

Franz Weidenreich, 1873-1948

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FRANZ WEIDENREICH, who died at his home in New York City on July 11, 1948 after a relatively brief illness, had already contributed immeasurably to the advancement of the science of man and was then engaged in the completion of one of the most significant of all his monographs. His imperishable results were accomplished in spite of the anguish and distractions of two world wars. He, the flower of German science and true culture, was rejected by the monsters that ruled the land of his birth; but he lived to find, in China and in the United States of America, new and far greater opportunities for his indefatigable energy and constructive intellect.

He was born June 7, 1873, in Edenkoben of the Palatinate, Germany, and he was the youngest of four children. His father, Carl Weidenreich, was a merchant; his mother was Frederike (Edesheimer) Weidenreich. After a peaceful childhood Franz Weidenreich graduated from the Humanist Gymnasium in Landau, not far from the Rhine; he then spent six years in the study of medicine and allied science, at four great German universities, Munich, Kiel, Berlin and Strassburg, receiving his M.D. from the latter in 1899. During this period of preparation, study and travel, he assimilated much of the best of the rich Central European culture and science. One of his hobbies was botany, and he acquired a precise knowledge of the floras of the field, garden, forest and mountainside. Another was mountain-climbing, especially in the Alps, for which his short frame and alert agility were no less advantageous than his endurance.

His inaugural dissertation, dealing with the structure and function of the central nucleus of the mammalian cerebellum, was the first of some 215 contributions, the last of which is still unpublished. From 1899 to 1901 he served first as Assistant and then later as Privatdocent in the Department of Anatomy of the University of Strassburg, under Professor Gustav Schwalbe. In the laboratories of that department he conducted his early investigations on the human spleen and its vascular supply, on leucocytes, phagocytes, and other units of the blood-lymph system. This work attracted the attention of Dr. Paul Ehrlich of the University of Frankfurt a. M., whose

assistant he became in 1901. It is known, however, that he dared to differ from that famous authority when he felt that the facts supported him, and that he was glad to return to Strassburg in 1902 as Prosector. There his talents were well recognized and he was appointed Professor of Anatomy in 1904. This was also the year of his marriage to Mathilde Neuberger, who was his most faithful and devoted wife and partner during all the fateful years since then and who, with their three daughters, lives to cherish his memory.

By 1914 he had published 55 papers, mostly in hematology as above noted. As his results in hematology were published in the standard German journals, they were no doubt well known to and used by contemporary and later workers in that field; but they also gave him a special background and viewpoint; for he went on from that point to study some of the other tissues that are built up and fashioned by the units carried in the blood stream: such as muscular and connective tissues, tendons, ligaments, cartilage, bone, the dermal and cuticular system, teeth, dentine, enamel, periodontium, alveolar tissue; passing thence to jaws, skulls, the skeleton as a whole, the relation of locomotion to body-form and posture, the significance of the appendages of man, the correlation of brain and skull-form with posture; and to still wider circles, culminating in the differentiation of races and the laws of evolution. In all these subjects his discoveries and conclusions call for far wider and more careful consideration than they have yet received.

The period of the first world war and its aftermath is indicated by a hiatus of seven years (1914-1921) in his bibliography. Living in the disputed land of Alsace-Lorraine he served from 1914 to 1918 as a member of the Municipal Council of the City of Strassburg, and was president of the Democratic Party of Alsace-Lorraine till 1918. When the French took over in 1918 he was dismissed from his post as Professor of Anatomy in the University of Strassburg, and it was not until 1921 that he was able to resume his rightful place in university circles, in that year becoming Professor of Anatomy at the University of Heidelberg. His

first contributions to the problem of the origin of man date back to 1904 in two short papers on the formation of the human chin and its significance for speech. The next dates from 1913 and dealt with the hip bone and pelvis of primates and their transformation through the upright gait. Eight years later, in 1921-1922, appeared his important paper on the human foot and its origin from a grasping ape foot fundamentally like that of the gorilla. However, most of his papers between 1921 and 1926 were concerned with the microscopic and macroscopic characters of bone and related tissues, with the skeleton as a whole, with the teeth including dentine, enamel and periodontium, with the relation of the teeth to the jawbones, and with the evolution of the teeth and jaws in vertebrates. Thus he laid a wide and secure base for his later and more widely known memoirs on the skull and skeletons of fossil men. Nor did he ever have occasion to doubt the essential correctness of the views of Darwin and Huxley that man was a derivative of an ancient anthropoid stock but not of any recent genus of apes.

In 1926 he published his first paper on the fossil human skull found at Weimar-Ehringsdorf and this was also the first of his many papers on fossil human skulls. In 1928 he became Professor of Anthropology at the University of Frankfurt a. M., a post which he held until 1935. During this period he continued to publish occasional papers on blood, bone, dentine, teeth, etc., including an article of 129 pages on bone tissue. But the drift of the times inevitably directed his attention more and more to the problems of human races, both fossil and recent, and he dealt incisively but surely with this much bedeviled topic in numerous papers.

1931 was signaled by another notable contribution, on the primarily prehensile character of the human hands and feet and on their significance for the problem of human origin. Other noteworthy entries were: a brief paper on the reversibility of evolution, contesting the misapplication of Dollo's "law of irreversibility"; and several short studies on fossil skull fragments from different sites in Europe.

With other anthropologists he had followed closely the discoveries of the fossil Peking man *Sinanthropus* as described by Davison Black, and he quickly sensed its annectant characters between *Pithecanthropus*, the Neanderthals and later men. In 1934 he was Visiting Professor of Anatomy at the University of Chicago. After Davison Black's death and under the auspices of

the Rockefeller Foundation he was appointed in 1935 to be Visiting Professor of Anatomy at the Peking Union Medical College, and Honorary Director of the Cenozoic Research Laboratory, Geological Survey of China. Thus to him and to his ever-courageous wife a practically new world was opened, which he proceeded to explore and describe with his accustomed thoroughness and breadth. For several years he was happily engaged in the following activities: (1) cooperating with his Chinese colleagues Drs. C. C. Young, W. C. Pei, E. Bien, and with his friend Father Teilhard de Chardin in the direction of the extensive excavations at Chou Kou Tien near Peking; (2) supervising the freeing of the fossil bones from the matrix, the piecing together of fragments; (3) closely directing the drawing by excellent Chinese artists of every facet of every tooth and the accurate delineation of all aspects of the skull; (4) preparing the manuscripts for his imposing series of memoirs on *Sinanthropus pekinensis*; (5) writing and seeing through the press a steady stream of papers dealing chiefly with the anatomy of *Sinanthropus* and *Pithecanthropus* and with their relations with each other and with later races.

In 1937 he made a voyage to Java, joining Dr. G. H. R. von Koenigswald there in order to examine the sites of the latter's great discoveries of new and gigantic relatives of Dubois' *Pithecanthropus*. In 1938 von Koenigswald and Weidenreich together announced the discovery of a new skull of *Pithecanthropus* (*P. robustus*), and the next year they directed attention to the close relationship between *Sinanthropus* and *Pithecanthropus* and showed that the latter was older and more primitive than the former.

With the approach of the Japanese toward Peking the work at Chou Kou Tien was suspended and Dr. and Mrs. Weidenreich returned to New York, bringing a valuable collection of beautifully prepared casts of *Sinanthropus* and *Pithecanthropus* fossils, including skulls and important skull-fragments, jaws, teeth, and limb bones. As an honored guest of the American Museum of Natural History Dr. Weidenreich then entered upon the last period (1941-1948) of his amazingly productive life.

But this period, gratifying as it was in production, was not without its sorrow and anguish. During the second world war Mrs. Weidenreich's mother had fallen as a victim to the devouring Moloch. One of their three daughters, Dr. Ruth Piccagli, was in a concentration camp and her husband, an officer of the Italian Navy, had been shot for his

activities against Mussolini. The oldest daughter, Mrs. Elizabeth von Scheven, was also in a concentration camp. Fortunately the youngest daughter, Miss Marion Weidenreich, was safe in New York. After the war by incessant efforts Dr. Weidenreich at last succeeded in extricating Dr. Piccagli, and Mrs. von Scheven, her husband and two children, from the toils of red tape, and in bringing them all happily together in New York. There they all soon found useful ways of meeting successfully the problems of living in the new world.

Among the first papers which he prepared at the Museum were his memoir on "The Brain and Its Role in the Phylogenetic Transformation of the Human Skull" which was published in 1941, also "The Massiveness of the Prehominoid Skull, a Distinctive Hominoid Character." This was followed (1943) by his definitive memoir on "The Skull of *Sinanthropus*; a Comparative Study on a Primitive Hominoid Skull." Other very notable contributions of this period were "The Brachycephalization of Modern Mankind" and the memoir on "Giant Man from Java and South China." The latter was a continuation of the studies which he had formerly made in partnership with Dr. von Koenigswald, the discoverer of the giant fossil men of Java and China. Von Koenigswald however had been captured by the Japanese and it was feared that he was dead. After repeated efforts to locate him Dr. Weidenreich, with the approval of the Director of the Geological Survey of Java, prepared the last-named provisional report on von Koenigswald's casts of the material, pending a more thorough study if and when the originals should become available. Even so, this report contained a wealth of critical and constructive conclusions on the evolution of the skull, jaws and teeth of the hominoid primates. Soon afterward Dr. Weidenreich received a letter from Dr. von Koenigswald stating that he had been confined for more than a year in a Japanese prison camp and that he, with his wife and young daughter, were then in a city which had been recently bombed by native forces. Dr. Weidenreich began his efforts to bring the von Koenigswalds and the original fossils to this country. At last with the aid of the Viking Fund and the cooperation of the several governments he succeeded in bringing the von Koenigswalds to New York.

Dr. von Koenigswald brought with him the priceless original skulls and jaws of *Pithecanthropus robustus*, the jaw of the gigantic *Meganthropus*, and the isolated teeth of the

supergiant *Gigantopithecus*. One of the most important fossils which Dr. von Koenigswald brought with him, all being on loan from the Government of Holland, was the superb series of skulls of the Solo man (*Homo soloensis*) which he had also discovered in Java. Another was his own collection of hundreds of isolated fossil mammalian teeth, including those of men and apes. These he had gradually secured from South Chinese drug stores, where they would otherwise have been ground up as medicine. Dr. von Koenigswald was also welcomed at the American Museum of Natural History, and he and Dr. Weidenreich immediately resumed their collaboration in the study of this superb material.

The outstanding work of 1946 was his book "Apes, Giants and Man," based on a series of five lectures delivered by the author at the University of California in 1945. This brought wide publicity to his conclusion, based on fossil evidence, that the ancestors of man, before the separation of the modern races, were not pygmies, as often supposed, but rather, giants, at least in respect to the size and massiveness of their skulls and jaws, whatever their height may have been. This theory, being quite revolutionary, was received by some of his colleagues with slightly raised eyebrows. But in his last as yet unpublished work on the Solo skull, he supports this conclusion with extensive and detailed morphological and paleontological evidence. Another iconoclastic feature of this book was his showing that broad and narrow types of cranium and face occur so frequently in all races as to throw doubt on the theory that the classic races were originally "pure" and only acquired their "atypical" characters by subsequent mixture.

The greater part of the years 1946 and 1947 were spent in writing the text and supervising the making of drawings and photographs of the Solo skulls and their brain casts for his sections. During the present year he suffered a not very painful attack of herpes zoster, which compelled him to cancel his engagement to give a series of lectures at the University of Oregon. A few weeks later he was able to return to the Museum for a few hours each day; but not long afterward coronary thrombosis sent him to bed. For some time he appeared to be improving, but the end came suddenly on July 11.

Thus died a brave and tenacious man, who never gave in to adversities or difficulties. He was a loving husband and parent and a faithful friend. He lived by the light of reason and strove constantly to discover the facts and fundamental

principles of human evolution; nor did he ever fail to give his own knowledge freely for the benefit of mankind. It is a safe prediction that in the decades to come the name of Weidenreich will rank very high in the annals of anthropology.

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EDITOR'S NOTE

Dr. Gregory also submitted a full bibliography of the publications of Dr. Weidenreich, consisting of 215 items from 1899 to 1948. As they deal almost exclusively with anatomy, physical anthropology and kindred subjects, the bibliography will be published during 1949 in a forthcoming number of the American Journal of Physical Anthropology. With one exception (No.64, 1923), until 1935 all of Dr. Weidenreich's articles were published in German in Europe (Nos. 1-144) ; since 1938 (Nos. 168-215) all were in English.