

A PRIMITIVE STONE INDUSTRY FROM TILOMONTE. PROV. ANTOFAGASTA

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Primitive stone industries characterised principally by rough chopping tools and scrapers are known from many sites on the American continent but very few of these are associated with satisfactory dating evidence.

Several assemblages of a similar primitive type were found by the author (on the northern and eastern shores of the Salar de Atacama). (1) in the course of an expedition from the University of Cambridge, England to the Atacama Desert and the Bolivian Altiplano in 1958.

Tilomonte

Perhaps the most interesting of these assemblages is that from the desert to the north-east of Tilomonte, the most southerly inhabited oasis of the Salar basin. (fig. 1). Here the desert surface is ribbed by a series of spurs which run down to the wide flat shore of the Salar de Atacama. These spurs have been formed by the erosion of a shelf of volcanic rock by a number of parallel streams flowing off the high land to the east. Deep dry quebrada beds are all that remain of these water courses which cannot have carried water for a considerable length of time.

Sixteen small stone-working floors were found strewn on seven of these spurs. They consisted for the most part of a scatter of one or two stone implements or cores and a few flakes. In some cases waste material alone was found. Potsherds were associated with stone material on two of the floors. Most of these chipping floors lay behind large boulders away from the prevailing wind or else were scattered around circular settings of local rock. These rock concentrations were only found on the most southerly spur (1) and may be the remains of weighting for wind-breaks, pole supports or possibly markers of some kind. (2)

(1) Other finds made during this expedition are published in two articles; Barfield, Lawrence 1960, A New Core-Axe Industry, *Antiquity*, Vol. 34, No 133, pp. 60-1. Newbury and Barfield, Lawrence 1961, Recent Discoveries in the Atacama Desert and the Bolivian Altiplano, *American Antiquity*, Vol. 27, No 1, July 1961

The greater part of the collected material is now preserved in the Museum of Archeology and Ethnology, Cambridge, England while a smaller quantity was retained by the Museum of San Pedro de Atacama.

(2) It is unlikely that these are grave markers as graves nearer the oasis were apparent as slight depressions in the ground surface and excavation below a similar stone setting on the San Pedro site revealed no sign of a pit,

Stone Industry

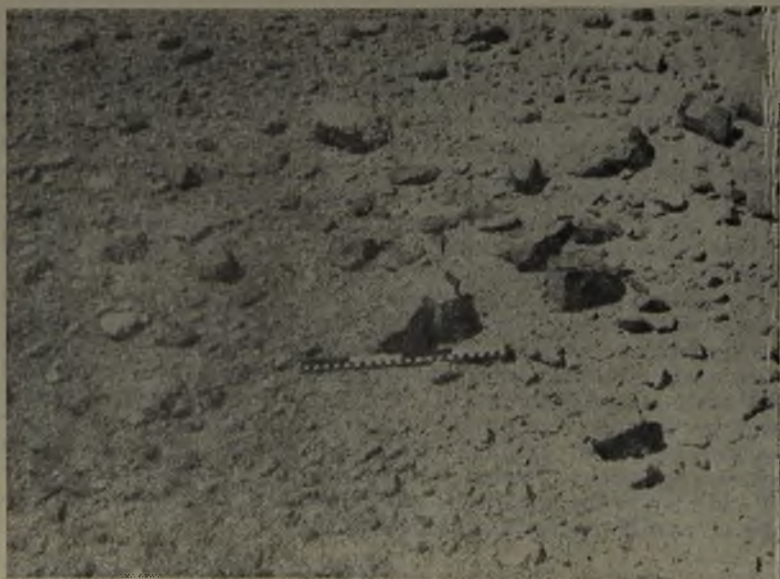
The raw material used on these sites is mainly a fairly fine grained dark green or purple-brown volcanic rock which is not native to this part of the Salar basin. The dark coloured flakes and artifacts were very conspicuous against the paler surface of the desert (PL I). On most of the sites not more than one block of raw material had been used for the manufacture of at the most one or two artifacts. Tool types are very rough and vary greatly in shape. The stone industry from these sites is here briefly described.

Spur I Site A

The artifacts from this site are all of a greenish brown rock.

1. Flake scraper, unifacially worked along one side, under-surface is the flake surface. (fig. 2, 1).

2. Core rejuvenation flake (fig. 2, 2).



PL. I.—Tilomonte; Working floor on Spur I Site A.

3. Rough implement on thick flake, unfacial working. (fig. 2, 3).

Spur I Site B (with stone setting)

4. Implement of dark purple rock, similar to N° 3. (fig. 2, 4).

5-6. Two bifacially worked flake implements of greenish rock. (fig. 2, 5).

7. Triangular sectioned core implement of purple rock. Similar to fig. 2, 9.

8. Split pebble of greenish rock with secondary working.

9. Rim sherd of open bowl, hard orange-brown ware (fig. 2, 6).

10. Rim sherd of open bowl, hard black burnished ware (fig. 2, 7).

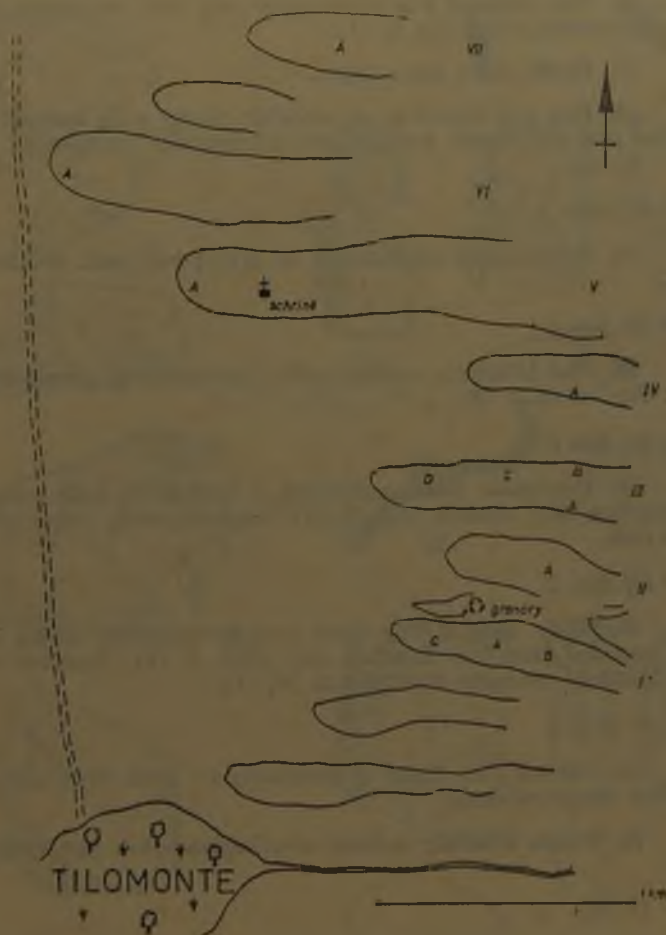


Fig. 1.—Tilomonte; Sketch plan of the desert to the north east of Tilomonte.

Spur I Site C

11. Thick flake of purple-brown rock, probably core fragment. (fig. 2, 8). Found with flakes of the same rock.

Spur II Site A

12. Triangular pick-like implement of light grey-green rock. (fig. 2, 9).

13. Rough scraper (?) of grey buff rock. (fig. 2, 10).

14. Thin flake of fine brown-grey rock with secondary working on alternate sides (fig. 2, 11).

15. Rough flake side-scraper.

16. Rim and shoulder of globular vessel with upright rim, mottled red and black surface and horizontally burnished. (fig. 2, 12).

Spur III Site A

17. Rough flake side-scraper of grey-green rock. Similar to № 1.

Spur III Site B

18. Flat bifacially worked core implement of purple-brown rock. Similar to № 29.

Spur III Site C

19. Triangular flake implement of buff-white rock with upper surface only worked. (fig. 2, 13). Together with flakes of the same rock.

Spur III Site D

20. Blade core of fine light grey-brown rock, blades have been removed from one direction only. (fig. 2, 15). Together with long blades of the same rock (fig. 2, 16, 17).

Spur IV Site A

21. Natural flat flake of purple-brown rock with unifacial working along one edge.

22. Rough bifacially worked core implement of purple-brown rock.

Spur VI Site A

Here a quantity of flakes and artifacts were scattered over a wide area at the end of the spur.

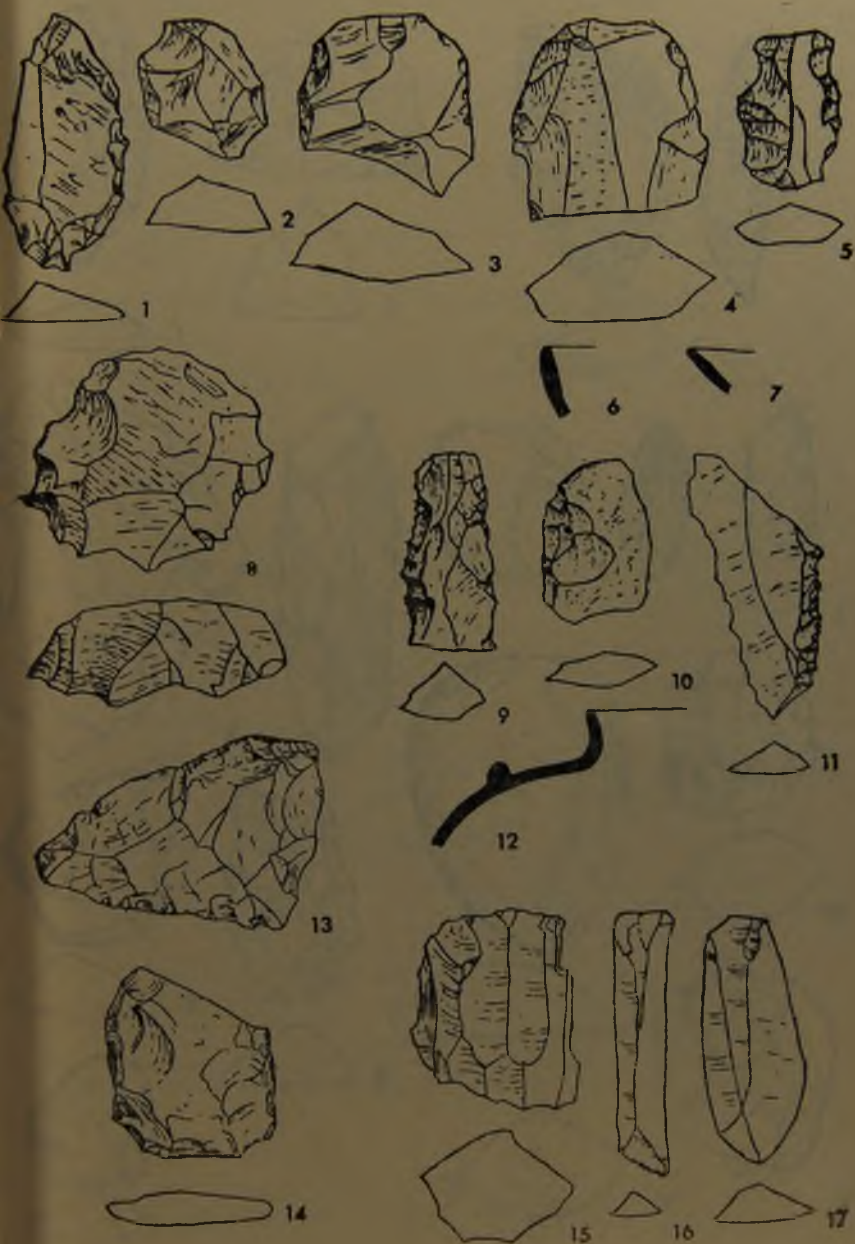


Fig. 2

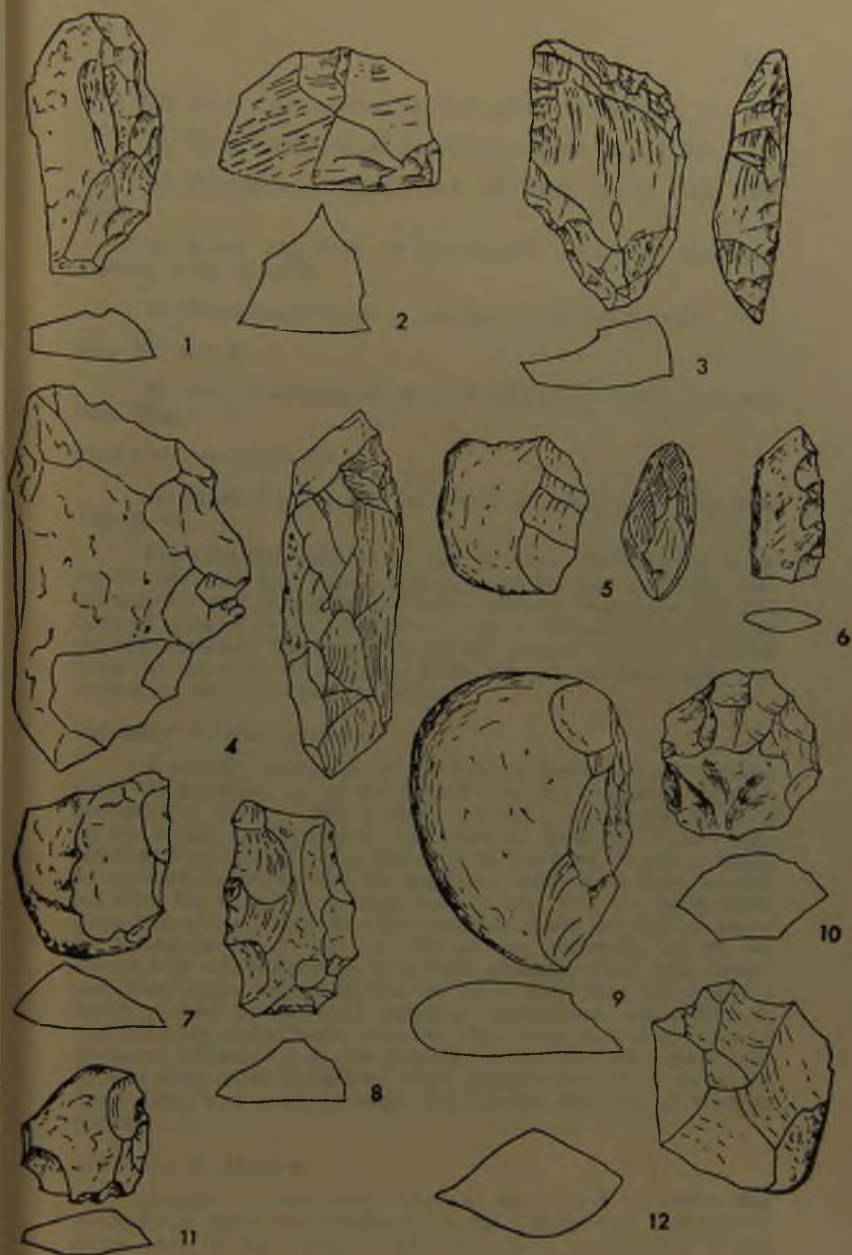


Fig. 3

23. Thick flake scraper of dark grey rock. (fig. 3, 1).
24. Flake implement of green-brown rock. (fig. 3, 3).
25. Triangular sectioned core of light brown rock. (fig. 3, 2).
26. Broad flat flake of green-brown rock with secondary working along one side.
27. Three small blades of fine yellow red banded rock.

Spur VII Site A

28. Bifacial chopper of purple-brown and naturally flat, slab rock. (fig. 3, 4).

Find from the same area

29. Straight sided core implement of purple, flat, slab rock. (fig. 2, 14).

From the above list we see that the main artifact types, in order of frequency are: flake scrapers, large flat core and flake tools (choppers?) and triangular-sectioned pick-like core tools. The flat form of some of these implements is due to the slab-like nature of the raw material. The potsherds are all similar to sherds collected from the "pucarás" of the Salar basin, but are not necessarily contemporary with the stone industry.

Geological evidence for dating

A possible indication of the relative geological age of these sites was provided by an examination of the quebradas running between the spurs. Not a single artifact, comparable to those on the desert surface above, was found in these dry stream beds although they offered ideal shelter from the wind. It can probably be assumed therefore that the quebrada beds have been scoured out since the time that the site were in use. On the other hand there was also evidence that the quebradas have not carried water for a long period of time. In one of the quebradas, on the old stream bed, was a deserted stone built granary, which still contained dried maize husks and not far away from this was found a finely worked hollow-based obsidian arrow-head, resembling in workmanship arrow-heads from the Coyo oasis near San Pedro de Atacama. Although it is not possible to give even an approximate date to these latter finds they would suggest that the finds on the spurs date from a period when the climate was wetter than at present.

San Pedro de Atacama

A similar crude stone industry was found on other sites in the Salar basin, most copiously on the high terrace to the south of the oasis of San Pedro de Atacama. Here, immediately to the

west of the Calama road after it ascends the terrace and turns south, was a large working floor about 20 m. in diameter strewn with flakes and rough stone implements. To the south of this floor were several stone settings similar to those at Tilomonte. Some of them also associated with stone knapping. A small cutting was made below one of these settings to check whether there was a grave here but no signs of a pit were found.

The main artifact types are shown in fig. 3. The most characteristic tools are the pebble choppers, (5,9 and perhaps 12). Other core tools are found, (10) and common also are the scraper-like flake implements, (7, 8, and 11). The small bifacially worked artifact (6), is an exception. A small sherd of pottery was also found but this may be of different date.

The type of raw material and the siting of the working floors together with the complete lack of projectile points are all features which are similar to Tilomonte. The artifact types themselves are also comparable, although at San Pedro proper pebble tools are found, which are absent at Tilomonte and the triangular sectioned 'pick' type is unknown at San Pedro. The differences may be partly due to the greater use of flat slab-like raw material at Tilomonte which necessarily affects the shape of the artifact.

Discussion

One question that remains unanswered is what was the purpose of these sites which lie on the desert terraces away from the present day oases. They don't seem to have been 'kill sites' for no projectile points were found, although it could have been here that animals were cut up and dismembered; nor were they quarry areas as the raw material is foreign to the sites. The other possibility is that the floors have survived from a period of more humid climate.

The author does not want to enter into a detailed study of comparable sites from the American continent but only to draw attention to its similarity on the one hand with the crude stone industry from Taltal, which has been shown by Bird to have been contemporary with the preceramic shell mound culture there (3). The Taltal industry differs however from ours in that flake artifacts are there rare. On other sites in the Central Andes similar crude stone industries seem to have survived up till the Spanish conquest. The pebble tools on the other hand are also identical

(3) Bird, Junius 1943, Excavations in Northern Chile. *Anthrop. Pap. Amer. Mus. Nat. Hist.*, Vol. 38, part 4.

with part of Le Paige's Ghatchi complex. (4). However, the large bifacially worked 'hand axes' of Ghatchi type are not found on our sites. The high dating of between 35,000 and 50,000 years given by Le Paige for this group is to be queried as it seems to be based on a comparison with the Old World Upper Palaeolithic.

Further afield chopper industries are known from Muaca in Venezuela which has been dated by C 14 to 14,000 BC and other assemblages apparently associated with ancient shore lines are known from North America. (5).

Unfortunately the Tilomonte finds provide no conclusive evidence for absolute dating, but if the pottery association is fortuitous, the geological considerations would suggest an early date.

(4) Le Paige, Gustavo 1960, Antigua cultura atacameña en la cordillera chilena; época paleolítica (2º artículo).
Revista Universitaria. Anales de la Academia Chilena de Ciencias Naturales. Años 44-45, Nº 23, pp. 191-206. Universidad Católica de Chile, Santiago.

For finds of Ghatchi type found by the Cambridge expedition see the reference to Antiquity in note (1).

(5) Wormington H. M. 1962. The Problems of the Presence and Dating in America of Flaking Techniques similar to the Palaeolithic of the Old World. Atti del VI Congresso Internazionale delle Scienze Preistoriche e Protostoriche, I Relazioni Generali pp. 274 and 277, Firenze.