

PRELIMINARY NOTE ON SOME INCISED, CUT AND BROKEN
BONES FOUND IN ASSOCIATION WITH *SINANTHROPUS*
REMAINS AND LITHIC ARTIFACTS FROM
CHOUKOUTIEN.*

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(1) INTRODUCTION

The discovery of bone material, which has apparently been deliberately incised, cut or broken with purposive intent, found in association with the skeletal remains of *Sinanthropus* or with its lithic artifacts in the Choukoutien caves, has already been recorded¹. In our earlier papers, however, attention was mainly directed to the stone artifacts. The true significance of the bone fragments has been more difficult of interpretation and for this reason our attitude towards them has been more reserved and our detailed description has been, in consequence somewhat delayed. However such an experienced specialist as Professor Breuil² had no hesitation, when in Peiping, in speaking of a true "bone industry" at Choukoutien. A detailed study of the whole of the material cannot be completed for some time to come. In the meanwhile this preliminary publication is made in response to the numerous enquiries received concerning the nature of the bone artifacts. In this paper I propose to deal only with a small number of selected specimens which seem to me to be typical and which were

* Received for publication December 1932.

1. Pei, W. C.: Notice of the discovery of quartz and other stone artifacts in the Lower Pleistocene hominid-bearing sediments of the Choukoutien cave deposit. Bull. Geol. Soc. China, Vol. XI, No. 2, 1931, pp. 110-141.
Teilhard de Chardin, P. and Pei, W. C. The lithic industry of the *Sinanthropus* deposits in Choukoutien. Bull. Geol. Soc. China, Vol. XI, No. 4, 1932, pp. 315-364.
2. Breuil, H.: Le feu et l'industrie lithique et osseuse à Choukoutien. Bull. Geol. Soc. China Vol. XI, No. 2, 1931, pp. 148-154.

found by myself in undoubted association with *Sinanthropus* and with stone artifacts on the Quartz Horizon 2^s.

In this preliminary note I shall confine myself to a mere statement of certain salient features of these bone fragments and no attempt will be made to provide any general interpretation of them. A very large amount of accumulated material still awaits detailed examination and, moreover, continued excavation is still yielding bone artifacts which will certainly demand new descriptions and may possibly need new interpretations.

(II) INCISED BONES

To illustrate the incised bones I have selected four specimens from many hundreds available (Pl. I, Figs. 1-4). Their abbreviated descriptions are as follows:

(1) Specimen No. Q2:2303 (Pl. I, Fig. 1). This bone fragment is marked by three long, curved incisions, two of which are intersecting. The incisions are about 1 mm deep and the contour of the incision is evenly rounded. With the aid of a lens fine striations may be recognized on the deepest portions of the incisions. This specimen was undoubtedly damaged at one edge (marked α in the figure) when it was collected, but it is evident that the incisions are not recent, since they are covered with grains of red coloured clay and minute black spots just as are the other parts of the surface of the bone.

(2) Specimen No. Q2:5301 (Pl. I, Fig. 2). This fragment shows one deep incision about 30 mm long, 3 mm wide and 2 mm deep upon its outer surface. This incision seems to have been made by repeated scratching with a sharpened and angular tool and it differs in its characters from the marks made by the gnawing of rodents or by the scratching of the claws of carnivores. In addition to this deep and extensive incision there are three shallower incised marks on the outer surface and two (and possibly more) on the inner surface of the bone.

(3) and (4). Similar, but narrower incisions are present on specimens Q2:3043 (Pl. I, Fig. 3) and Q2:3969 (Pl. I, Fig. 4). The incisions on

3. Pei, W. C.: op. cit. p. 110.

these fragments differ from that on Q2:5301 in having no uniform depth and no constant width. In addition to the main marking on Q2:3969 (Pl. I, Fig. 4) there is another smaller incision, almost parallel to the main one and an incised notch upon the fractured edge of the bone. On specimen Q2:3043 (Pl. I, Fig. 3) in addition to the main linear incision two much shallower grooves may be detected running nearly parallel to the direction of the main incision.

Since all the incisions on these specimens are covered by fine grains of red clay and minute spots of black stain, it is quite evident that they were not made by our excavators and that they are by no means recent.

(III) CUT OR WORKED BONES

On the edged specimen Q2:2332 (Pl. II, Fig. 1) there is a large and deep concavity the bottom of which is still covered by a piece of concretion and which is marked on the surface by black stain. This cut can not be regarded as the tooth mark of any carnivorous animal, since it is narrow, deep and angulated at the surface and does not correspond to the mark made by any canine, incisor or carnassial tooth. The maximum length of this depression is 26 mm, its greatest breadth 14 mm and its depth, measured from the surface of the bone, 4 mm. The surface of the depression is quite smooth and bears no noticeable relief. How this depression was made by ancient man is at present very difficult to picture. It is possible that it was cut by using a sharpened and angular implement.

A small angular, and obviously artificially worked, concavity is present on specimen Q2:4392 (Pl. II, Fig. 2). It is situated at the edge of the fractured bone and involves the inner more than the outer surface. Its maximum length is 8 mm, maximum breadth 6 mm and maximum depth 5 mm. The contour of the depression is not evenly curved; the one side being steeper than the other. Upon the sloping sides, as well as on the bottom of the concavity some fine striations are readily detected with a magnifying glass. It seems impossible that the origin of this deep depression could be correlated with the crown form of any tooth of a carnivorous animal.

(IV) ARTIFICIALLY BROKEN BONES

As an illustration of artificially broken bones, one specimen Q2:S.45

(Pl. II, Figs. 3a and 3b) is selected. As shown in the photograph reproduced in this plate, one of its broken edges is curved in an irregularly undulating manner. Every notch has the appearance of a "point of percussion" as commonly seen on stone artifacts. In all, there are three well marked percussion-like notches on one edge and four similar, but rather fainter, notches on the other. Such a series of notches must have been formed by artificial means; no natural force could produce such a result. If it were a stone specimen we would undoubtedly class it as a true implement which would be designated as a scraper. But since it is not easy to assign a purpose for producing these notches on such a substance as bone, the question of its being a true implement must remain unsettled—though there is no doubt about its having been artificially produced.

(V) CONCLUSION.

From the two to three thousand bone fragments found in Quartz Horizon 2 and elsewhere in the Choukoutien caves, it would be easy, with a little imagination, to select a great number as having been artificially worked and purposely used. Having no preconceived ideas upon the subject, and lacking the prolonged experience of an archæologist such as Professor Breuil, I here confine myself to the recording of certain features which could hardly be explained otherwise than by invoking the agency of *Sinanthropus*.

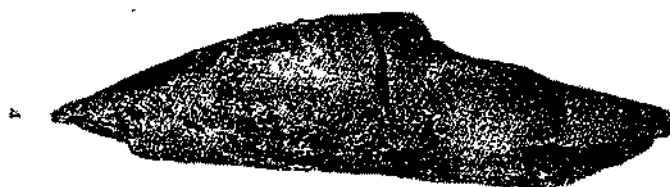
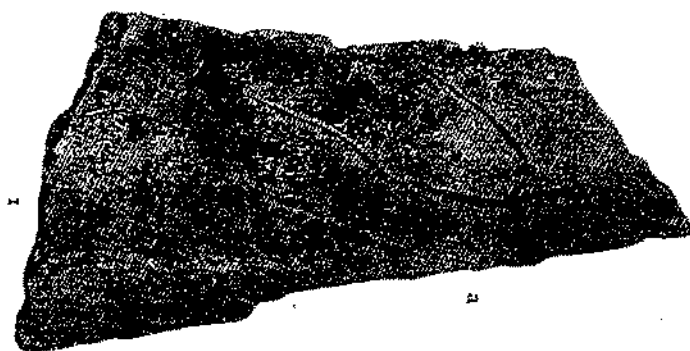
Only a few of the most evident of their features are described in this paper in the hope that more light will be shed on this interesting problem from an intensive study of still more complete material.

**Explanation of
Plate I.**

EXPLANATION OF PLATE I.

(All the figures are of natural size.)

- Fig. 1. Broken bone with three curved incisions (Cat. No. Q2:2303);
a, the border along which the specimen was damaged by the
excavator P 106
- Fig. 2. Bone fragment with one deep incision (Cat. No.
Q2:5301) 6 106
- Fig. 3. Bone fragment with three parallel incisions (Cat. No.
Q2:3043) P 106
- Fig. 4. Bone fragment with two parallel incisions (Cat. No.
Q2:3969) P 106



**Explanation of
Plate II.**

EXPLANATION OF PLATE II.

(All the figures are of natural size.)

- Fig. 1. Bone fragment with one large and deep concavity worked by artificial means (Cat. No. Q2:2332) ... P 107
- Fig. 2. Bone fragment with one cut mark on its edge (Cat. No. Q2:4392) P 107
- Fig. 3. Bone fragment with the edges worked by artificial means (Cat. No. Q2:S.45) P 107
- 3a. Side view to show the undulating edge
- 3b. Side view to show the other edge.



1



2



3a



3b