

News of Science

Jaw of *Gigantopithecus*

John Hillaby, an English science writer, has reported the discovery of a fossil lower jaw attributed to *Gigantopithecus blacki* [*New York Times*, 17 Mar. 1957]. If this mandible is actually that of *Gigantopithecus*, it will contribute greatly to the resolution of one of the current enigmas of paleoanthropology.

Gigantopithecus is a genus of extinct primate based on three fossil molar teeth (one upper, two lower) found by the Dutch paleontologist, G. H. R. von Koenigswald, in native drugstores of Hong Kong between 1934 and 1939. These teeth are truly colossal, greatly exceeding all known human and anthropoid-ape teeth in their dimensions. Even those of an adult male gorilla are dwarfed by comparison. Von Koenigswald [*Proc. Kon. Akad. Wet. Amsterdam*, Sec. Sc., 38, 872, 1935] regarded the holotype tooth as that of a giant ape—hence the name *Gigantopithecus*. Discovery of the two other teeth strengthened this opinion. The late Franz Weidenreich [*Anthrop. Papers Am. Mus. Nat. Hist.*, 40, pt. 1, 1, 1945], however, thought that the teeth were human, rather than simian; moreover, he made *Gigantopithecus* a keystone of his tenuous hypothesis that the ancestors of man were giants.

The primate nature—indeed, the catarrhine primate nature—of these isolated teeth seems clear. Yet, since they represent such slender evidence for the precise taxonomic allocation of *Gigantopithecus*, it has seemed logical, to some people, at least, to label this genus *incerta sedis*. Notwithstanding, considerable futile argument respecting its status has continued. For some, it is an anthropoid ape; for others, a man; for still others, an Asiatic representative of the Australopithecinae, that group of so-called “man-apes” from the early Pleistocene of South Africa. From the faunal relations in which they were apparently found, the *Gigantopithecus* molars have been dated, at earliest, Middle Pleistocene.

The new jaw, attributed to *Gigantopithecus*, was recently found in a high cliff cave in Kwangsi province, South China, by a peasant. W. C. Pei, a pale-

ontologist who played a major role in the discovery of the remains of Peking man (*Sinanthropus pekinensis*), gives the geological age of the new find as Middle Pleistocene; this would make the giant a contemporary of Peking man. Moreover, Pei regards the animal as a giant ape, hence agreeing with the original diagnosis of von Koenigswald. He believes, however, that it was more manlike than any other ape, living or extinct.

Pei also sent Hillaby an excellent photograph of the new jaw, which is reproduced in the *New York Times* article. This photograph, taken from above, suggests that the mandible is quite complete rostrally, and backwards so as to include the second molar teeth. The remainder of the mandible—third molars, both rami, hence, unfortunately, the coronoid processes and condyles—is lacking. The occlusal surfaces of the teeth appear to have been worn down considerably, so that the crown patterns of the molars cannot be made out. In the general shape and proportions of their crowns, however, these teeth distinctly resemble the two type lower molars of *Gigantopithecus*. Thus, at least on dental grounds, the allocation of this new mandible to that genus seems justified. We have, as yet, however, no information about its actual size.

From the photograph, at any rate, one can concur with Pei's diagnosis of the jaw as that of an ape (but whether it is actually more manlike than the lower jaws of other apes, living or extinct, remains to be determined). Thus, the canines are massive, as in apes (they are small in men, both fossil and extant). The first premolar tooth, in contrast to the second, appears clearly to be narrow and compressed, hence sectorial, as in the anthropoid apes (rather than essentially rectangular and molariform, as in hominids); this in turn suggests a large maxillary canine tooth. As in the type specimens, the molars are distinctly longer than broad, this being another simian character. The second molar tooth is larger than the first molar, as in anthropoid apes (the reverse being the rule for men). There obviously is a large simian shelf of bone jutting backward from the lower symphyseal region between the two halves of the body of the

mandible, as in the great apes; from which one is led to infer, with reasonable certainty, that there is no chin.

The body of the jaw itself seems to be unusually thick in relation to tooth size (but it is entirely possible that this impression may be a photographic illusion), although not as thick relatively as that of *Meganthropus palaeojavanicus*. The incisor teeth, of which the left medial one is lacking, appear to be relatively small, even peglike rather than chisel-like. The space between the canine teeth is therefore comparatively narrow; consequently, instead of the tooth rows being parallel, as in existing anthropoid apes, they are slightly incurved rostrally to approximate a Gothic arch. In this, the new mandible somewhat recalls the Australopithecines, which are characterized by remarkably small incisor teeth. Nevertheless, these particular teeth of the Chinese fossil are not so markedly reduced as are those of the South African man-apes; and the presence of large canines, sectorial first premolars, and prominent simian shelf offers scant comfort for those who, like the late Robert Broom, have identified the original, isolated teeth as those of an Asiatic Australopithecine.

The mandible does not represent the entire animal; nor, indeed, can it foretell the entire skull. Yet, despite these limitations, this new lower jaw, if it truly is that of a *Gigantopithecus*, seems to make it clear that this “Hong Kong drugstore giant,” as the late Earnest Hooton dubbed him, was neither an ancestral giant hominid nor an Australopithecine, whatever precisely he may have been.

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Indian Ocean Expedition

Yale University's Bingham Oceanographic Laboratory will send the first major deep-sea scientific expedition into the Indian Ocean area around the Seychelles Islands next summer. No marine-biological expedition has ever concentrated its efforts in the Seychelles area, so that no major scientific collection of marine specimens from the area exists. James E. Morrow, Jr., research associate at the Bingham Laboratory, will lead the group, which will include Willard D. Hartman, assistant professor of zoology and associate curator of invertebrate zoology, and Alan J. Kohn, graduate student in zoology. Technical adviser for the trip will be Alfred C. Glassell, Jr., of Houston, Tex.

The expedition will use two vessels, a 110-foot mother ship in which a complete oceanographic laboratory will be installed and in which supplies will be