

NOTES ON A CHIPPED BOULDER FOUND NEAR KEMPTON. (PL. I. AND PL. II.)

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(Read May 11th, 1908.)

It has rather been a problem whence the Tasmanian Aborigines obtained the material for their implements. The discovery of certain localities where the rock suitable for implements occurred in situ, and which were unquestionably worked by the Aborigines, has partly solved the problem. It is unquestionable that the Aborigines obtained a certain amount of the raw material from these so-called quarries, but it is equally certain that a large portion was obtained from different sources.

One of the best-known "native quarries" is that situated on Coal Hill, near Melton-Mowbray. A careful statistic of the specimens collected by me around Melton-Mowbray gave the following results:—

Cherts of all kinds	80.7	per cent.
Chert from the quarry	6.1	„
Porcellanites	7.3	„
Breccia	0.7	„
Others not included under the above headings	5.1	„

The above figures conclusively prove that, though the quarry on Coal Hill was conveniently situated and easily reached from the camping grounds near the river, only 6.1 per cent. of the implements found were derived from it. Far the larger portion, that is to say 93.9 per cent. of the implements, were made from rocks which came from other places besides the quarry on Coal Hill. A priori one would assume that, with such a convenient place as the quarry on Coal Hill close at hand, the overwhelming majority of the implements would be manufactured from material obtained from

this place, but the above figures prove that it is not the case. I had already noticed this fact when collecting, but only after carefully sorting the specimens could I fully prove it.

Considering that the quarry on Coal Hill was so close to the camping grounds, and that, notwithstanding its situation 93.9 per cent. of the implements were made from a different kind of rock, we are forced to assume that the quality of the rock was the most essential feature when it was intended to produce an implement. Though unlimited quantities were available in the quarry on Coal Hill, the quality of this particular kind of chert was not such that it was highly treasured by the Aborigines as a suitable material for implements. They unquestionably preferred other kinds of cherts to that occurring on Coal Hill; but the question arises, whence did they procure the raw material, of which they consumed such large quantities in the manufacture of their implements?

From the study of the specimens I collected I had already come to the conclusion that the gravel deposits of the various creeks, but above all the gravel and conglomerate deposits of diluvial age, were the source from which suitable material was obtained. I noticed that numerous implements, usually of the less finished type, represent fragments of water-worn pebbles or boulders, the smooth, water-worn crust being still preserved. It is, however, not till a find I recently made on a camping ground north of Kempton that this view was fully confirmed.

This camping ground is situated on the eastern slope of a low hill which stands out prominently from the surrounding flat country. It is a considerable distance away from any present watercourse, and about 200 feet, I should say, above the level of the River Jordan. Here I found the water-worn pebble, which forms the subject of this paper. I first discovered the core, and, as my attention was drawn to some fragments lying close about it, which seemed to be of the same kind of rock, I collected a few, and tried to fit them to the core. They were failures, but after repeated attempts I succeeded in fitting one to its original position, and, encouraged by this, I hunted for more, and eventually succeeded in

finding sixteen fragments which could be refitted and placed in their original position before they were flaked off.

I thus succeeded in restoring the greater portion of the original boulder, and, though a good part is still missing, and will probably never be found, that which has been preserved is of the utmost interest.

As it presents itself now we can distinguish three different parts, two of which are preserved, while the third is missing, but its shape can easily be reconstructed. These parts are—

1. The core (Nucleus).
2. The spalls or fragments falling off when the pebble was worked.
3. The fragment used as an implement.

1. THE CORE.—This part measures about 7 x 5 x 4 inches, and weighs 5lbs. 10oz. at cap. It is somewhat irregularly oblong in shape, and the lower side in particular shows the surface of a well-worn water pebble. The upper side has been subjected to a good deal of work, and, if merely judged by the planes of fracture, at least seven flakes, one of which has not measured less than $4\frac{1}{2}$ inches in length, have been struck off.

If nothing more were preserved than this specimen we could at once recognise it as a core—that is to say, the remains of a larger-sized pebble from which suitable pieces have been struck off, and which was rejected as being without further use. The size, the weight, and the absolutely unsuitable shape are entirely against the assumption that this specimen might perhaps have been actively used as an implement—a hammerstone, for instance. Even without the flakes being found, the even planes of fracture would prove conclusively that this specimen has been submitted to a passive and not too active treatment, in other words, that it is a Nucleus, which, after the desired object had been attained, was rejected.

The whole surface, including the planes of fracture, are covered with a thick patina of yellow-brown colour,

which is, however, somewhat lighter on the planes of fracture than on the original crust.

2. THE SPALLS.—I collected altogether 39 fragments, weighing 2lbs. 14½oz. in the aggregate, which apparently were struck off this core; and 34 could be replaced in their original position. It is very probable that the remaining 5 flakes belong to the same specimen, but too much is missing to permit them to be fitted together with the others. However that may be, the fact that 34 flakes, weighing 2lb. 12½oz., could again be replaced in their original position, is of the greatest interest.

The flakes vary, of course, in size and shape; but on the whole they are of a lamelliform character—that is to say, of comparatively small thickness. Most of them show a fine bulb of percussion, and it may be said that almost every one of them could have been used as an implement. I select only two—the largest and the smallest—for description. The largest measures 5 inches in length, and exhibits a fine, smooth pollical face; its general outline is somewhat triangular, the base broad, and pointed at the opposite end. The two lateral edges are sharp; the indical face shows a good deal of flaking; the smallest flake measures about 2¼ inches, and is of irregular circular shape; the edges are very sharp; the pollical face shows a fair bulb of percussion; the indical face is flat, but shows no traces of chipping. Weight, 8oz.

3. THE FRAGMENT WHICH WAS USED AS AN IMPLEMENT.—Unfortunately this is missing—in fact, it can hardly be expected that this were preserved, as it was evidently the desired object and in whose manufacture the pebble was broken. By refitting the fragments to their original place, the general outline of this missing fragment could, however, be obtained by filling up the empty space with plaster of Paris or any other suitable material. This showed that the flake, which was apparently desired for an implement, was of triangular shape, and rather thin. It measured about 4 inches by 2½, was broad at the base, and sharply pointed at the opposite end. The lateral

edges were sharp and cutting, the pollical face smooth, the indical face showing a median ridge (1).

One of the fragments is broken, and the fracture shows that the material is a dark black chert of very fine texture. The outward appearance of neither the core nor the flakes, which are covered with the same patina of light, yellowish-grey colour; would indicate that the actual colour of the rock is dark black. The comparative thickness of the crust of weathering proves, however, that the core and flakes must be of considerable age, because such a thick patina as exhibited by this specimen is not formed in a few years.

The specimen here described is unique for Tasmania, and we can only wonder at the chain of lucky circumstances that made its discovery possible. The find of the core, with a large number of spalls falling off during the manufacture of the desired object, all lying close around it, proves conclusively that the working took place exactly at the spot where it had been found. Nothing disturbed the core or the flakes since the day when they were struck off from a waterworn pebble, weighing probably not less than 10lb. Yet, as proved by the thickness of the patina, a considerable time must have elapsed since this pebble was broken. It would rather be rash to assume that the very last Aboriginal who visited this camping ground left core and spalls behind, perhaps in a hurried flight. On the

(1) Since the above was written I re-visited the place where the above specimen was found. Not only did I succeed in finding 19 more flakes, 17 of which could be fitted to the core, but I actually succeeded in finding the missing flake, the object of breaking the pebble. This had been carried away about 50 paces to the north from the place where I found the nucleus and its fragments, and there it had been dropped. It is the exact counterpart of the cast, and I must confess that, had I not recognised the likeness with the cast I had made, I would have probably left the specimen behind. It appears, as it was surmised, that this piece was taken away to be used, but, as it was apparently not suitable, it was simply rejected, and the whole work of breaking this large pebble was in vain. The edges of this flake are broken, and it may perhaps have been used, but there is no marginal chipping, and the specimen was apparently rejected exactly as it was when it had been obtained after so much labour. This is perhaps the most interesting discovery of all, inasmuch as the missing specimen was traced and actually recognised from the cast, representing its likeness.

other hand, if we assume that core and flakes had been lying for any length of time at the place where they were found it would be surprising that they were not disturbed by later generations visiting this place. The only way to account for it is that soon after core and flakes had been produced the drifting sand covered it entirely, thus preserving it almost completely as it had been left. Only of late, when the sand had shifted, it was exposed again. Lucky it was that the plough had not gone over this spot, otherwise it would have been impossible to collect such a large number of fragments belonging to one and the same core.

A number of interesting facts and questions arise from the study of this specimen. Though not completely restored to its entire shape, we can state with absolute certainty that the original was a pebble or boulder, well worn and smooth all over its surface, of deep black colour, weighing not less than 10lb. As there are no gravel deposits or conglomerate anywhere near the place where it was found, it must have been picked up at a considerable distance, and been carried to the camping ground to be used for the manufacture of implements.

The Tasmanian Aborigines have been described as a lazy lot, and it is therefore hardly probable that the Aborigine who found this pretty heavy boulder carried is for a long distance to his camping ground unless he valued the material. If he valued the material it is surprising that he used so very little of it; the size of the core proves that it contains the greater portion of the bulk of the original pebble. The fragments prove that one, perhaps two, flakes have been turned into implements. That fragment which probably has been turned into an implement seems to differ very little from those that have been rejected. In fact, considering the very crude flakes that have often been used as implements, it is astonishing to find that the two specimens which have been here described, and which are distinguished by a fine smooth pollical face were not used as tools.

It is very difficult to find a suitable explanation. If the rock was of the valued kind, why is it that so much waste was left behind? If not, why should the lazy Aboriginal trouble to carry the heavy pebble for a long

distance from the place where he found it to his camp? Can it be possible that it was desired to produce nothing but an implement of a certain size and weight, and that all other flakes, however useful they may otherwise have been, were rejected till the desired object was obtained? If this be the case, and I can see no other satisfactory explanation derived from the evidence of the core and the rejected flakes, we have to consider all the archaeolithic implements used by the Aborigines as a produce of the moment, manufactured then and there for the purpose for which they were required, and, having served their end, to be rejected without being applied to further use. This would to a certain extent explain the rather astonishing number of archaeolithes we find on the camping grounds, some of which seem to be very serviceable still.

Roy. Soc. Trans. 1908.

PL. 1.

*Dr. Noelling, Photo.*

CORE AND FLAKES, Kempton.

ROY. SOC. TASM. 1908.

PL. II.



Dr. Noetling, Photo

CORE AND FLAKES, Kempton.