

NEW EVIDENCE ON THE AGE OF PEKING MAN

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The purpose of the present note is to record briefly the results bearing on the age of Peking Man, obtained by a combination of floral and faunal analysis.

The following pollen and spore content was obtained by Dr. Yrjö Vasari, of our Institute, from a lump of matrix adhering to a fossil specimen (*Megaceros pachyosteus*) in the Uppsala collection from Choukoutien Loc. 1 (Loc. 53 of the Sino-Swedish Expedition):

Tree and shrub pollen:	No.	Per cent
<i>Picea</i>	5	4
<i>Pinus</i>	43	33
Cf. <i>Taxus</i>	1	1
<i>Salix</i>	1	1
<i>Betula</i>	37	28
<i>Alnus</i>	9	7
<i>Tilia</i>	3	2
<i>Hippophaë</i>	1	1
Herb and grass pollen:		
Cf. <i>Triglochin</i>	4	3
Gramineae	11	8
Cyperaceae	4	3
Chenopodiaceae	1	1
Rosaceae	4	3
<i>Empetrum</i>	1	1
<i>Artemisia</i>	3	2
Unidentified NAP	4	3
Spores:		
<i>Sphagnum</i>	1	
Polypodiaceae	5	
Unidentified	3	

The total of pollen grains is 132, the non-arboreal pollen being 32, or 24 per cent of the total.

A more detailed report will be set forth in the near future; meanwhile, Dr. Vasari

authorizes me to summarize his conclusions as follows. A somewhat cooler climate than that of the present day in the Peking region is indicated by the pollen spectrum. The area was probably near the border zone between the northern coniferous belt and the temperate steppe belt, and the hills were probably clad with pine and spruce woods. In contrast, though the natural vegetation is now largely destroyed by cultural influences, the region is to-day considered to belong to the temperate steppe and park steppe zone, and is closer to the belt of subtropical evergreen forests than to the northern coniferous forest belt.

In my opinion, this indicates that the equivalent of the Choukoutienian should probably be sought in one of the European glaciations, and not in an interglacial. According to Kahlke and Hu (1957), who made a brilliant analysis of the megacerine deer, the Choukoutien fauna may be correlated with the closing phases of the Mindel (Elster) Glaciation or the early phases of the Mindel-Riss (Holsteinian) Interglacial. On the other hand, Kurtén (1957) compared the replacement of *Hyaena brevirostris* by *Crocotta crocuta* in Europe and China and suggested a late Cromerian date. My opinion is now that this replacement probably took place in Elster II (for a synthetic treatment of the chronology of the European middle Pleistocene, see Kurtén, in the press), and thus the discrepancy between the two datings is largely abolished.

For an Elster II (Mindel II) date speaks also the fact that the relative numbers of living and extinct species of mammals are about the same (Choukoutien about 44 per cent living species, Elster II about 54 per cent) and are significantly different in the following cold oscillation, the Saale or Riss (78 per cent living species). The recent "faunal stratum" probably grew up at about the same rate in China and Europe, seeing that the Villafranchian faunas of China contain about 8 per cent living species, and the corresponding number in the late Villafranchian (Tiglian) fauna of Europe is about 7 per cent.

A date much earlier than Elster II seems unlikely on several accounts. Here may be mentioned the fact that a number of Choukoutien species make their first appearance in Elster II in Europe or have probable ancestors living closely before Elster II. Here belong, for instance, *Dicerorhinus kirchbergensis*, *Coelodonta antiquitatis*, and *Cuon alpinus*. The latter may well have descended from *Cuon prisus* at Hundsheim (see Thenius, 1954) of probably Elster I age.

A more detailed account is being prepared and will be published elsewhere jointly with Dr. Vasari's report. In future, pollen analysis of the whole Choukoutien profile may well give more definite evidence, the preliminary studies having proved that pollen grains are abundantly present.

According to a potassium-argon dating by Evernden, Curtis, and Kistler (1958), the age of the Elster Glaciation is about 360,000 years, which would then be the approximate age of Peking Man.

References

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