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Observations on Paleolithic Remains in Chinese Tibet.

By ARNOLD HEIM.

With 1 plate (VIII) of photos and 2 figures.

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I. Introduction.

In the year of 1923, immediately after the catastrophic Earthquake of March 24th, 1923, the Missionary J. H. EDGAR, F.R.G.S., visited the region of Shi-tshu-Valley from Tao-fu to Sharato in Chinese Tibet. With his keen eyes he discovered a *fire place* in the löss with some bones. Some years later, he published a general note on the subject, however without describing details¹⁾.

In the present paper, no general discussion of the paleolithic man in China shall be given. Some new observations however may be welcome for further judgement.

The observations presented herewith were made on our Szechuan-Tibet Expedition of Sunyatsen University, Canton, during winter 1930—31. The writer was accompanied by the geologists C. S. LEE and J. L. HSÜ of the Geological Survey of Kwangtung and Kwangsi, who however partly made separate excursions, while Mr. J. H. EDGAR of the China Inland Mission at Tatsienlu had the great kindness to guide the writer to the most interesting places of earthquakes and of paleolithic findings in the region of Tao-fu, where eight years earlier he made his first discoveries.

A separate paper will treat in detail the earthquakes and their relation to structure and morphology.

¹⁾ J. H. EDGAR, The Stone Age in China. Journal of the West China Border Research Soc., Vol. III, Chengtu 1926—1929, p. 107.

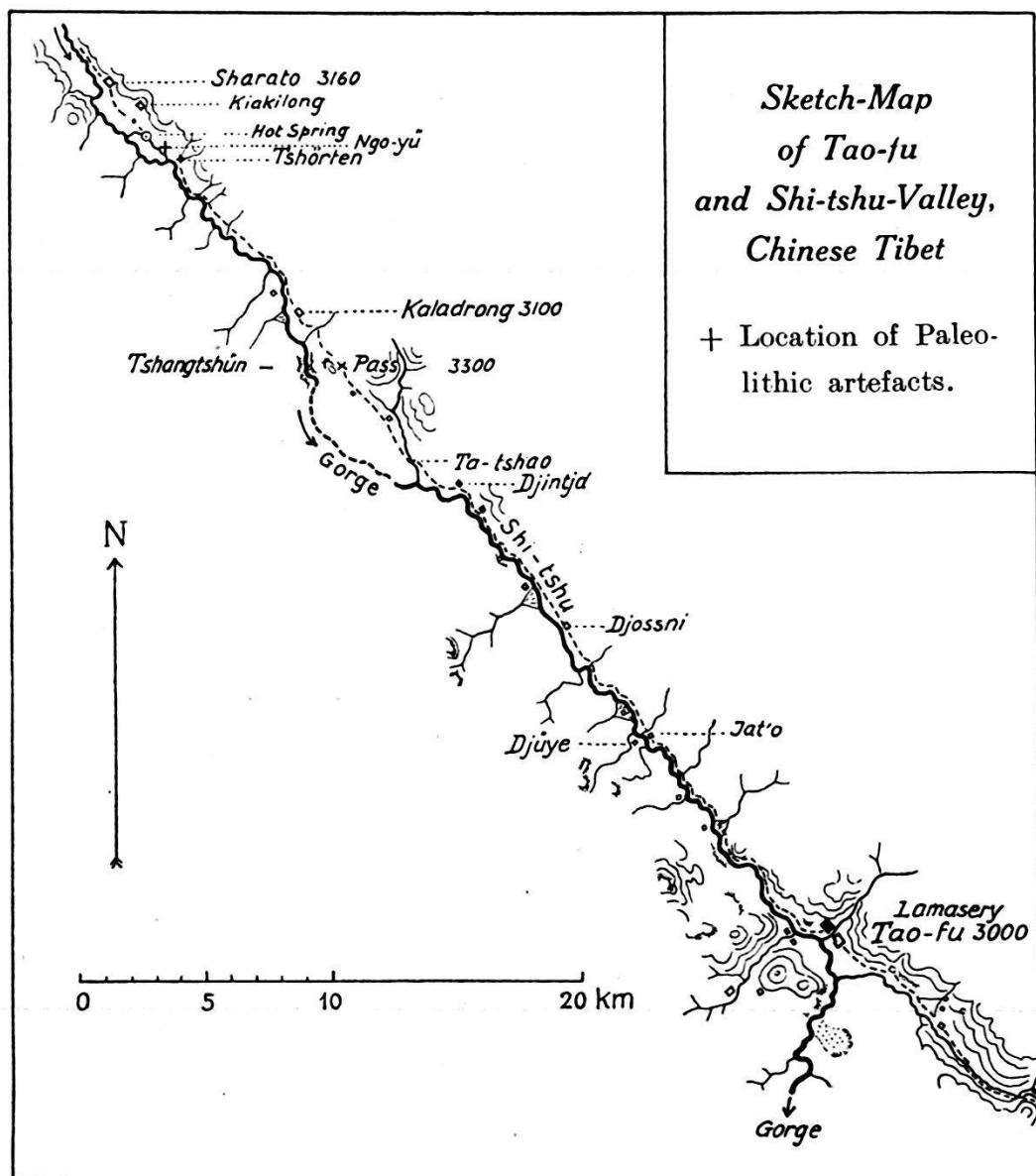


Fig. 1.

2. Location of Paleolithic Findings.

Tatsienlu, the door of Tibet and capital of the Chinese Province of Sikang, 2,500 meters above sea-level, usually is reached in 8 to 10 days by caravan from Yatshou-fu at the western border of the Red Basin of Szechuan.

The Tibetan town of Tao-fu (= Dawo = Tao-wu) in Shi-tshu-Valley, with its great lamasery, is situated in a straight line some 135 km NW of Tatsienlu. The approximate position is Lat. 31° NN, Long. E. Gr. $101^{\circ} 24'$. Normally, it takes 4 days travelling to Taining (Taining) and 2 more days therefrom to Tao-fu, with mules or yaks for the transportation of the baggage.

Further towards NW is situated the town of Sharato (= Shartong) with its abandoned catholic mission, which is reached in two further days.

Apart from Tao-fu, especially on the NE side of the Shi-tshu-Valley, the hills formed of slates and sandstone with subordinate layers of limestone are rounded and more and more covered with a crust of löss.

The main finding place of EDGAR is situated about 4 km SE of the town of Sharato at a small farming place called Ngo-yü (Kuei), about 1 km SE of the hot spring on the river bank, and 100—150 meters NE of the trail which follows the NE side of the valley. There, in a gentle side valley coming from NE, the löss is artificially terraced for growing wheat and barley.

It is the lower part of the fourth or fifth terrace-cutting above the road where Mr. EDGAR made his first discovery in 1923 as well as that of our common excursion on December 29th, 1930 (pl. I). The little wall of löss has a height of about 4 meters. The thickness of this deposit may be around 7 meters or more.

The elevation of the Shi-tshu (tshu = river) is about 3,150 meters above sea-level, and the finding place is located about 30 meters above the river.

The löss of these terraces is relatively hard, porous, light brown, without stratification. In some places however it contains angular stones and vertebrate bones. It covers the surface of the gentle side-valley in the shape of a fan, with a width of about one kilometer.

The löss of the surrounding hills is somewhat lighter in colour, softer and more porous. It contains a small *Helix* of recent type and apparently is of Alluvial age, probably somewhat younger than the löss of the valley type.

During the dry winter season, especially in January and February, when strong winds are blowing up from NW, the caravans are hidden in dust, and löss to a certain extent may be deposited in present time.

3. The Paleolithic Remains.

Besides numerous fragments of bones and lower jaws with teeth of apparently recent deer from Kiakilong, a village about 2 km SE of Sharato, found by Messrs. C. S. LEE and J. L. HSÜ, the main finding place is the one already described above from the lower part of the löss at Ngo-yü.

There, in 1923, Mr. J. H. EDGAR first found *traces of fire* associated with a small tooth besides other bone fragments, which he first considered as a human tooth. Dr. DAVIDSON BLACK, Professor of Anatomy at the Union Medical College of Peking, has been kind enough to examine this tooth, and declares that it is a *broken premolar of Sus.*

In 1930, this fire place could not be found again. Meanwhile it must have broken down from the wall and been washed away. But he found the two stone implements of fig. 2, which do not leave any more doubt of the existence of paleolithic man in Chinese Tibet.

In pl. VIII, fig. 2, Mr. EDGAR shows the place where the implement A of fig. 2 was projecting out of the little löss wall. The other piece was found on the ground below.

Both implements are made of fine-grained, dark quartzitic sandstone, broken out from rounded pebbles. The smoothed surfaces of the river pebble are well conserved and indicated with g in fig. 2 A and B.

The piece A is flat, with sharp edges all round, while in B, on the upper-side, the rounding of the pebble is left intact.

B is of the type of a *scraper*, similar to that of the *Moustérien* in Europe, while A is of the type of a blade, with a more advanced stage of stone cutting.

Dr. EMIL BÄCHLER, of St. Gall, Switzerland has been kind enough to give me the following informations, after the drawings:

"The two artefacts belong to the *older paleolithics*, which so far was called the *Moustérien* type. They are already known from the Siberian loess of Afontowa Gora near Krasnojarsk on the left bank of the Yenissei River¹⁾ and from the loess of the mountain of Wercholensk above the Angara Valley, 3 werst NE of Irkutsk. The artefacts always are made of rolled quartzitic pebbles."

"In regard to the retouched faces the artefacts however should not be called as typical *Moustérien*; they are 'Moustérien-like' or 'primitive *Moustérien*'. Such primitive forms are found also in the *younger loess* of Achenheim in Alsace and at Amiens, Northern France, together with the cleavers."

"The piece B shows primordial work, while A already is more retouched and passes to the more advanced blade-type."

"In the Chelléen-Acheuléen of Northern France such primitive work is widely distributed, and might be called the *Pro-moustérien Type*."

4. Question of Age.

J. H. EDGAR's theses of the existence of the paleolithic man in Eastern Tibet thus is confirmed by his own new findings on our mutual excursion.

The question of age however remains uncertain. Also Dr. BÄCHLER emphasizes that the pieces figured above may be of younger age than the European *Moustérien*, the same cultures over wide and different areas being far from isochronous.

¹⁾ J. DE BAYE, L'Anthropologie, t. X, 1899, p. 172.

In southern Europe, the paleolithic implements of the figured type would be regarded as belonging to the *older quaternary*. For Tibet, they may be *alluvial*. Indeed, the bone fragments in the löss of the surroundings seem to be of sub-recent type, and löss to a certain extent is still accumulated at present time during the dry winter season. In every case, the paleolithics described above are much younger than the *Sinanthropus*.

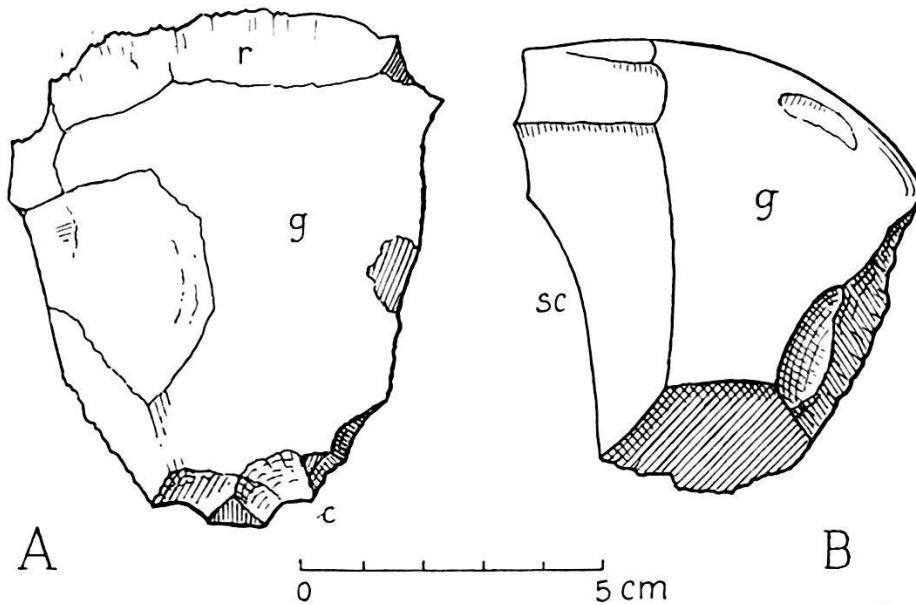


Fig. 2. Paleolithic artefacts from the Löss of Ngo-yü, 4 km SE of Sharato. Chinese Tibet. For locality of findings see pl. VIII.

A = flat piece of more advanced blade-type.	r = rough surface, broken.
B = Scraper.	c = retouchings.
g = smooth surface of pebble.	sc = sharp edge of scraper.

The löss cover at the finding place, of about 3 meters above the implement A, however seems to point out that the findings *cannot be very recent*. Most probably thus, the paleolithic man has lived in Eastern Tibet at the end of Diluvium (Pleistocene) or at the beginning of the Alluvium.

Possibly, at that time, the elevation of the place did not yet reach the level of 3,000 meters, and the climatic conditions may have been slightly better than at present time.

5. Cup-Marks.

It is again the keen observer EDGAR who has drawn the writer's attention to the *stones with cup-marks*, which we met on our mutual travelling in Chinese Tibet.

After four days travelling through uninhabited high land north of Litang, the Tibetan settlement of Tshaba was reached. It is

situated in a narrow valley at 3,500 meters above sea-level, where still wheat and barley are raised.

At the side of a small lamasery, where the bridge crosses the Nag-River, there are two half-rounded blocks of granite, each of about one cubic meter. One of them contains numerous *shallow round bowls* of 2—8 cm in diameter and of scarcely 1 cm in depth, and even only white spatches apparently made by rotating friction on the slightly weathered rock. They are partly situated on the vertical face of the rocks, and thus *cannot have been used for grinding*.

The other rock is of the same character, but also shows deeper holes of as much as 3—5 cm in depth, which apparently also have been bored. Unfortunately, the light was bad for photography.

In the writer's opinion, there is no doubt that *these cup-marks are the work of man*.

A similar kind of cups or bowls was found also in loose fragments at the surface of open fields, as for instance at a place one third of the way from Tailing (Taining) to Tao-fu. These stones are of granite or of sandstone, of the size of a hand or larger, and show the same flat round cups as described above, but more strongly weathered. Most, if not all, seem to be drilled. They are certainly not made by supporting sticks of porters, nor can they be confounded with lenticular holes which at some places have been cut out of the rock by tibetan travellers for teasing unmarried companions.

Whether the true cup-marks are in relation to the paleolithic man who has used the artefacts described above, we cannot judge.

Evidently, they have not been used for grinding grain or other material, and must be regarded as *religious signs of a prehistoric people*.

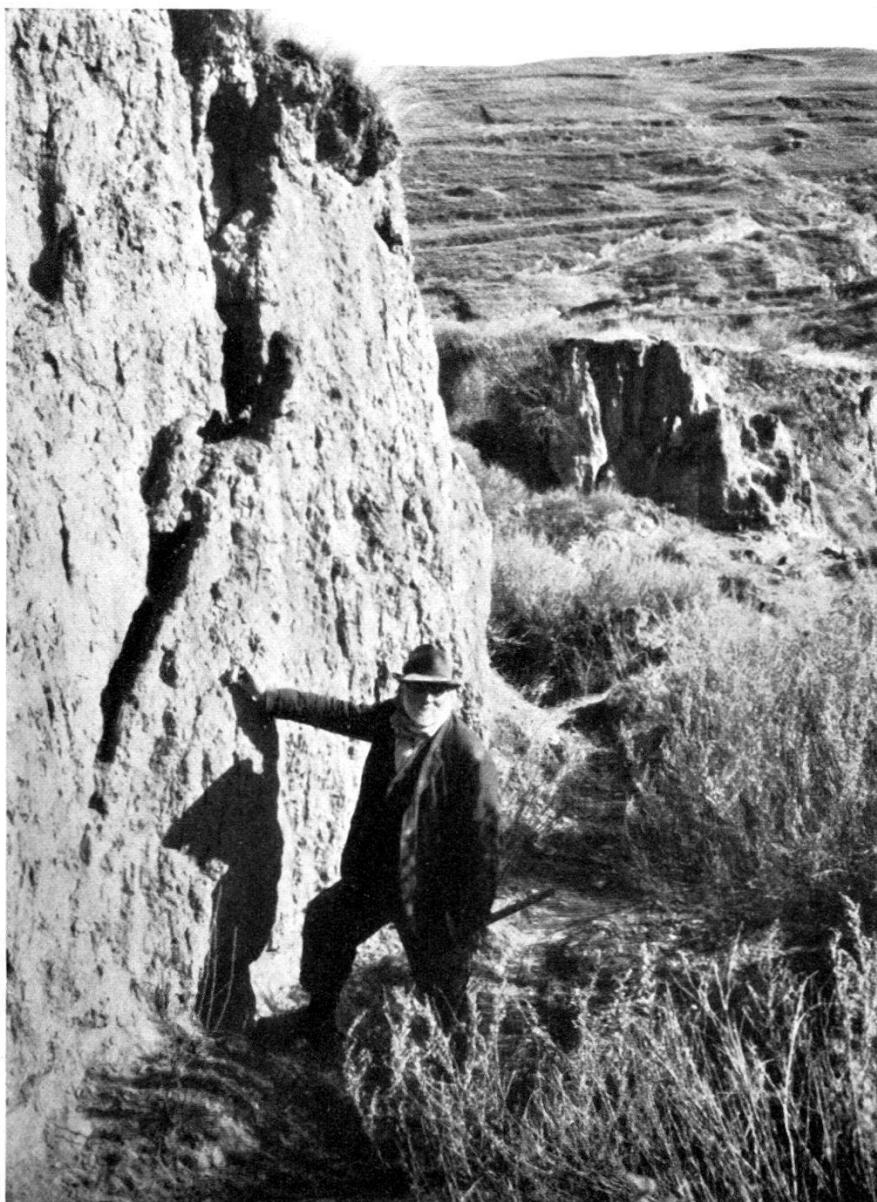
Systematic research with ample time would be necessary to clear up the different questions of the prehistoric man in Eastern Tibet. The above notes however are sufficient to prove its existence.

Manuskript eingegangen am 20. August 1933.

1



2



The loess terraces of Ngo-yü, 4 km SE of Sharato, Chinese Tibet, showing the finding place of paleolithic artefacts. Phot. Arnold Heim, Dec. 29th, 1930.

Fig. 1. Finding place in loess indicated with + in middle ground. Plowed grain field on side-valley-loess, in foreground. Ravines in hill-loess of background washed out along old earthquake cracks.

Fig. 2. Mr. J. H. Edgar showing the place where he found the artefact A sticking out of the loess wall. Same place as + in Fig. 1.