

关于中国南方剑齿象-熊猫动物羣 和巨猿的时代

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通过 1957—1960 年間,在华南地区的野外工作,发现了剑齿象-熊猫 (*Stegodon-Ailuropoda*) 动物羣的許多新的化石地点。从广西大兴县牛睡山和柳城楞寨山两个地点发现了出乎意外的大量的巨猿 (*Gigantopithecus*) 牙齿(約 900 个包括 3 个保存很好的下颌骨)。这些材料已有了初步的报导。^[185, 129, 118—124, 14—16, 128] 随着这些发现的发表,对于步氏巨猿 (*Gigantopithecus blacki*) 的系統关系和时代問題发生了不同的意見。^[185, 129, 118—123, 128, 15, 40—43, 72, 88, 89, 138, 140]

依据孔尼华(Koenigswald G. H. R. V.)在广州^[76]等地发现的几个零星的巨猿牙齿,一直到 1956 年沒有确实的地层时代^[76]。但是,事实很明显,这些牙齿一定出产于广西和广东等地洞穴或裂縫堆积中,但在那时候沒有一个肯定的地点记录。和孔尼华在中国广州等城鎮以及东南亚药鋪中得到的最初几个巨猿牙齿有关的、許多后来发现的、在整体上和巨猿牙齿的石化程度表現同样等級的化石,孔尼华^[76]及其他学者^[152, 120]曾考虑它們属于同一动物羣。

一、广西、广东洞穴和裂縫中的“药鋪动物羣”

×	中国猿人药鋪种	<i>Pithecanthropus officinalis</i> (v. Koenigswald)
×	猩猩	<i>Pongo pygmaeus weidenreichi</i> Hooijer
	步氏巨猿	<i>Gigantopithecus blacki</i> v. Koenigswald
	长臂猿	<i>Hylobates (Bunopithecus) sericus</i> Matthew and Granger
	长臂猿	<i>Hylobates</i> cf. <i>lar</i> Linnaeus
×	金絲猴	<i>Rhinopithecus roxellanae tingianus</i> Matthew and Granger
	猕猴	<i>Macaca</i> sp.
	豪猪	<i>Hystrix</i> sp.
×	古豺	<i>Cuon antiquus antiquus</i> Matthew and Granger
×	可氏熊	<i>Ursus thibetanus kokeni</i> Matthew and Granger
	小熊	<i>Ursus angustidens</i> Zdansky
	原熊	<i>Ursus praemalayanus</i> v. Koenigswald

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	熊	<i>Ursus</i> sp.
×	熊猫	<i>Ailuropoda melanoleuca fovealis</i> Matthew and Granger
×	沙獾	<i>Arctonyx collaris rostratus</i> Matthew and Granger
	灵猫	<i>Viverra</i> sp.
×	鬣狗	<i>Crocuta ultima</i> (Matsumoto)
×	虎	<i>Panthera tigris</i> (Linnaeus)
	虎	<i>Felis</i> sp.
×	东方剑齿象	<i>Stegodon orientalis</i> Owen
×	拿馬古象	<i>Palaeoloxodon</i> cf. <i>namadicus</i> (Falconer and Cautley)
×	象	<i>Elephas</i> sp.
	中国獐	<i>Tapirius sinensis</i> Owen
×	巨獐	<i>Megatapirius augustus</i> Matthew and Granger
	中国犀	<i>Rhinoceros sinensis</i> Owen
×	犀牛	<i>Rhinoceros</i> sp.
	猪	<i>Sus</i> sp.
×	鹿	<i>Cervus</i> sp. A
×	鹿	<i>Cervus</i> sp. B
×	麂	<i>Muntiacus</i> sp.
×	?羚羊	? <i>Antilops</i> sp.
×	羊类	Ovidae gen. et sp. indet.
×	鬣羚	<i>Capricornis sumatrensis kanjercus</i> Colbert and Hooijer
	牛	<i>Bos</i> sp.

(×=修訂后名称,参看[84])

这个发现于药铺的动物羣和中国南方洞穴及裂縫堆积动物羣比較,我們可以看出它們主要包含有中更新世晚期剑齿象-熊猫动物羣^[156,147,88,152,57,120]沉积中(广义的、黄色洞穴堆积)已有記載的种类。

在中国南方的云南、四川、湖北、湖南、貴州、广西、江西、广东、江苏、浙江和福建(华南动物地理区)^[120]各省内关于上新世-更新世的地层,直到今天还是知道得很少。虽然起源于这些省份的相当多的化石(药用骨头)已經在19世紀末和稍晚期^[109,31,90,139]已經进行了描述,但是得到肯定地点记录的第一个化石动物羣还是晚在1923年的事^[102,100]。其后,在1929和1932年楊鍾健描述了广西^[174]梧州和云南富民普渡河西岸河上洞^[175]的化石,王恭睦^[163]、张席禔^[10]和裴文中^[111]又发表了一些材料。在这时候(1935年)裴文中已經認識了中更新世^[114](广义的)华南动物地理区的基本面貌。

最近几年发掘了一些有地层记录的新材料。周明鎮并对华南洞穴及裂縫堆积作了对比^[15]。

二、中国南方剑齿象-熊猫动物羣的地点

(一) 云 南

1. 富民西南普渡河岸河上洞的剑齿象-熊猫动物羣^[175,4]

猩猩 *Pongo pygmaeus weidenreichi* Hooijer

弥猴	<i>Macaca</i> sp.
豪猪	<i>Hystrix</i> sp.
小熊	<i>Ursus angustidens</i> Zdansky
熊猫	<i>Ailuropoda melanoleuca foucalis</i> Matthew and Granger
小熊猫	<i>Ailurus fulgens</i> Thomas
沙獾	<i>Arctonyx</i> sp.
鬣狗	<i>Crocuta ultima</i> (Matsumoto)
虎	<i>Panthera</i> cf. <i>tigris</i> (Linnaeus)
豹	<i>Panthera</i> cf. <i>pardus</i> (Linnaeus)
猞猁	<i>Lynx</i> cf. <i>lynx</i> (Linnaeus)
剑齿象	<i>Stegodon</i> sp.
拿馬古象	<i>Palaeoloxodon</i> cf. <i>namadicus</i> (Falconer and Cantley)
巨猿	<i>Megatapirus</i> cf. <i>augustus</i> Matthew and Granger
犀牛	<i>Rhinoceros</i> sp.
猪	<i>Sus</i> sp.
?黑鹿	? <i>Rusa</i> sp. I
?黑鹿	? <i>Rusa</i> sp. II
鹿	<i>Muntiacus</i> sp.
羊类 I	Ovinae gen. et sp. indet. I
羊类 II	Ovinae gen. et sp. indet. II
牛类	Bovidae gen. et sp. indet.

2. 邱北黑箐龙村的剑齿象-熊猫动物羣^[4]

弥猴	<i>Macaca</i> sp.
狗科	Canidae gen. et sp. indet.
熊科	Ursidae gen. et sp. indet.
虎亚科	Felinae gen. et sp. indet.
中国虎	<i>Felis</i> cf. <i>chinensis</i> Gray
豹	<i>Panthera pardus</i> (Linnaeus)
鹿	<i>Cervus</i> sp.

3. 富民大宰格附近洞穴中的剑齿象-熊猫动物羣(广义的)^[187]

豪猪	<i>Hystrix</i> sp.
狗科	Canidae gen. et sp. indet.
猪科	Suidae gen. et sp. indet.
馬	<i>Equus</i> sp.
鹿科	Cervidae gen. et sp. indet.
山羊亚科	Ovicaprinae gen. et sp. indet.
牛亚科	Bovinae gen. et sp. indet.

4. 元謀(馬街河谷)的剑齿象-熊猫动物羣^[22,24]

剑齿象	<i>Stegodon</i> sp.
犀牛	<i>Rhinoceros</i> sp.
云南馬	<i>Equus yunnanensis</i> Colbert

猪	<i>Sus</i> sp.
鹿	<i>Cervus</i> sp. (A)
鹿	<i>Cervus</i> sp. (B)
牛	<i>Bos</i> (<i>Bibos</i>) (?)

(二) 广 西

5. 桂林北新开村(39 地点, E 洞)附近洞穴中的剑齿象-熊猫动物羣^[10,11]

猩猩	<i>Pongo pygmaeus weidenreichi</i> Hooijer
豪猪	<i>Hystrix</i> sp.
狗科	Canidae gen. et sp. indet.
可氏熊	<i>Ursus thibetanus hokeni</i> Matthew and Granger
大熊猫	<i>Ailuropoda melanoleuca forealis</i> Matthew and Granger
沙獾	<i>Arctonyx collaris</i> cf. <i>rostratus</i> Matthew and Granger
鬣狗	<i>Crocuta ultima</i> (Matsumoto)
虎	<i>Panthera</i> cf. <i>tigris</i> (Linnaeus)
虎	<i>Felis</i> sp.
东方剑齿象	<i>Stegodon</i> cf. <i>orientalis</i> Owen
古象	<i>Palaeoloxodon</i> sp.
中国獐	<i>Tapirus sinensis</i> Owen
中国犀	<i>Rhinoceros sinensis</i> Owen
猪	<i>Sus</i> sp.
?黑鹿	? <i>Rusa</i> sp. I
?黑鹿	? <i>Rusa</i> sp. II
麂	<i>Muntiacus</i> sp.
牛类	Bovidae gen. et sp. indet.

6. ? 梧州附近洞穴中的剑齿象-熊猫动物羣^[17]

中国竹鼠	<i>Rhizomys sinensis</i> Gray
?黑鹿	? <i>Rusa</i> sp.
麂	<i>Muntiacus</i> sp.

7. 柳城新社冲村附近巨猿洞的剑齿象-熊猫动物羣(广义的)^[185,118-123]

猩猩	<i>Pongo</i> sp.
步氏巨猿	<i>Gigantopithecus blacki</i> v. Koenigswald
灵长类	Primates indet.
豪猪	<i>Hystrix</i> cf. <i>subcristata</i> Swinhoe
果子狸	<i>Paguma</i> ? <i>larvata</i> (Smith)
豺	<i>Cuon</i> sp.
熊	<i>Ursus</i> n. sp.
熊猫	<i>Ailuropoda</i> n. sp.
虎	<i>Felis</i> sp.
短吻鬣狗	<i>Hyaena brevirostris licenti</i> Pei
乳齿象	<i>Mastodon</i> sp.
原东方剑齿象	<i>Stegodon preorientalis</i> Young

爪蹄兽类	Chalicotheriidae gen. et sp. indet.
獾	<i>Tapirus</i> sp.
中国犀	<i>Rhinoceros sinensis</i> Owen
云南馬	<i>Equus yunnanensis</i> Colbert
猪	<i>Sus scrofa</i> Linnaeus
猪	<i>Sus</i> sp. I
猪	<i>Sus</i> sp. II
鹿类	Cervidae gen. et sp. indet.
牛类	Bovidae gen. et sp. indet.
羊类	Oyinae gen. et sp. indet.

8. 大兴牛睡山剑齿象-熊猫动物羣^[185,129,120,121,125,126]

猩猩	<i>Pongo</i> sp.
步氏巨猿	<i>Gigantopithecus blacki</i> v. Koenigswald
豪猪	<i>Hystrix subcristata</i> Swinhoe
沙獾	<i>Arctonyx collaris rostratus</i> Matthew and Granger
果子狸	<i>Paguma larvata</i> (Smith)
豺	<i>Cuon</i> sp.
可氏熊	<i>Ursus thibetanus kokeni</i> Matthew and Granger
熊猫	<i>Ailuropoda</i> sp.
虎	<i>Felis</i> sp.
剑齿象	<i>Stegodon</i> sp.
巨獾	<i>Megatapirus</i> sp.
中国犀	<i>Rhinoceros sinensis</i> Owen
猪类	Suidae gen. et sp. indet.
鹿科	Cervidae gen. et sp. indet.
牛类	Bovidae gen. et sp. indet.

9. 来宾附近洞穴中的剑齿象-熊猫动物羣^[185,120,13]

动物羣沒有描述。

10. 柳城封門山洞剑齿象-熊猫动物羣

动物羣沒有描述。

11. 桂林李家山村附近掛子山洞中的剑齿象-熊猫动物羣

动物羣沒有描述。

12. 阳朔龙洞剑齿象-熊猫动物羣

动物羣沒有描述。

(三) 浙 江

13. 留下洞穴的剑齿象-熊猫动物羣^[127,120]

鬣狗	<i>Crocuta ultima</i> (Matsumoto)
东方剑齿象	<i>Stegodon</i> cf. <i>orientalis</i> Owen
古象	<i>Palaeloxodon</i> sp.
中国犀	<i>Rhinoceros sinensis</i> Owen

猪 *Sus* sp.

斑鹿 *Sika* sp.

14. 江山附近曹天坊村洞穴中的剑齿象-熊猫动物羣^[163,120]

江山豪猪 *Hystrix kiangsensis* Wang

熊 *Ursus* sp.

剑齿象 *Stegodon* sp.

犀牛 *Rhinoceros* sp.

猪 *Sus* sp.

麂 *Muntiacus* sp. A

鹿 *Muntiacus* sp. B

黑鹿 *Rusa* sp.

鹿类 *Cervidae* gen. et sp. indet.

(四) 四 川

15. 万县西南盐井沟村裂缝堆积中的剑齿象-熊猫动物羣¹⁾。中国南方剑齿象-熊猫动物羣(狭义的)原型地点^[102,107,33,34,19,176,178,180,46,54,55,67,75,91,120,184]

金絲猴 *Rhinopithecus roxellanae tingianus* Matthew and Granger

长臂猿 *Hylobates (Bunopithecus) sericus* Matthew and Granger

兔 *Lepus* sp.

中国竹鼠 *Rhizomys sinensis troglodytes* Matthew and Granger

豪猪 *Hystrix* cf. *subcristata* Swinhoe

豺 *Cuon antiquus antiquus* Matthew and Granger

可氏熊 *Ursus thibetanus kokeni* Matthew and Granger

熊猫 *Ailuropoda melanoleuca fovealis* Matthew and Granger

密狗 *Charronia flavigula tyrannus* Colbert and Hooijer

沙獾 *Arctonyx collaris rostratus* Matthew and Granger

沙獾 *Arctonyx collaris collaris* Cuvier

灵猫 *Viverra zibetha expectata* Colbert and Hooijer

鬣狗 *Hyaena brevirostris sinensis* Owen

虎 *Panthera tigris* (Linnaeus)

虎 *Felis* sp.

东方剑齿象 *Stegodon orientalis* Owen

拿馬古象 *Palaeoloxodon namadicus* (Falconer and Cautley)

Nestoritherium sinense (Owen)

巨獾 *Megatapirus augustus* Matthew and Granger

中国犀牛 *Rhinoceros sinensis* Owen

猪 *Sus scrofa* Linnaeus

黑鹿 *Rusa unicolor* (Kerr)

麝 *Moschus moschiferus plicodon* Colbert and Hooijer

鹿 *Muntiacus muntjak margae* Hooijer

1) 盐井沟“动物羣”与楊(1939)和孔尼华(1952)記載的比較似乎代表不同地层中的化石(参看表,盐井沟1—2)。

毛冠鹿	<i>Elaphodus cephalophus megalodon</i> Hooijer
水牛	<i>Bubalus bubalis</i> (Linnaeus)
野牛	<i>Bibos gaurus grangeri</i> Colbert and Hooijer
山羊	<i>Capricornis sumatrensis kanjerreus</i> Colbert and Hooijer
青羊	<i>Naemorhedus goral</i> (Hardwicke)

16. 重庆附近歌乐山剑齿象-熊猫动物羣^[183]

猕猴	<i>Macaca robustus</i> Young
四川猴	<i>Szechuanopithecus yangtsensis</i> Young and Liu
黄鼠	<i>Citellus</i> sp.
鼯鼠	<i>Petaurista</i> sp.
鼯鼠	<i>Petaurista</i> cf. <i>brachyodus</i> Young
短竹鼠	<i>Brachyrhizomys ultimus</i> Young and Liu
鼯鼠	<i>Ellobius</i> sp.
竹鼠	<i>Rhizomys provestitus</i> Young and Liu
四川竹鼠	<i>Rhizomys szechuanensis</i> Young and Liu
	<i>Sylvaemus sylvaticus</i> (Linnaeus)
爱氏家鼠	<i>Rattus</i> cf. <i>edwardsi</i> (Thomas)
家鼠	<i>Rattus rattus</i> (Linnaeus)
豪猪	<i>Hystrix subcristata</i> Swinhoe
歌乐山刺猬	<i>Erinaceus koloshanensis</i> Young and Liu
短尾鼯	<i>Anourosorex kui</i> Young and Liu
蹠足鼯	<i>Nectogale</i> sp.
白鼯	<i>Scaptoschirus moschatus</i> Milne-Edwards
蝙蝠	<i>Myotis</i> sp.
狗	<i>Canis</i> sp.
豺	<i>Cuon simplicidens</i> Young and Liu
可氏熊	<i>Ursus thibetanus kokeni</i> Matthew and Granger
熊猫	<i>Ailuropoda melanoleuca fovealis</i> Matthew and Granger
艾虎	<i>Putorius sibiricus</i> (Pallas)
貂	<i>Martes sinensis</i> Young and Liu
付獾	<i>Parameles simplicidens</i> Young and Liu
虎	<i>Panthera tigris</i> (Linnaeus)
巨獾	<i>Megatapirus augustus</i> Matthew and Granger
中国犀	<i>Rhinoceros sinensis</i> Owen
猪	<i>Sus</i> sp.
四川鹿	<i>Muntiacus szechuanensis</i> (Young and Liu)
?四川鹿	? <i>Muntiacus szechuanensis</i> (Young and Liu)
黑鹿	<i>Rusa</i> sp.
短角水牛	<i>Bubalus</i> cf. <i>brevicornis</i> Young
羊	<i>Ovis</i> sp.

17. 自流井楊家冲剑齿象-熊猫动物羣^[103]

- | | |
|------|------------------------------------------|
| 短吻鬣狗 | <i>Hyaena brevirostris sinensis</i> Owen |
| 猪 | <i>Sus</i> sp. |
| 牛类 | Bovidae gen. et sp. indet. |
18. 重庆巴县和尚坡剑齿象-熊猫动物羣^[187]
- | | |
|-----|-----------------------------------|
| 猕猴 | <i>Macaca</i> sp. |
| 豪猪 | <i>Hystrix</i> sp. |
| 狗类 | Canidae gen. et sp. indet. |
| 剑齿象 | <i>Stegodon</i> sp. |
| 犀牛类 | Rhinocerotidae gen. et sp. indet. |
| 猪类 | Suidae gen. et sp. indet. |
| 鹿类 | Cervidae gen. et sp. indet. |
| 牛类 | Bovinae gen. et sp. indet. |
19. 潼南潆江岸湖相沉积剑齿象-熊猫动物羣^[11]
- | | |
|-------|-------------------------------------------------|
| 东方剑齿象 | <i>Stegodon orientalis</i> Owen |
| 巨獾 | <i>Megatapirus augustus</i> Matthew and Granger |
| 犀牛 | <i>Rhinoceros</i> sp. |
| 猪 | <i>Sus</i> cf. <i>scrofa</i> Linnaeus |
| 黑鹿 | <i>Rusa unicolor</i> (Kerr) |
| 麂 | <i>Muntiacus muntjak</i> ssp. |
| 水牛 | <i>Bubalus</i> sp. |
20. 资阳黄鳊溪剑齿象-熊猫动物羣^[117-130]
- | | |
|-------|----------------------------------------------|
| 豪猪 | <i>Hystrix</i> sp. |
| 竹鼠 | <i>Rhizomys</i> sp. |
| 沙獾 | <i>Arctonyx</i> sp. |
| 鬣狗 | <i>Hyaena</i> sp. |
| 虎 | <i>Panthera tigris</i> (Linnaeus) |
| 东方剑齿象 | <i>Stegodon orientalis</i> Owen |
| 猛犸象 | <i>Mammonteus primigenius</i> (Blumenbach) |
| 中国犀牛 | <i>Rhinoceros sinensis</i> Owen |
| 马 | <i>Equus</i> sp. |
| 猪 | <i>Sus</i> sp. |
| 黑鹿 | <i>Rusa unicolor</i> (Kerr) |
| 麂 | <i>Muntiacus</i> cf. <i>reevesi</i> (Ogilby) |
| ? 麝 | ? <i>Moschus</i> sp. |
| 野牛 | <i>Bibos gaurus</i> (Smith) |

经过次生堆积的黄鳊溪动物羣似乎含有二种成分:有較早期的(剑齿象-熊猫-)化石和后期的(真人-猛犸-)化石动物羣。根据新的观察,二个动物羣在华南北部接触是很可能的。

(五) 湖 北

21. 长阳下鍾家湾龙洞剑齿象-熊猫动物羣^[12]
- | | |
|----|-----------------|
| 真人 | <i>Homo</i> sp. |
|----|-----------------|

- | | |
|--------|---------------------------------------------------------------------|
| 中国竹鼠 | <i>Rhizomys sinensis</i> cf. <i>troglodytes</i> Matthew and Granger |
| 豪猪 | <i>Hystrix</i> cf. <i>subcristata</i> Swinhoe |
| 豺 | <i>Cuon antiquus</i> Matthew and Granger |
| 豺 | <i>Cuon</i> sp. |
| 小熊 | <i>Ursus angustidens</i> Zdansky |
| 熊猫 | <i>Ailuropoda</i> sp. |
| 虎 | <i>Panthera tigris</i> (Linnaeus) |
| 虎 | Felidae gen. et sp. indet. |
| 獾 | <i>Meles</i> sp. |
| 中国短吻鬣狗 | <i>Hyaena brevirostris sinensis</i> Owen |
| 东方剑齿象 | <i>Stegodon orientalis</i> Owen |
| 巨猿 | <i>Megatapirus augustus</i> Matthew and Granger |
| 中国犀牛 | <i>Rhinoceros sinensis</i> Owen |
| 猪 | <i>Sus</i> sp. |
| 牛类 | Bovidae gen. et sp. indet. A |
| 牛类 | Bovidae gen. et sp. indet. B |
| 鹿类 | Cervidae gen. et sp. indet. |
22. 通山县大地村剑齿象-熊猫动物群^[128,71]
- | | |
|-----|----------------------------------------------------|
| 可氏熊 | <i>Ursus thibetanus kokeni</i> Matthew and Granger |
| 鹿类 | Cervidae gen. et sp. indet. |
| 牛类 | Bovidae gen. et sp. indet. |
23. 恩施剑齿象-熊猫动物群^[120]
- 动物群没有描写。
- (六) 贵 州
24. 织金洞穴堆积中的剑齿象-熊猫动物群^[70]
- | | |
|-------|----------------------------------------------------|
| 鼯鼠科 | Soricidae gen. et sp. indet. |
| 鼯鼠 | <i>Petaurista</i> cf. <i>brachydus</i> Young |
| 家鼠 | <i>Rattus rattus</i> (Linnaeus) |
| 鼠科 | Muridae gen. et sp. indet. |
| 田鼠亚科 | Microtinae gen. et sp. indet. |
| 豪猪 | <i>Hystrix</i> sp. |
| 可氏熊 | <i>Ursus thibetanus kokeni</i> Matthew and Granger |
| 东方剑齿象 | <i>Stegodon orientalis</i> Owen |
| 巨猿 | <i>Megatapirus augustus</i> Matthew and Granger |
| 中国犀牛 | <i>Rhinoceros</i> cf. <i>sinensis</i> Owen |
| 马 | <i>Equus</i> sp. |
| 猪 | <i>Sus</i> cf. <i>scrofa</i> Linnaeus |
| 黑鹿 | <i>Rusa unicolor</i> (Kerr) |
| 麂 | <i>Muntiacus</i> sp. |
| 水牛 | <i>Bubalus</i> sp. |
| ? 鬣羚 | ? <i>Capricornis</i> sp. |

(七) 广东

25. 曲江馬垵剑齿象-熊猫动物羣^[171,172,95]

动物羣沒有描写,只发表了初步报导。

真人	<i>Homo</i> sp.
豪猪	<i>Hystrix</i> sp.
兔	<i>Lupus</i> sp.
熊	<i>Ursus</i> sp.
熊猫	<i>Ailuropoda</i> sp.
鬣狗	<i>Hyaena</i> sp.
虎	<i>Panthera tigris</i> (Linnaeus)
剑齿象	<i>Stegodon</i> sp.
拿馬古象	<i>Palaeoloxodon namadicus</i> (Falconer and Cautley)
獐	<i>Tapirus</i> sp.
犀牛	<i>Rhinoceros</i> sp.
猪	<i>Sus</i> sp.
“鹿”	“ <i>Cervus</i> ” sp.
牛	<i>Bos</i> sp.

26. 肇庆剑齿象-熊猫动物羣^[11]

猩猩	<i>Pongo</i> sp.
黄蝙蝠	<i>Hesperopternus</i> sp.
豪猪	<i>Hystrix subcristata</i> Swinhoe
豪猪	<i>Hystrix</i> sp.
可氏熊	<i>Ursus thibetanus kokeni</i> Matthew and Granger
狗	<i>Canis</i> sp.
剑齿象	<i>Stegodon</i> sp.
中国獐	<i>Tapirus sinensis</i> Owen
中国犀牛	<i>Rhinoceros</i> cf. <i>sinensis</i> Owen
猪	<i>Sus</i> cf. <i>scrofa</i> Linnaeus
鹿	<i>Cervus</i> sp.
黑鹿	<i>Rusa</i> sp.
牛类	Bovidae (cf. <i>Bubalus</i> sp.)

(八) 江苏

27. 丹阳剑齿象-熊猫动物羣^[116]

? 猕猴	? <i>Macaca</i> sp.
豪猪	<i>Hystrix</i> cf. <i>subcristata</i> Swinhoe
果子狸	<i>Paguma larvata</i> (Smith)
沙獾	<i>Arctonyx collaris</i> cf. <i>rostratus</i> Matthew and Granger
熊	<i>Ursus</i> sp.
鬣狗	<i>Crocuta ultima</i> (Matsumoto)
拿馬古象	<i>Palaeoloxodon</i> cf. <i>namadicus</i> (Falconer and Cautley)
巨獐	<i>Megatapirus</i> sp.

犀牛	<i>Rhinoceros</i> sp.
猪	<i>Sus</i> sp.
黑鹿	<i>Rusa</i> sp.
鹿	<i>Muntiacus</i> sp.
? 麝	? <i>Hydropodes</i> sp.
牛类	Bovidae gen. et sp. indet.

28. 泗洪下草湾剑齿象-熊猫动物羣(广义的)^[134,17]

动物羣沒有描写,只发表了簡报。

中国河狸	<i>Trogontherium sinensis</i> Young
虎	<i>Panthera tigris</i> (Linnaeus)
古象	<i>Palaeoloxodon</i> sp.
淮河象	<i>Stegolophodon hueiheensis</i> Chow
犀牛	<i>Rhinoceros</i> sp.
鹿类	Cervidae gen. et sp. indet.

(九) 福 建

29. 龙岩鸡林山剑齿象-熊猫动物羣^[103]

鬣狗	<i>Crocuta ultima</i> (Matsumoto)
獾	<i>Tapirus</i> cf. <i>sinensis</i> Owen
鹿类	Cervidae gen. et sp. indet.

三、不同剑齿象-熊猫动物羣的地質年代

早期作者馬修(W. D. Matthew)和葛兰求(W. Granger)把盐井沟的剑齿象-熊猫动物羣归于晚上新世,这个意見主要由于被認为是典型的上新世类型的剑齿象(*Stegodon*)和爪兽(*Nestoritherium*)的出現。这种对比与認为西瓦立克层地层位置較低的理論相一致。但是,早在1932年,楊鍾健把中国南方黄色洞穴堆积和盐井沟的动物羣作了比較^[173]和1935年德日进、楊鍾健、裴文中和张席禔^[156]把万县裂縫堆积与广西黄色洞穴堆积对比归到早更新世。另一方面中国南方黄色洞穴堆积的化石最初曾归在中更新世,后来归到早更新世和与兰松堆积^[175]对比。在另一篇关于这个問題的报告中,两种可能性(早期和中期更新世)都曾討論过,但沒有給予肯定^[156]。在1940年柯白特(E. H. Colbert)^[22]描述了云南元謀(馬街)的材料,他将中国南方黄色洞穴堆积和盐井沟的堆积都归入于中更新世。由于几乎所有后来发现的具有这个动物羣的地点都归于中更新世^[187,103,186,117,14,12,127,70,120,171,172,11,124],因此,柯白特和裴文中^[116]关于中国南方洞穴堆积的时代也都同意了这个意見。

近几年中,在发现柳城巨猿洞和其他含有人类化石和剑齿象-熊猫动物羣(广义的)化石以后,依据不同的地层层位,将这动物羣組分成不同的組,已經做了第一次的尝试^[15,123]。

检查上列剑齿象-熊猫动物羣(广义的)的清單,我們首先有几个理由認为柳城巨猿洞动物羣不能和黄色洞穴堆积动物羣(狭义)对比。虽然它并不是一个維拉方期的动物羣,从整体来說,巨猿动物羣和其他动物羣相比,显出較老的面貌而由岩石的性質(硬,不純的紅色石灰华)也暗示一个較早的位置^[15]。周明鎮^[15]因此将巨猿动物羣归到上新世或早更

新世,显然他太注意了古老的类型¹⁾。在中国南方早期更新世动物羣中古老种类的出现,使得堆积的时代显得很早也许并不奇怪,因为此地有蓬蒂“地块”(广义的)的避难区域。在这地块里古老的属——在大陆缩小地区下生存着——从更新世后期一直延续到今天^[120,5,26,128]。

由于材料的积累²⁾,现在我們建議划分中国南方洞穴堆积的剑齿象-熊猫动物羣(广义的,今天所知的)为相应的不同层位动物羣的3个发展时期:

1. 柳城巨猿动物羣属于剑齿象-熊猫动物羣(广义的)

中早期的类,地层上属于中更新统最底部(下更新统)和似乎相当于欧洲阿尔卑斯地层的恭兹和早期恭兹-明德时期。

2. 剑齿象-熊猫动物羣(狭义的)(盐井沟 I)含有最末“第三纪”的因素和中国短吻鬣狗(*Hyaena brevirostris sinensis*)——典型的类——,属于中更新世(狭义的)。

3. 黄色洞穴堆积和較晚相当于中更新世晚期和晚更新世^[123]地层中的剑齿象-熊猫动物羣(广义的)。

步氏巨猿在中国最南部一直生存到中更新世的可能性是存在的,但是最后的肯定,須待大兴动物羣的描述发表以后^[121,128,123]。

四、剑齿象-熊猫动物羣的性质

中国南方洞穴和裂縫堆积的剑齿象-熊猫动物羣的“马来亚”性质,早在1923年^[102,156,114,76,49]就被認識出来。从緬甸(摩可洞)^[24]、印度支那(泰南和兰松)^[99,110,30,1]和印度尼西亚爪哇(約弟斯及曲尼层)^[76,77,78,79,80,86,87]被記載的类似动物羣,以及从印度尼西亚加里曼丹及苏拉威西、中国台湾、和菲律宾呂宋及其他羣島发现的、表示高度特殊化的中国-马来亚动物羣化石,指示出島屿从大陆分离是在中更新世以后。

中国-马来亚动物羣(广义的剑齿象-熊猫动物羣^[53])分布中心似乎曾經在(从前扩大的)大陆上,里面的动物沿着陆桥从大陆到达巽他陆棚的“島屿”^[78]。

向北、向东北和西北我們会立刻在中国南部遇到相的差别。虽然猩猩(*Pongo*),这个典型的剑齿象-熊猫动物羣的“马来亚”类型,现在是属于印度支那洞穴(泰南)动物羣。但根据今天的資料,在緬甸(摩可洞)和印度西瓦立克上部(?)是缺失的。在中国更新世猩猩分布的北界似乎在桂林以北。

陝西中更新世晚期动物羣^[62],与剑齿象-熊猫动物羣有某种亲緣;缺乏典型的南方类型,但是羚羊(*Gazella*)和披毛犀(*Coelodonta* sp.³⁾)很丰富。表示出任何地方都发现的局部过渡型动物羣的混合特性。

胡长康译

1) 在当时巨猿动物羣的材料还很少,缺乏去年采到的重要的可鑑定时代的化石。

2) 我很感謝裴文中教授邀請我看柳城巨猿洞的化石材料和討論問題。

3) 这个动物羣的披毛犀(*Coelodonta* sp.)与欧洲、西伯利亚和中国北方(东北)的“北方”披毛犀(*Coelodonta antiquitatis* Blumenbach)不同,但是,据現在所知,它是一个从青海和泥河湾区域等地发现的維拉方期最晚期(中更新世早期)的披毛犀(*Coelodonta* n. sp.)的后代。

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图 1 图 註

云 南 (Yunnan)

- 1=河上洞 (Hoshantung)
2=黑箐龙村 (Heichinglungtsun)
3=大宰格 (Tatsaike)
4=馬街 (Makai)

广 西 (Kwangsi)

- 5=新开 (Hsingan)
6=武州 (Wuchow)
7=新社冲村 (Hsinsuehchungtsun)
8=大兴 (Tahsin)
9=来宾 (Laipin)
10=封門山 (Fengmenshan)
11=李家山 (Lijishan)
12=阳朔 (Yangshuo)

浙 江 (Chekiang)

- 13=留下 (Liuhsia)
14=江山 (Kiangshan)

四 川 (Szechuan)

- 15=盐井沟 (Yenchingkuo)
16=歌乐山 (Koloshan)
17=大安寨 (Taanchai)
18=和尚坡 (Hoshangpo)

19=潼南 (Tungnan)

20=資阳 (Tzeyang)

湖 北 (Hupei)

- 21=长阳 (Changyang)
22=大地村 (Tatitsun)
23=恩施 (Enshih)

貴 州 (Kweichow)

24=織金 (Chihchin)

广 东 (Kwangtung)

- 25=馬坝 (Mapa)
26=肇庆 (Shaochin)

江 苏 (Kiangsu)

- 27=丹阳 (Tanyang)
28=下草湾 (Hsiachaohwan)

福 建 (Fukien)

29=鷄林山 (Chilishan)

中国南方更新世猩猩分布的北界, 依据有确实地点记录的为实线; 依据药舖材料的为虚线。

Northern limit of Pleistocene *Pongo* in South China according to the specimens with definite record of locality (=line) and according to the drugstore-materials (=dotted line).

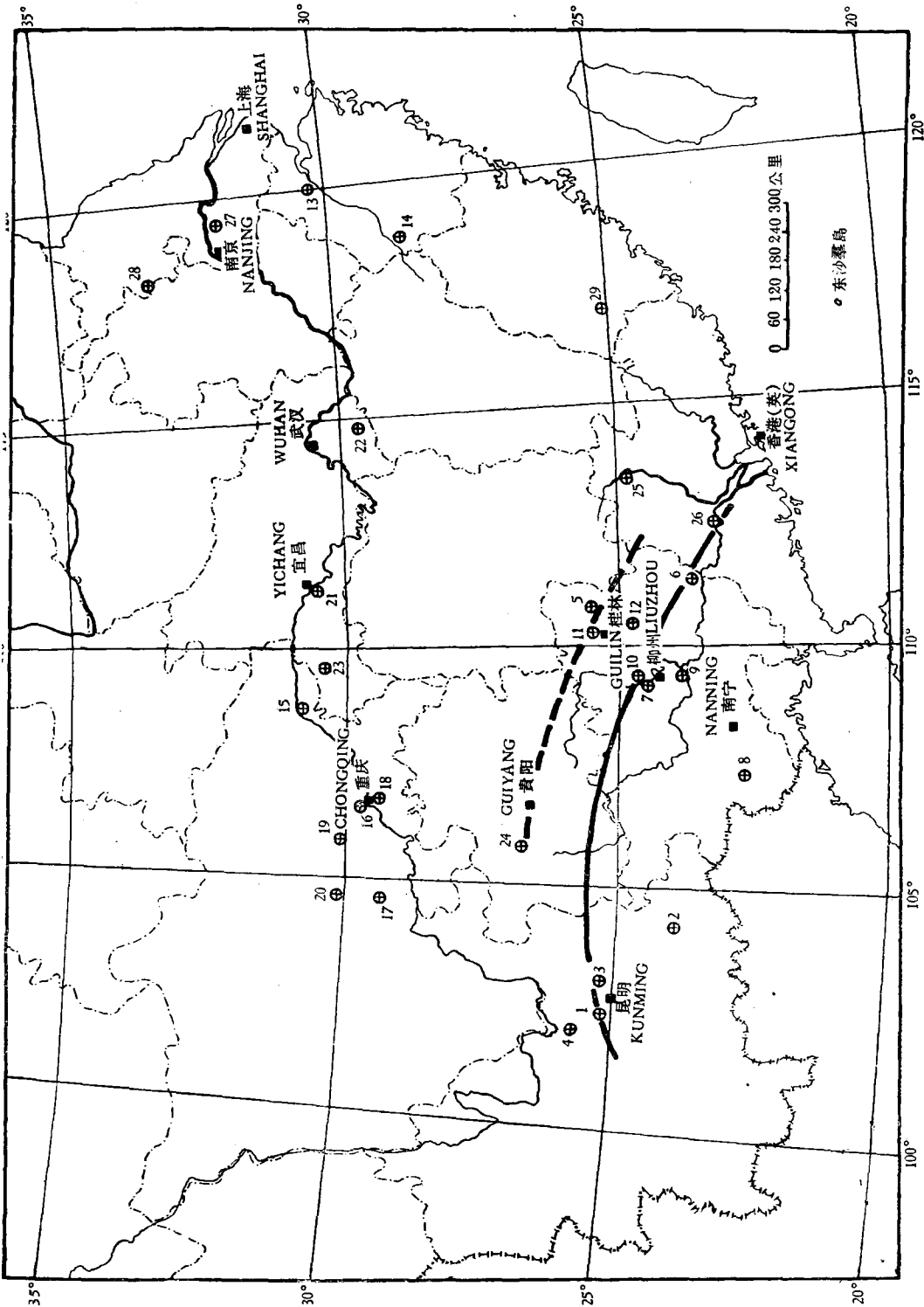


图 1
 华南剑齿象-熊猫动物群(广义的)分布示意图(国界线根据解放前申报馆地图绘制)
 (Distribution of the Stegodon-Ailuropoda-fauna s.l. in South China)

中国南方几类剑齿象-熊猫动物羣的时代

(Chronological position of some *Stegodon-Ailuropoda*-associations s. l. of South China)

	云南 (Yunnan)	四川 (Szechuan)	貴州 (Kweichow)	广西 (Kwangsi)	广东 (Kwang-tung)	湖北 (Hupei)	福建 (Fukien)	浙江 (Chekiang)	江苏 (Kiangsu)
維母 (Wünn) 耶姆 (Fem)	晚更新世 (Late Pleistocene)				馬坝 (Mapa)	长阳 (Changyang)			
里斯 (Riss) 赫尔斯坦 (Holstein) 明德 (Mindel) 克罗美 (Cromer) 恭兹 (Günz)	河上洞 (Hoshantung)*	歌乐山 (Koloshan) 盐井沟 II (Yenchingkuo II)	織金 (Chihchin-Dist.)	新开 (Hsingan)			鴉林山 (Chilinshan)	留下 (Liusia)	丹阳 (Tanyang)
維拉方 (Villafranchium)	早更新世 (Early Pleistocene)	盐井沟 I (Yenchingkuo I) 馬街 (Makai)		大兴 (Tahsin)** 柳城 (Liucheng)					

* 有些起初归于“上中更新世”的地点可能它们的层位要高一些。但是由于缺乏有記載的材料我們选择了这个对比。(Indeed, some of the localities preliminary referred here to the “upper middle Pleistocene” may correspond to an even later horizon (late Pleistocene). But because of lacking dating materials we have chosen this correlation.)

** 动物羣沒有描写,地质时代未定。(Fauna not described, chronological position uncertain.)

ON THE COMPLEX OF THE *STEGODON-AILUROPODA*-FAUNA OF SOUTHERN CHINA AND THE CHRONOLOGICAL POSITION OF *GIGANTOPITHECUS BLACKI* V. KOENIGSWALD

(Summary)

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An intensive field study in the southernmost provinces of China in 1957—1960 led to the discovery of numerous new fossil localities of the *Stegodon-Ailuropoda* fauna-complex and an unexpected, high number of *Gigantopithecus*-teeth (more than 900 including three well preserved mandibles) have been received from two localities: Newshuishan, Tahsin and Lengchaishan, Liucheng in Kwangsi Province, as already published in preliminary notes. With the publication of these discoveries, however, the question of the phylogenetic and chronological status of *Gigantopithecus blacki* v. Koenigswald again was in discussion and different opinions have been expressed.

A. Historical Review

As late as in 1956 no exact stratigraphical date was available on the few isolated *Gigantopithecus*-teeth discovered by v. Koenigswald in Chinese drugstores in Canton. It was obvious, however, that the teeth must have been originated from caves or fissures of the inner districts of Kwangsi and Kwangtung Provinces, but there was no record of a definite locality at that time.

Associated with the first *Gigantopithecus*-teeth v. Koenigswald received from the drugstores of Canton and other towns of China and south-east Asia a number of additional fossils showing on the whole the same grade of fossilization as the *Gigantopithecus*-teeth and were considered by v. Koenigswald and others to belong to the same fauna.

“Drugstore-fauna” from caves and fissures of Kwangsi and Kwangtung (cf. Chinese paper p. 83). Comparing this “drugstore-fauna” with the faunas of the south China cave-and fissure-deposits, we may point out that it mainly contains species recorded from the deposits with the

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Stegodon-Ailuropoda-fauna s. l. (yellow cave deposits) of late middle Pleistocene age. In the south China provinces of Yunnan, Szechuan, Hupei, Hunan, Kweichow, Kwangsi, Kiangsi, Kwangtung, Kiangsu, Chekiang and Fukien (=Zoogeographical South China Province) the stratigraphy of Plio-Pleistocene is up to date poorly known. Although a great number of fossils having been described already at the end of the 19th. century and short after originated from these provinces (medicine bones), it was as late as in 1923 when the first fossil fauna with definite record of the locality got known. Few years later, in 1929 and 1932, Young, C. C. described fossils received from caves near Wuchow, Kwangsi and Hoshantung, Fumin, at the western bank of the Putu-river in Yunnan, and Wang, K. M., Chang, H. C. and Pei, W. C. published additional materials. In this time (1935), Pei, W. C. recognized already the fundamental features of the south China zoogeographic province of middle Pleistocene age s. l.

In the last few years additional materials with stratigraphical record have been excavated and a new attempt was made by Chow, M. M. to correlate the cave and fissure-deposits of southern China.

B. Localities of the *Stegodon-Ailuropoda*-complex of south China.

I. Yunnan

1. *Stegodon-Ailuropoda*-fauna from the Hoshantung-cave, southwest of Fumin, at the bank of the Putu-river (cf. p. 84—85).
2. *Stegodon-Ailuropoda*-fauna from the Heichinlungtsun-rockshelter, Chiupei (cf. p. 85).
3. *Stegodon-Ailuropoda*-fauna s. l. from a cave near Tatsaika, Funming (cf. p. 85).
4. *Stegodon-Ailuropoda*-fauna s. l. from the Makai-valley (cf. p. 85).

II. Kwangsi

5. *Stegodon-Ailuropoda*-fauna from a cave near the village of Hsingan (Cave E, loc. 39), north of Kweilin (cf. p. 86).
6. ? *Stegodon-Ailuropoda*-fauna from a cave near Wuchow (cf. p. 86).
7. *Stegodon-Ailuropoda*-fauna s. l. from the *Gigantopithecus*-cave the village of Hsinsueh-chungtsun, Liucheng-district (cf. p. 86—87).
8. *Stegodon-Ailuropoda*-fauna from the Newshuishan, Tahsin (cf. p. 87).
9. *Stegodon-Ailuropoda*-fauna from a cave near Laiping. Fauna undescribed.
10. *Stegodon-Ailuropoda*-fauna from the Fengmenshan-cave, Liucheng. Fauna undescribed.
11. *Stegodon-Ailuropoda*-fauna from the rockshelter of Guazishan near the village of Lijiashan, Kweilin. Fauna undescribed.
12. *Stegodon-Ailuropoda*-fauna from the Lungtung-cave, Yangshuo. Fauna undescribed.

III. Chekiang

13. *Stegodon-Ailuropoda*-fauna from a cave near Liuhsia (cf. p. 87).
14. *Stegodon-Ailuropoda*-fauna from a cave near the village of Tzautienfen, near Kiangshan (cf. p. 88).

IV. Szechuan

15. *Stegodon-Ailuropoda*-fauna from the fissure-deposits near the village of Yenchingkuo, southwest of Wanhsien. Type-locality of the south China *Stegodon-Ailuropoda*-fauna s. str. (chronolog.) (cf. p. 88).
16. *Stegodon-Ailuropoda*-fauna from Koloshan near Chungking (cf. p. 89).

17. *Stegodon-Ailuropoda*-fauna from the rockshelter of Yangchiachung near Taanchai, Tzeliuching (cf. p. 90).
18. *Stegodon-Ailuropoda*-fauna from a cave near Hoshangpo, Pahsien, Chungking (cf. p. 90).
19. Redeposed *Stegodon-Ailuropoda*-fauna of fluvial or lacustrine deposits from the bank of the Aikiang (cf. p. 90).
20. Redeposed *Stegodon-Ailuropoda*-fauna from the Huangshanchi-bridge, Chengtu-Chungking-railway, Tzeyang (cf. p. 90).

The redeposed fauna of the Huangshanchi-bridge seems to consist of two components: there are remains of an earlier (*Stegodon-Ailuropoda*-) and fossils of a later (*Homo sapiens-Mammonteuus primigenius*-) fauna. According to the newer observations, however, it is possible that the two faunas get in contact in the northern parts of south China.

V. Hupei

21. *Stegodon-Ailuropoda*-fauna from the Lungtung-cave near the village of Hsiachungchianwan, Changyang (cf. p. 90—91).
22. *Stegodon-Ailuropoda*-fauna from a cave near the village of Tatitsun, Tungshanhsien (cf. p. 91).
23. *Stegodon-Ailuropoda*-fauna from Enshih. Fauna not described.

VI. Kweichow

24. *Stegodon-Ailuropoda*-fauna s. l. from cave-deposits of the Chihchin-district (cf. p. 91).

VII. Kwangtung

25. *Stegodon-Ailuropoda*-fauna from a cave near the village of Mapa, Qujing-district (cf. p. 92). Fauna not described, preliminary notes published.
26. *Stegodon-Ailuropoda*-fauna from Shaochin (cf. p. 92).

VIII. Kiangsu

27. *Stegodon-Ailuropoda*-fauna from a cave near Tanyang (cf. p. 92—93).
28. *Stegodon-Ailuropoda*-fauna s. l. from Hsiachaohwan, Sihong-district. Fauna not described, preliminary notes published (cf. p. 93).

IX. Fukien

29. *Stegodon-Ailuropoda*-fauna from Chilinshan, Lungyen (cf. p. 93).

C. Chronological position of the different *Stegodon-Ailuropoda*-associations.

The earlier authors (Matthew, W. D. and Granger, W.) referred the *Stegodon-Ailuropoda*-fauna (of Yenchingkuo) to the upper Pliocene, an opinion caused mainly by the presence of *Stegodon*- and *Nestoritherium* regarded this time to be characteristic Pliocene forms. This correlation, however, was in accord too with the earlier theories of the stratigraphical position of Siwalik horizons.

But as early as in 1932, Young, C. C. compared the fauna of the yellow cave-deposits of south China with that of Yenchingkuo and in 1935 P. Teilhard de Chardin, Young, C. C., Pei, W. C. and Chang, H. C. placed the Wanhsien fissure-deposits into the lower Pleistocene correlate with the yellow cave-deposits of Kwangsi.

On the other side the fossil remains of the yellow cave-deposits of south China have been referred first to the middle Pleistocene, later to the early Pleistocene and have been correlated with the Langson-deposits.—In another paper on this question, however, both possibilities (early and middle Pleistocene) have been discussed without giving a decision.

In 1940 E. H. Colbert, giving a description of the Makai-valley materials (Yunnan), placed the yellow cave-deposits of south China and the Yenchingkuo-deposits into the middle Pleistocene, and in doing so he introduced again, together with Pei, W. C. a certain agreement in dating the *Stegodon-Ailuropoda*-fauna of the south China cave-deposits because of nearly all of the later discovered localities with this fauna have been referred to the middle Pleistocene.

In the last years, however, after discovering the Liucheng *Gigantopithecus*-cave and other south China caves with human fossils associated with the *Stegodon-Ailuropoda*-fauna s. l., first attempts have been made to divide this faunal complex into different associations corresponding to different stratigraphical horizons.

Examining the above given lists of the *Stegodon-Ailuropoda*-associations s. l., first we have some causes not to correlate the Liucheng-fauna of the *Gigantopithecus*-cave with the fauna of the yellow cave-deposits s. str. Although it is not a Villafranchian association, the *Gigantopithecus*-fauna as a whole shows more archaic features compared with the other associations and the mineralogical evidence (hard, impure reddish travertine) too suggests an earlier position.

Chow, M. M., therefore, named the fauna as "*Gigantopithecus*-fauna" and referred it to the late Pliocene or early Pleistocene, obviously paying too much attention on the archaic forms.

The presence of the archaic species in the earlier Pleistocene-associations of south China, causing the extreme high dating of the deposits, may not wonder because of having here refuge-regions of the Pontian-block s. l., in which the ancient genera—living under continual diminution of their arrear—last up p. p. until today.

Now, after accumulation of further materials we propose to divide the *Stegodon-Ailuropoda*-fauna s. l. of the south China cave-deposits (as is known today) into three stages of faunal development corresponding stratigraphically to different horizons.

1. The *Gigantopithecus*-fauna of Liucheng faunistically belongs as an early association to the *Stegodon-Ailuropoda*-fauna s. l., stratigraphically into the lowermost middle Pleistocene (Altpleistozän) of alpine stratigraphy in Europe.

2. The *Stegodon-Ailuropoda*-fauna s. str. (Yenchingkuo I, Szechuan) with last "tertiary" elements and *Hyaena brevirostris sinensis* Owen is—as type-association—of middle Pleistocene age s. str.

3. The *Stegodon-Ailuropoda*-fauna s. l. of yellow cave-deposits and later horizons correspond as late associations with the upper middle Pleistocene and the late Pleistocene.

The possibility of *Gigantopithecus blacki* v. Koenigswald surviving in southernmost China as late as in middle Pleistocene times is given but the decision upon must be postdated until the description of the fauna of Taksin is published.

D. Character of the *Stegodon-Ailuropoda*-fauna.

The "malayan" character of the *Stegodon-Ailuropoda*-fauna of South China cave-and fissure-deposits have been recognized as early as in 1923. Similar associations have been recorded

from Burma (Mogok-caves), Indo-China (Tamnang and Langson) and Java (Djetis and Trinil horizons), and from Borneo, Celebes, Taiwan, Luzon and other islands of the Philippine-group fossil remains of the Sino-Malayan fauna, showing a relative high grade of specialization, have been discovered indicating the separation of the islands from the continent in post-middle Pleistocene times.

The centre of distribution of the Sino-Malayan fauna (= *Stegodon-Ailuropoda*-fauna s. l. = *Stegodon-Ailuropoda*-block) seems to have been on the (enlarged) continent from where the "islands" of the Sundashelf were reached by involved forms along continental-bridges.

Towards the north, the northeast and northwest we soon met in southern China with facial differences. Whilst *Pongo*, the typical "Malayan" form of the *Stegodon-Ailuropoda*-fauna is yet belonging to the fauna of the Indo-Chinese caves (Tamnang), but according to the collections available today missing in Burma (Mogok-caves) and in the Upper Siwaliks(?) and in China the northern limit of distribution of Pleistocene *Pongo* seems to be found north of Kweilin.

The late middle Pleistocene fauna from Shensi showing some affinities to the *Stegodon-Ailuropoda*-block, lacking the typical southern forms but enriched by *Gazella* and *Coelodonta* sp. indicates the mixed character of local transitional faunas to be found anywhere.