

## GIANT EARLY MAN FROM JAVA AND SOUTH CHINA

By

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Under the above title the late professor Franz Weidenreich, formerly of the Peking University, has written a most interesting paper which has been published as vol. 40. Part I of "Anthropological Papers of the American Museum of Natural History", New York, 1945. It is illustrated with 12 plates, showing skeletal remains and teeth of primitive hominids, as well as a reconstruction of the skull of *Pithecanthropus robustus*, besides figures and diagrams in the text, and a useful list of literature on the subject in hand. The problems of man's origin and his evolution have always attracted and occupied thoughtful men, and any progress in the search for our ancestors must therefore be watched with deep interest. The treatise under review does not give us a final solution of these problems, but it tells us much about the most recent discoveries, revealing some of the earliest stages in man's evolution, besides being of particular interest to people in Siam as will be seen further on. The author is well known in scientific circles as one of the foremost research workers in the branch of anthropology, his name being connected with the studies and elucidation of the remains of the *Sinanthropus* or Peking man of hoary age which was found in the caves of Choukoutien, to the east of Peking, not so many years ago. Professor Weidenreich says in his treatise that science is indebted to the collection and knowledge of the material, which is the subject matter of his treatise, to the initiative, energy and passionate inquiring mind of the young Dutch savant, Dr. G.H.R. von Koenigswald. It will be remembered that the first discovery of fossil remains of the *Pithecanthropus erectus*, or Java man, was made by another Dutch anthropologist, Dr. Dubois, in the Trinil beds in Java more than fifty years ago. And now Dr. von Koenigswald, through

his trained collectors, has been able during the years of 1939-1941, to recover further fragments: skulls, or part of such, and two lower jaws, all belonging to this ancient group of hominids. The teeth of the South Chinese giant man (*Gigantopithecus*) this indefatigable worker in man's past found in a Chinese chemist's shop in Hongkong! It is to be regretted that the last World War has retarded the publication of these important finds. Among them is a mandible that is the most primitive ever recovered and whose gigantic proportions strike an entirely new note in the picture we have of early man, says the author. The studies of this latter savant has lead him to conclude that *Gigantopithecus* is still more gigantic and primitive than any of the Java men, and that both groups are *not anthropoids* but *true hominids*. The conclusion of his (Prof. Weidenreich's) studies is, that contrary to the theories of such anatomists and research workers as Kollmann, Ranke and Klaatsch (shared by the Reverend Father William Schmidt in his "Die Stellung der Pygmäenvölker in der Entwicklungsgeschichte des Menschen", treated by the writer in his review of Prof. P. Schebesta's "Bei dem Urwaldzwerger in Malaya", J.S.S. vol. XXIII part I. 1929) that modern man began as a dwarf, the most primitive hominid, so far known, really started as a giant who surpassed all anthropoids and hominids, living or fossil, in size and robustness of jaws and teeth, and also that man's ancestors resembled modern man no more than do modern anthropoids. (Thus the tales of giants of ancient days, met with in the myths of so many peoples, also in Siam, seem to have been substantiated. Does not the Christian Bible mention them too? See Genesis 6.4: There were giants in the earth in those days!). Prof. Weidenreich says that it is one of the greatest ironies in the history of palaeanthropology that the most surprising and revolutionary discoveries, which shed real light on the origin of man, should come from the periphery of the Old World. According to the old anthropological school man was supposed to originate in the Near Orient, but this seems doubtful now as no region on the earth has yielded so many successive evolutionary stages of hominids, such as the *Pithecanthropus* types,

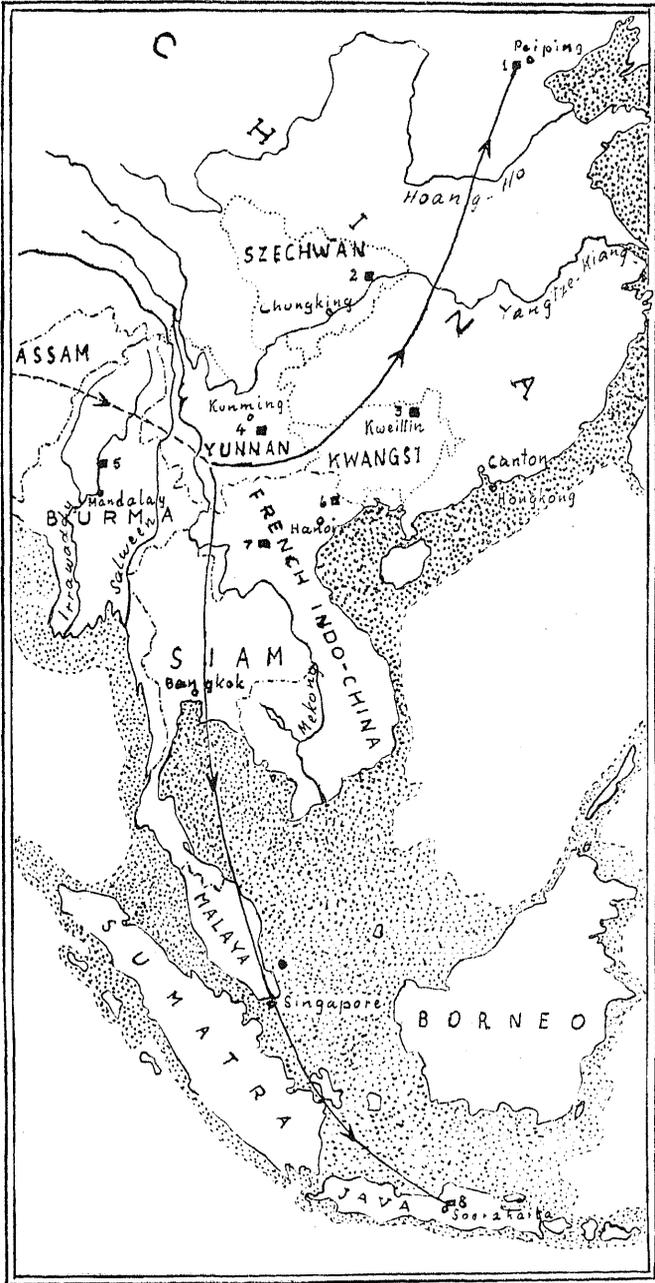
*Homo Soloensis* and Wadjak man, as the small outpost of Java. In contrast Europe and Western Asia, which were supposed to be the centre of human evolution, seem to be sterile. However, new discoveries in the desert countries of North Africa, Arabia, Syria or Iran may be made at any time which may revindicate the Near Orient.

We now possess quite a number of fragments of *Pithecanthropus*. Where Dubois only found a skull cap and a femur Dr. Von Koenigswald's more abundant finds include three skulls, more or less complete, one of them being of a juvenile member. The last finds made by him were two mandibles, belonging to new giant forms of pre-hominids which he called *Meganthropus palaeojavanicus*. Dr. von Koenigswald regarded this latter type neither to be an anthropoid (orang utan) nor a *Pithecanthropus* but corelated to the pre-hominids (*Pithecanthropus* and *Sinanthropus*) as well as to the Siwalik anthropoids and the South African *Australopithecus* man-ape. The three giant teeth obtained by Dr. von Koenigswald in Hongkong he ascribed to a new gigantic form of pre-hominids and called it *Gigantopithecus*. The latter must have lived in South China during the Pleistocene period where also lived a large orang utan. Broom, the South African (Boer) anthropologist, has placed *Gigantopithecus* somewhere near the origin of man, and also to the *Australopithecus*, with which Prof. Weidenreich entirely agrees.

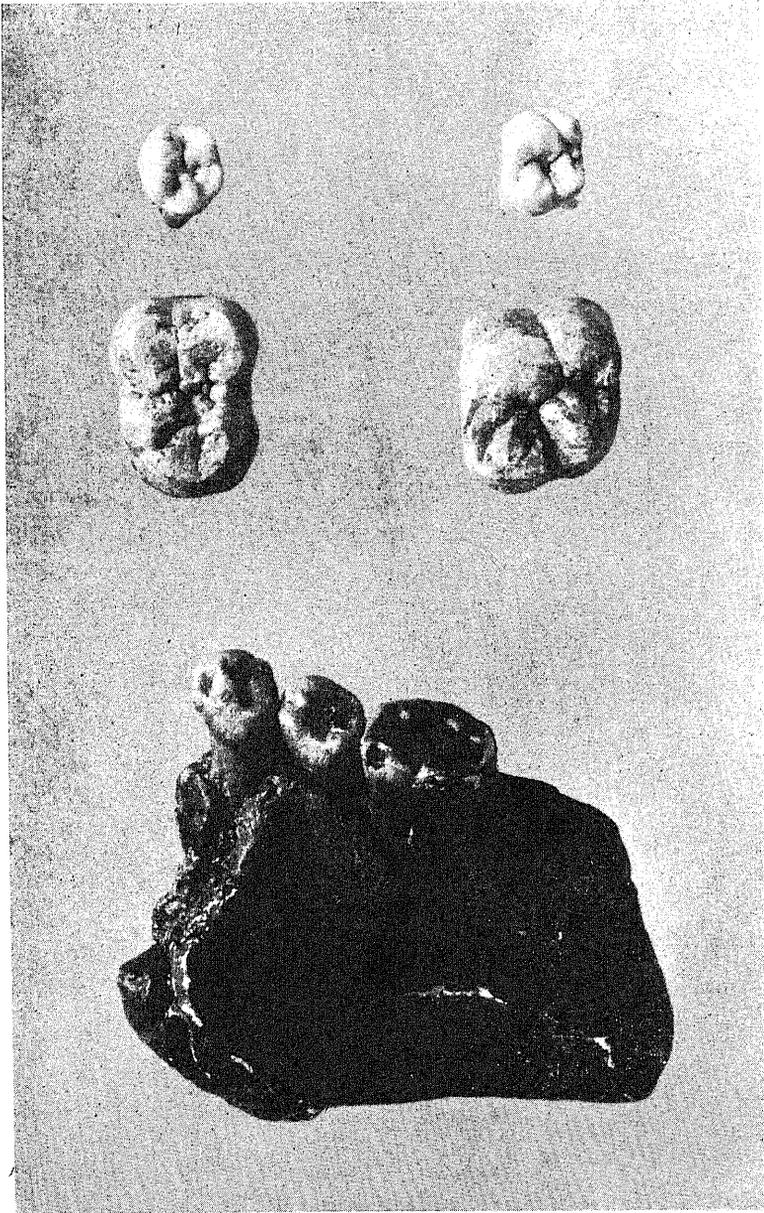
Prof. Weidenreich next treats in detail the skull of *Pithecanthropus robustus* Weidenreich; however, as the skull lacks the frontal region and upper portion of the face it is difficult to determine its original form (see reconstruction on plate 4 and 5). It had a low and flat brain case, strong supra orbital ridges; however, though ugly with his triangular face, he was still human in aspect. The length of head for the various pre-men, modern men and anthropoids Prof. Weidenreich gives as follows: *Pithecanthropus robustus* 79.3; *Pithecanthropus erectus* 73.2-76.5; *Sinanthropus* 72.2; *Homo Soloensis* 72.0; Neanderthal man 73.3; modern man 72.8 and anthropoids 84.3. (As we only possess the teeth of *Gigantopithecus* and the lower jaws of *Meganthropus* no measurements of their skulls can be given).

*Pithecanthropus robustus* is thus (so far) nearest to the anthropoids; it possesses also an ape like skull ridge, has no nasal spine, a very pronounced facial prognathism, but still characteristic human teeth. (It will be seen that the teeth and dentition are very important factors when studying man's evolution and his relationship to the anthropoids). The jaw of *Meganthropus palaeojavanicus* (which is all we possess of this pre-hominid) has larger teeth and is larger and more robust than that of the *Pithecanthropus*; still the teeth are human and prognathism moderate. The other jaw, or mandible, called the Sangiran mandible, though thicker than those of the *Pithecanthropus erectus*, *Sinanthropus* and Neanderthal is still thinner than *Meganthropus*. To show the difference of the size of teeth Prof. Weidenreich gives the length of the first molar of *Gigantopithecus* as 16.1 mm; *Pithecanthropus robustus* 13.6; *Sinanthropus* 13.4; modern man 11.4 and gorilla 14.3. *Gigantopithecus* thus easily comes in as No. 1 with his huge teeth, huge as regards length, height, crown and roots too. His teeth are longer than those of any pre or modern men or anthropoids. Prof. Weidenreich says that *Gigantopithecus*, who really was a man, or pre-man, and not an anthropoid, should rather be called *Gigantanthropus*. Objections against this definition are, first of all, the great size of the teeth, the upper and lower first molars approaching a cube whose mass is about 4170 cu. mm. against modern man's 926, or four times larger! The largest molar ever observed in modern man was 1526 cu. mm. which is still almost three times less than that of the giants of South China. The third molar of *Gigantopithecus* is 4420 cu. mm. and in modern man but 723-1450! The upper and lower molars of this giant are twice as large as those of the gorilla; still the teeth of *Gigantopithecus* show themselves not incompatible with the character of human teeth.

The new finds in Java, of *Pithecanthropus robustus* and *Meganthropus*, show that during the Middle Pleistocene period there lived there unusually large human types of monstrously massive skull and face bones. The existence of giant man in



MAP OF SOUTHEAST ASIA showing the distribution of the SINO-MALAYAN fauna (copy from Professor Franz Weidenreich's map in his "Giant early man in Java and South China")



*Top row : teeth of modern man.*

*Middle row : teeth of Gigantopithecus.*

*Lower row : Jaw and teeth of Meganthropus palaeo-javanicus.*

(Photograph by courtesy of the Ethnographical Department  
of the National Museum, Copenhagen.)

South China is therefore not impossible nor unique. *Gigantopithecus*' teeth, by the way, show nearer relationship to modern man's than do *Sianthropus*' teeth, not to speak of those of the anthropoids. Though *Gigantopithecus* by reason of its teeth is related to *Sinanthropus* and to *Pithecanthropus robustus*' as well as to *P. erectus*, it still represents a distinct type.

The teeth of *Gigantopithecus* hail from caves in the Chinese province of Kwangsi where also were found teeth of *Elephas*, *Stegodon* (extinct elephant), orang utan, deer, tapir, rhinoceros, *Bos*, *Ursus*, hyena, *Sus* (pig), and *Ailuropus* (tibetan bear).

The Reverend Father Theilard de Jhardin, a noted palaeontologist, has discovered in a limestone cave near to Hsi-ngan, to the north of Kweilin, Kwangsi province, the "yellow deposits" dating from the Middle and Lower Pleistocene which are contemporaneous with the Choukoutien deposits where the *Sinanthropus* was found. In the Yunnan and Kwangsi caves, however, no human bones, with the exception of the teeth of the *Gigantopithecus*, have so far been found; a piece of a broken jaw of a modern man does not count in this connection. In many of the lime stone caves in the Kweilin and Wuning districts (Kweichao) there has been encountered numerous fossils together with many *Paludina* shells; the latter species of snail may have constituted an important item of food for the stone age people who lived in these caves. Burnt bones, remains of charcoal fires and a quartzite scraper, reworked from a palaeolithic implement, bear eloquent witness to former habitation. *Gigantopithecus* is the earliest known representative in South China, and it belongs to the Sino-Malayan fauna (name given by Dr. von Koenigswald) which, coming from North India, spread to Java.

Prof. Weidenreich treats in detail what he calls the *Pithecanthropus* problem, saying that *Meganthropus palaeojavanicus*, who had a facial height of 175 mm, was the largest, the oldest and most primitive form, followed by the *Pithecanthropus* men more advanced and more slender in build.

The most primitive of all pre-men is *Gigantopithecus* with a facial height of 225 mm, or nearly double of that of modern man.

His brain case with its very thick walls, thicker than those of the Java men, which are already double of those of modern man, had only a capacity of 800-900 cu. cm. as compared with modern man's 1300 cu. cm. He had enormous jaws and teeth, still Prof. Weidenreich thinks his skull was not quite double the size of modern man's though far bigger in dimensions than that of any of the largest gorillas. We are unfortunately in the dark when we try to estimate the stature of these giants. Anyhow they would have had long femurs such as *Sinanthropus* had (Gorillas have short femurs) who also had an erect posture. The erect posture seems to have preceded the transformation of the skull. The *Pithecanthropus* men and other Java men were tall, from 168 to 170 cm. high, while *Sinanthropus* only reached 156 cm. (5 feet  $1\frac{1}{2}$  inch). We can only say that *Gigantopithecus* and *Meganthropus* had large, heavy and massive skulls, large strong trunks but only slightly longer leg bones.

(Still we may perhaps guess that *Gigantopithecus* was a real giant towering over the famous Irish giant, Cornelius Magroth. In this connection it is interesting to note that the Lolos (No-su) of Ssü-chuan, Yünnan and Kweichao reach a height of 1.90-2.00 m. Some individuals even exceed 2 m. in height. However, the Mossos, who live nearer the confines of Tibet, are still taller than the Lolos (See "Les derniers barbares" by General, Marquess d'Ollone, p. 178.) The Mossos possess, like the Lolos, strong regular features. Could the tallishness of these two peoples have any relation to the extinct giant men, who also lived in South China, in the way of inherited physical traits? This, if not directly, then through some ancient kind of interbreeding?)

*Gigantopithecus* probably originated in India though *there*, so far, have only been found giant anthropoids like the *Dryopithecus giganteus*, the *Sivapithecus* a.o. of the Siwalik fauna which, as already mentioned, is represented in South China and Java. Dr. von Koenigswalds theory of a Sino-Malayan fauna that spread from North India via Burma down through the Malay Peninsula to Sumatra and Java with one branch, while another branch via Yünnan and Kwangsi reached the region of Peking, is very acceptable (See map). Thus the South East Asian mainland, during the Middle and

Lower Pleistocene, was inhabited by giant hominids, ( Siam too, no doubt). Gigantopithecus was the ancestor both of the Java men and the Peking man, as Pithecanthropus and Sinanthropus represent hominids at the same stage of evolution. Did man derive from a giant anthropoid or run through a stage of gigantism during his evolution? He did so, from giant primitiveness, with a small brain, to smaller more slender forms with larger brains. Giant primitive forms of hominids may be a common feature in the evolution of man, and though not yet found in Africa and Europe may still be found there (in the Pliocene layers). And giant and small people may have lived side by side in ancient times just as do, to-day, big people and dwarfs in Central Africa, Malaya, the Philippines and in New Guinea. Prof. Weidenreich thinks there are weighty grounds to assume that the Peking man gave origin to certain Mongol groups. He also opines that Pithecanthropus was the ancestor of Homo Soloensis, who begat Wodjak man, who was the father to the Melanesians and recent Australians, the whole transformation taking place in the South East Indies during the Pleistocene age. (It is difficult, however, to see how Professor Weidenreich's theory linking the Wadjak man in Java to the ancestor of present day Melanesians and Australians, can be correlated with the finds in the stone caves of Tongking, Annam and Laos of skulls and other skeletal remains of Proto-Australians and Melanesians, as well as with the facts of these two human groups having arrived in Further India or Indochina from India where the "racial" marks of both are still noticeable in the Aryan as well as in the so-called Dravidian population.)

Prof. Weidenreich's genealogical tree of man's evolution in East Asia and Australia-Oceania then looks as follows:-

*Origin:* A large gorilla with a brain capacity of only 600 cu. cm.

Gigantopithecus, S. China.

Meganthropus, Java and Indochina---Sinanthropus, N.China.

Pithecanthropus robustus, Java. Certain Mongol groups.

Pithecanthropus erectus        ,,

Homo Soloensis                 ,,

Wadjak man                     ,,

Australians and Melanesians

(We take it that this is quite a provisional scheme subject to important alterations.)

Prof. Weidenreich concludes his treatise by saying that the Australopithecus and other South African anthropoids are closer to the hominids than Sivapithecus or other fossil or recent anthropoids found in Asia, but the gap between Australopithecus and Gigantopithecus is, so far, unbridged.

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The writer of the above review of professor Weidenreich's interesting treatise has formerly proposed that the first hominids peopling Indochina or Further India might have been a cross between Pithecanthropus, and Sinanthropus, but in view of the latest discoveries, made by Dr. von Koenigswald, we now think that they would rather have been of the Meganthropus and perhaps of the Pithecanthropus robustus type. However, it is by no means unthinkable that there may have lived Gigantopithecus ape-men in North Siam too.

Here is a task for our young biological department of the Chulalongkorn University to take up. A thorough search in the innumerable lime stone caves that honeycomb the Tenasserim cordillera from North Siam right down into the Malaya Peninsula would no doubt yield a rich harvest of fossil remains of both extinct animals and hominids.

Sorgenfri, Denmark.

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