (Cat. No. V. 1665). Both lower jaws probably belong to the same individual. All cheek teeth preserved. The anterior end of masseteric crest is set at a place below P_4 and the posterior portion of P_4 is a little expanded than the anterior.

Measurements (in mm)

	I	P_4	M_1	M_2	M_3
Length	—	9.8	8.0	8.0	8.8
Breadth	6.8	8.0	7.8	7.8	7.3

(2) *Rhizomys* cf. *troglodytes* Matthew and Granger (Plate II, Fig. 3)

A left lower jaw with M_2 and M_3 (Cat. No. V. 1666). It is similar to the form found in Wanhsien pits of Szechuan.

IV. Carnivora

(1) *Cuon antiquus* Matthew and Granger (Plate III, Fig. 2)

A broken left lower jaw and a few isolated teeth (Cat. No. V. 1667). The size of the teeth is large and the mandible is robust. They are comparable with the *Cuon antiquus* from Wanhsien.

(2) *Cuon* sp.

A broken left P_4 and I right P^4 (Cat. No. V. 1668). Similar to *Cuon alpinus* Pallas in size.

(3) *Ursus angustidens* Zdansky

2 M^1, 1 M^2 and 1 M_2 (Cat. No. V. 1669). Size small. Length and breadth of M^1, 17.8 and 14.4 mm; M^2, 27.5 and 16.0. M^1, no lingual cingulum, accessory cusp between protocone and hypocone present. The posterior part of crown of M^2 is rather narrow and elongated.

(4) *Ailuropus* sp.

A broken left M_2 (Cat. No. V. 1670). Crown surface is not more corrugated. It probably belongs to *Ailuropus fovealis*.

(5) *Felis tigris* L.

A few isolated teeth (Cat. No. V. 1671).

(6) Felidae indet.

A few isolated teeth (Cat. No. V. 1672). Much smaller than that of *F. tigris*.

(7) *Meles* sp.

One fragmentary upper jaw with P^3—M^1 (Cat. No. V. 1673).

(8) *Hyaena ultima* Matsumoto (Plate IV, Fig. 1)

One fragmentary lower jaw with P_4 and M_1, and several isolated teeth (Cat. No. V. 1674). Size large and robust. P^3, anterior accessory cusp is small and P_4 with a stronger posterior cingulum. M_1, paraconid broader than the protoconid, anterobuccal cingulum strong, hypoconid small.

V. Proboscidea

(1) *Stegodon orientalis* Owen (Plate III, Figs. 4 and 5)

1 DP^2, 2 DP^3 and several broken lamellae of permanent teeth (Cat. No. V. 1675). DP^2, in triangular form; length and breadth, 24.5 and 22.5. DP^3, had five ridge crests and a fractional crest at the posterior end. Ridge II—IV with a median cleft. Length and breadth of left DP^3, 58.5 and 45.0; right DP^3, 63.5 and 48.0 mm.

VI. Perissodactyla

(1) *Megatapirus augustus* Matthew and Granger (Plate IV, Fig. 2)

One broken right lower jaw (with M_1—M_3) and a few isolated teeth (Cat. No. V. 1676). Cheek teeth are characterized by relatively heavy anterior and posterior cingulum. The size and general characters are very similar to the *Megatapirus augustus* of Wanhsien and Yunnan.

(2) *Rhinoceros sinensis* Owen (Plate III, Fig. 3)

A fragmentary right upper jaw with P^4—M^2, 1 incisor and several isolated molars (Cat. No. V. 1677).

Molars moderately hypsodont. P^4, enamel projections from the ectoloph in the medisinus, the crista and crochet are not separated. M^1 and M^2, with a vertical groove in anterior and posterior surfaces of protoloph and a vertical groove in anterior surface of metaloph; crochet strong; crista and antecrochet weak; anterior cingulum strong and extending to the inner surface of the protoloph; a few sharp tubercles presents between the crista and crochet.

Measurements (in mm)

	P^4	M^1
Length	51.0	58.0
Breadth	47.0	52.0

VII. Artiodactyla

(1) *Sus* sp. 1 P_4 (Cat. No. V. 1678).

(2) Bovidae indet. 1.

Traces of Bovidae in our collection is very abundant, but it is represented only by isolated teeth (Cat. No. V. 1679). Some of them, crown very high and the upper molars show a coarse enamel and a thick cement cover. This may be referable to the *Bubalus*.

(3) Bovidae indet. 2.

1 M^1 (or M^2) and 1 M^3 (Cat. No. V. 1680). M^3, size large, max. length and breadth, 36.0 and 24.0 mm. It seems to be rather close to *Spirocerus*.

(4) Cervidae indet.

One piece of antler, several fragmentary lower jaws and many isolated teeth (Cat. No. V. 1681). The teeth are very variable in size. Some of them are large and robust, possibly belong to *Rusa*. And some teeth are small, especially the characters of antler are apparently similar to the *Pseudaxis*.

Conclusions

Palaeontologically, the Lungtung-cave fauna is the same as that of the *Ailuropus–Stegodon* fauna widely distributed in the south of Yangtzechiang such as Kiangsu, Kwangsi, Kueichow, Yunnan and Szechuan Provinces. And our material are obviously the same as that known from Wanhsien Pits in Szechuan.

The geological age of the *Ailuropus – Stegodon* fauna was regarded as middle Pleistocene and corresponds to the *Sinanthropus* site of Choukoutien.

The human material from Changyang are more close to the recent man than that of the *Sinanthropus*. Possibly that the deposit of *Ailuropus – Stegodon* fauna is younger than the *Sinanthropus* site of Choukoutien. It seems to the present writer that the age of *Ailuropus – Stegodon* fauna is probably late Middle Pleistocene.

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圖版 I 說明

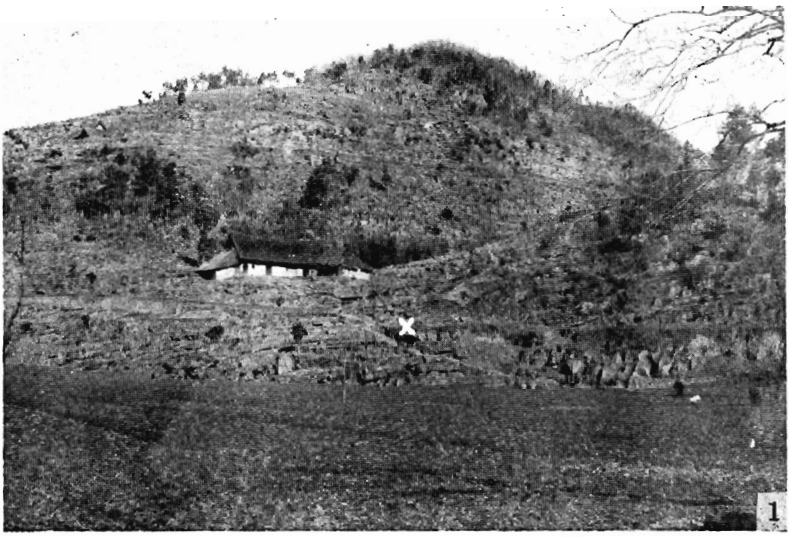
图 1. 龙洞远景(白×字为洞口处);

图 2. 龙洞进口(洞口向东南).

EXPLANATION OF PLATE I

Fig. 1. Distant view of the Lungtung-cave (cross).

Fig. 2. Entrance of Lungtung-cave (facing to southeast).



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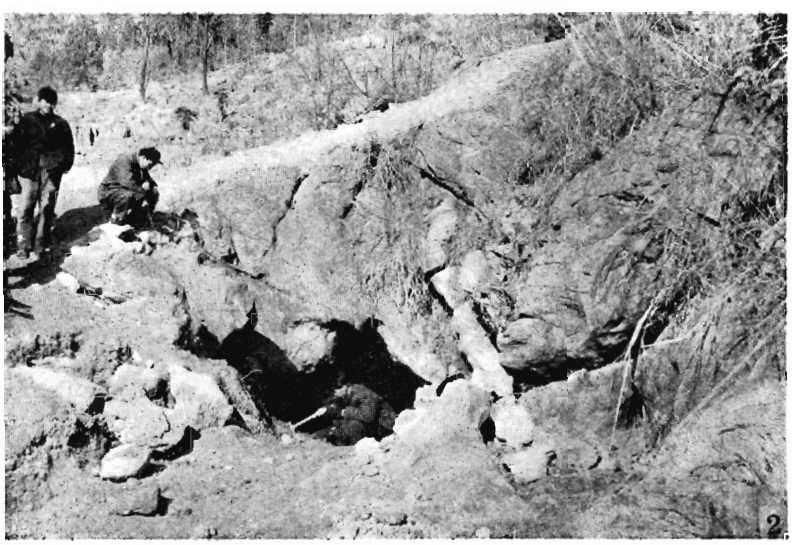

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圖版 II 說明

图 1. 長汞人，左下第二前臼齿，原大：

a. 自頰面觀；

b. 自后面觀；

c. 自舌面觀；

d. 自前面觀；

e. 自咬面觀；

图 2. 長汞人，左上頷骨，原大：

a. 自外側面觀；

b. 自內側面觀；

c. 自前面觀；

d. 自后面觀；

e. 自下面觀；

图 3. 竹鼠，左下頷骨，原大。

EXPLANATION OF PLATE II

Fig. 1, Human fossil, left P_2, natural size.

a, buccal view;

b, distal view;

c, lingual view;

d, mesial view;

e, occlusal view.

Fig. 2, Human fossil, left maxilla, natural size.

a, lateral view;

b, medial view;

c, frontal view;

d, posterior view;

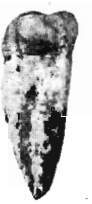
e, view from below.

Fig. 3, *Rhizomys* cf. *troglodytes* Matthew and Granger, left lower jaw; 2 views, natural size.

1a

1b

1c



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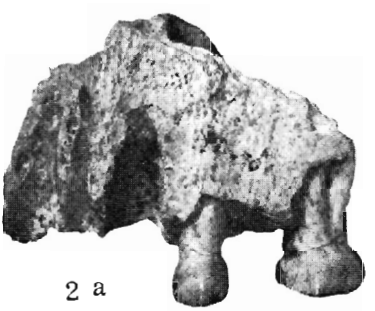

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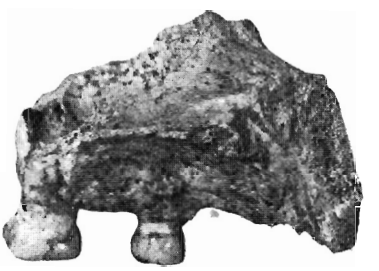

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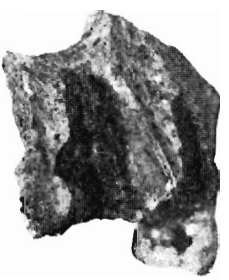

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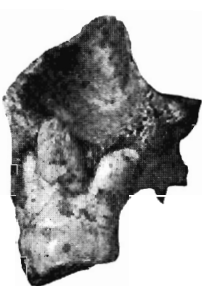

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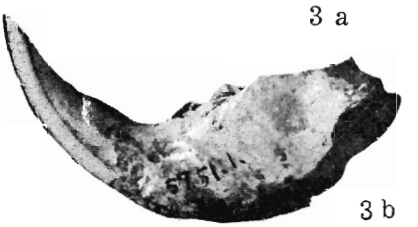
3a



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圖版 III 說明

图 1. 豪猪，左下頜骨，原大；

图 2. 古豺，左下頜骨，原大；

图 3. 中国犀，右上頜骨，縮小½；

图 4. 东方剑齿象，左第二乳前臼齿，原大；

图 5. 东方剑齿象，左第三乳前臼齿，原大.

EXPLANATION OF PLATE III

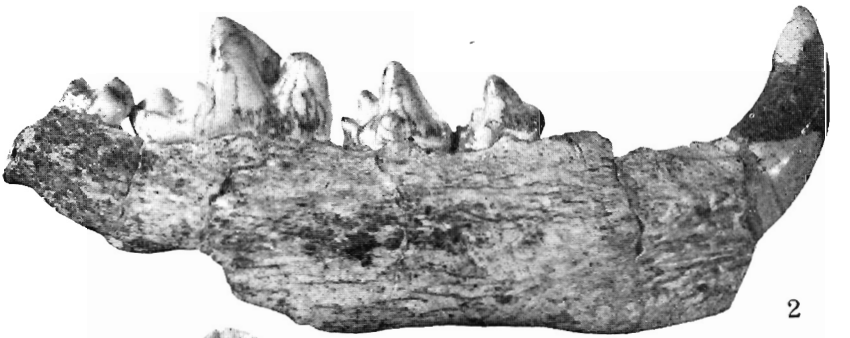
Fig. 1, *Hystrix* cf. *subcristata* Swinhoe, left lower jaw, 2 views, natural size.

Fig. 2, *Cuon antiquus* Matthew and Granger, left lower jaw, natural size.

Fig. 3, *Rhinoceros sinensis* Owen, right upper jaw, ½ natural size.

Fig. 4, *Stegodon orientalis* Owen, left DP^2, natural size.

Fig. 5, *Stegodon orientalis* Owen, left DP^3, natural size.



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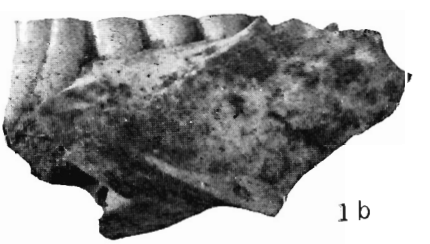

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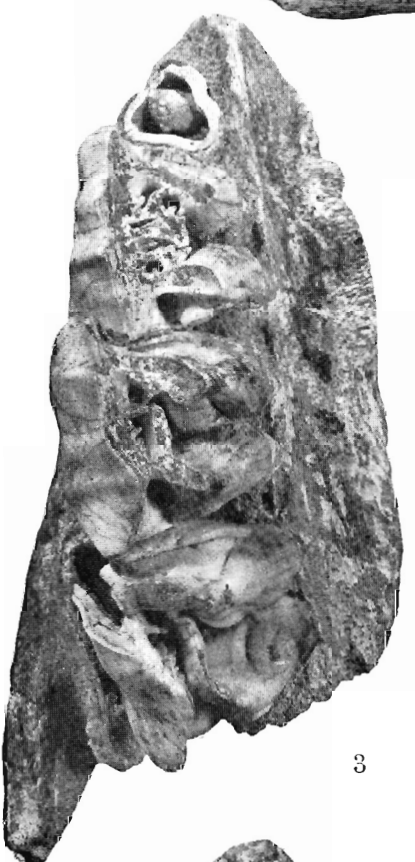

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圖版 IV 說明

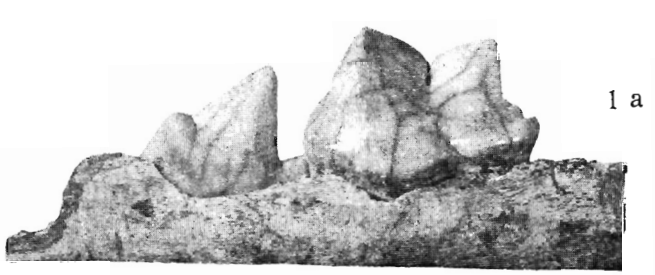
図 1，洞穴鬣狗，右下顎骨，原大；

図 2，五模，右下顎骨，原大.

EXPLANATION OF PLATE IV

Fig. 1. *Hyaena ultima* Matsumoto, right lower jaw, 3 views, natural size.

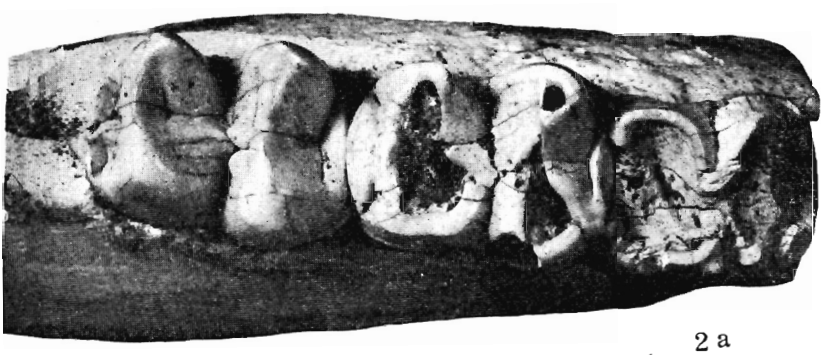
Fig. 2. *Megatapirus augustus* Matthew and Granger broken right lower jaw, 2 views, natural size.



1 a

1 b

1 c



2 a

2 b