

AN ACCOUNT OF THE DISCOVERY OF AN ADULT *SINANTHROPUS*
SKULL IN THE CHOU KOU TIEN DEPOSIT¹

BY W. C. PEI

(*Cenozoic Laboratory, Geological Survey of China*)

In continuance of the work done on that site during the preceeding two years, I went into the field in May 1929 and began further excavation of the cave deposit at Chou Kou Tien. I planned to concentrate my field work on an investigation of that part of the deposit known as the "Lower fissure"² and extending the excavation of that area downward from the level reached in 1928 in order to reach the true bottom of the deposit if possible.

The method of excavation in 1929 was the same as that of previous years but at the beginning of this year's work a reference point was established 19.6 meters below the highest part of the deposit from which to determine the bearings of all important finds.

The area of the region to be excavated was approximately 16 meters long and 10 wide. During the first three weeks difficulty was encountered in penetrating the hard layer just below the level of the 1928 excavation which had earlier been considered as the bottom of the deposit. After removal of the hard layer and a couple of meters of relatively barren deposits a rich sandy layer was reached from which were recovered numerous well preserved skulls and skeletal parts of forms which had previously been represented by few and poorly preserved fragments. No *Sinanthropus* remains were encountered in this layer.

Towards the middle of June a new *Sinanthropus* locus was encountered in the Lower fissure (Locus C in the Carnivore layer of the "northern Lower fissure"; cf. Teilhard and Young's report). From this locus a canine tooth, and subsequently during the next month, additional isolated teeth referable to the genus *Sinanthropus* were recovered.

The onset of the summer rains put a stop to our field work for seven weeks during the months of August and September but on the twenty-sixth of

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2. Described under this name in the "Preliminary report on the Chou Kou Tien fossiliferous deposits" by P. Teilhard de Chardin and C. C. Young, Bull. Geol. Soc. China, Vol. 8, No. 3, pp. 173-204.

the latter month field work was resumed. Work at this time was concentrated on the area of the northern Lower fissure, work on its southern part being stopped 14.6 meters below the Reference Point on account of the danger of blocks falling from the face of the main deposit.

Shortly after work was resumed a new *Sinanthropus* locus was encountered in the fourth layer of the northern Lower fissure (Locus D of Teilhard and Young's report). Again only isolated teeth referable to the genus were found in Locus D.

By the close of November when the weather was daily becoming colder a depth of 22.6 meters below the Reference Point had been reached. The character of the material in the Lower fissure seemed then to indicate that its bottom could not be far off while its width had become much reduced and its fossil content poorer. In view of these circumstances and since ready access to the lower working could only be assured by further extensive quarrying it was decided to bring the season's work to an early close. However, in spite of the bitter cold, the desire to know what were the lower layers of the deposit made me postpone that time as long as possible and as a result during the last few days I found two caves almost at the southern extremity of the northern Lower fissure.

One of these caves opens upward toward the southeast and the other horizontally to the northwest. These two caves may of course prove eventually to be connected but in the field I have designated them as Cave 2 and Cave 1 respectively.

When the opening of Cave 2 was found I was only able to explore it with great difficulty, having to be let down its shaft by a long rope. Some *Hyæna* vertebrae were however recovered from this cave which yet remains to be investigated fully.

Cave 1 is not so deep as Cave 2 and since it opened horizontally I was able to reach it without difficulty on November 29. On December 1st I began to remove the uppermost part of the accumulation filling the cave. At four o'clock next afternoon I encountered the almost complete skull of *Sinanthropus*. The specimen was imbedded partly in loose sands and partly in a hard matrix so that it was possible to extricate it with relative ease.

On the morning of December 3 I sent letters by special messenger to Drs. W.H. Wong and C.C. Young giving the details of my discovery and at the same time telegraphed Dr. Davidson Black.

The skull with a large block of adherent matrix together with a second travertine block containing a small fragment of the specimen were each first wrapped with layers of Chinese cotton paper and afterwards with a heavy layer of coarse cloth impregnated with flour paste. The weather was so cold that these wrappings did not become dry even after three days in a comparatively warm room of our field headquarters. Since I was afraid to transport such fragile specimens in wet wrappings the blocks were further dried on the night of December 5 with the aid of three braziers. On December 6 I left Chou Kou Tien with the *Sinanthropus* specimen and deposited it safely in the Cenozoic Laboratory by noon of the same day.

With regard to Cave I which has only been partly excavated it is of interest to note that its uppermost layer of sediments consists for the most part of fine dark colored sands containing a very few small Rodent bones and small sized bone fragments. The lower part of this uppermost layer is harder and contains occasional complete fossils. Of the latter, aside from the *Sinanthropus* skull, one especially is worthy of note, namely, the complete skull of a Rhinoceros with its lower jaw preserved in situ. This is the first skull of any mammal which has been encountered in the deposit preserved in its entirety.

The layer below the one just described is exceedingly rich in fossils which are so crowded together that but little matrix separates individual bones. Not only are the fossils rich in quantity but their quality is extraordinarily good and such specimens as complete fore-limbs of deer and feet of *Bubalus* occur without any disturbance by sedimentation. It is at this wonderfully rich level that the field work of the season of 1929 terminated.