

## III.

SMALL IMPLEMENTS OF QUARTZ FROM WARD HILL, DUNROSSNESS,  
SHETLAND. BY A. D. LACAILLE, F.S.A.Scot.

From time to time the Society's *Proceedings* record accessions of quartz implements to the National Museum. Not infrequently do such references relate to an isolated or fortuitous find, but in the last few years several communications by Fellows mention quartz artifacts included in series representing some local industry with which their papers deal. The accumulated evidence of years shows that Scottish prehistoric hoards comprise but a small number of quartz specimens of conventional small tools and weapons. Closer study of the question reveals that the range of distribution of these implements is nevertheless extensive, and that, in general, no one area on the Scottish mainland has produced more worked quartz examples than another.

Quartz, naturally extremely abundant and widely distributed in Scotland, was not employed to any extent by prehistoric man on the mainland. The reason is not far to seek, for of all siliceous stones it is the most intractable, varying but little in quality, whether milky or clear. It occurs in crystalline form and is devoid of cleavage, and when struck with sufficient force breaks irregularly. It would appear, therefore, that man had learned that only rude implements could be produced from it; consequently he fashioned quartz into tools only when nothing better was available. The probability also is that quartz implements, rapidly deteriorating through service by the very nature of the stone, would soon be discarded. On the other hand, quartz by its ubiquity seems to have been worthy of being more generally used because tools made of it could be quickly replaced when worn or defective. That so few implements of quartz are found as relics of any of the prehistoric cultures points to man's dislike for the material on account of its erratic fracture.

For the manufacture of large tools such as axes an unlimited variety of stone was employed, as amply testified to by the diversity of materials to be seen in practically any representative series of asciform implements. Stone-craftsmen in Scotland had no difficulty in providing themselves with raw material which lent itself to the successive processes of primary flaking, smoothing or polishing, and grinding down to a fine cutting-edge. In the matter of small tools, however, the Scottish artisan laboured under a distinct disadvantage by reason of the prevailing lack of flint, a material responsive to intentional fracture, and, by its

characteristic cleavage, adapted to the making of implements calling for delicate flaking and, in most cases, pressure trimming as well. Prehistoric man in Scotland, inhabiting a locality other than that now known as Buchan (the only Scottish district natively producing flint of good quality), when he wanted the best material for small implements, had perforce to provide himself from that part of the country where it occurred naturally. Were he unable to obtain supplies there, he had to get them from such sources as the boulder clay of the eastern district, or from the littoral raised beaches known to contain nodules of flint; or, failing these, he was obliged to import. The general scarcity of flint necessarily caused manufacturers of stone implements to use other raw material whose properties most nearly approached those of flint. Still, anyone examining collections of Scottish arrow-heads, scrapers, worked flakes, and the like, must notice the very large proportion of flint implements these collections contain, despite the rarity of native flint. The inference must be that intense trading activity in this prized raw material persisted in Scotland throughout prehistoric times.

Large series from some districts indicate that stones other than flint were not despised. This feature is marked in Tweeddale and Border collections, in which one may see large numbers of well-made implements of chert. Collections from the counties of the extreme north of Scotland comprise very many pieces made of chert, which, next to flint, appears to be the stone most generally used for the production of implements, although chert, except in the south, is not of widespread occurrence. In this regard it has to be observed that the quality of chert is far from uniform everywhere, but generally its fracture is conchoidal like that of flint.

The natural supplies of flint and chert in Scotland being so localised, it should be a matter of interest to examine the question of the other stones used by prehistoric man in those more remote regions beyond the zone of easy communication. When characteristic fracture and effects of natural agencies upon worked surfaces are better known and recognised, no doubt more light will be thrown on prehistoric industries in places where small implements have not been found in numbers.

It is not within the intended scope of this paper to treat of the many stones which might have served man in prehistoric times in the preparation of tools, nor is it my purpose meantime to attempt to deal with the technicalities of the characteristic fractures of such materials. Suggestion is put forward, however, that places such as the islands, where remains of man's occupation in prehistoric times have been found and where flint or chert are not present, should afford scope for this line of research. The straths and glens of the west country, uneasy of

access even at the present day and incomparably more so in the past, ought to provide ground for study in this particular direction.

A recent tour in the Shetland Islands gave me the much-desired opportunity of furthering my inquiries into quartz industries, the wish to pursue this line of research having been stimulated by an inspection of a variety of quartz implements collected by Mr James S. Richardson in the neighbourhood of Sumburgh Head, in the parish of Dunrossness. Thanks to Mr Wm. Laidlaw M'Dougall, factor of the Sumburgh Estates, who conducted me over the south-western slopes of the Ward Hill, 2 miles north of Sumburgh House, I was able to go over part of the ground where numbers of specimens were picked up.

The Ward Hill, rising to the altitude of 267 feet, dominates the Sumburgh peninsula at the bifurcated south end of the Shetland mainland. On the east, north and south its slopes are gentle, but on the west, after a gradual decline, the declivity is steep from the 200-foot contour toward Quendale Bay. The high ground on the opposite side of the bay, culminating nearly 2 miles beyond in the massive height of Fitful Head, protects the western face of the Ward Hill from the cold winds which are a marked and unpleasant feature of the northern islands at certain times of the year. It is not altogether surprising, therefore, to find traces of continuous human habitation on this sheltered aspect.

From the appearance of structural remains it seems that some are of no very remote period, but old land-surfaces have been laid bare by numerous small streams in floods. Dwelling-sites, apparently of different dates, have been exposed. One feature exists there in common with other places similarly subject to natural devastating agencies, namely, the resulting confusion of relics of man's occupation.

On the occasion of my visit, time and weather permitted only of the scrutiny of a restricted area, but limited as was the extent of ground covered, I was able to observe a number of stone-strewn sites which had the appearance of great antiquity. Cairn-like heaps also attracted my attention, but the contours and general appearance of the majority at sight preclude attributing them to man's work. Moreover, their great number is such that one cannot reasonably say that they are burials; albeit some of the heaps, large or small, might repay the labour of excavation. On very many of the mounds was scattered a profusion of irregularly sized sandstone fragments seemingly broken and injured by heat.

Near an eminence to the south-west, its top actually 17 feet higher than the summit of the Ward Hill, is a circular setting of stones.<sup>1</sup> This

<sup>1</sup> Described and figured in plan by the Rev. A. C. Acland in *Proc. Soc. Ant. Scot.*, vol. xxi. pp. 282-4. In his short notice the author mentions other circular settings of stones in the vicinity.

stone ring is mentioned here as a possible association in point of antiquity with some of the relics found at sites in the neighbourhood.

Many stone artifacts were picked up during the course of overground examination, but the greater number consisted of the well-known Shetland types of rude and roughly worked narrow but thick club-like implements of schist, discs of various sizes, sundry pounders and hammers derived from cobbles and much worn down.

Here, too, was collected a series of quartz implements, their facies and workmanship suggesting that they belong to an age anterior to the pieces referred to in the foregoing paragraph. Rough quartz pebbles in natural state as well as lumps and chips struck from large pieces of this stone, were also taken. These, occurring in large groups, indicate that they are the débris of working floors. Several fair specimens of tools were identified, and a selection forms the subject of these notes.

To the student of stone implements and their manufacture the types figured may offer little in the way of peculiarity. Nevertheless, certain features stand out to distinguish these Shetland quartz tools from the familiar implements of the Neolithic and Bronze Ages. A resemblance exists between the implements from the Ward Hill of Dunrossness and the common scrapers of flint found elsewhere, because of the purposes for which the tools were intended. The thickness of the quartz scrapers is marked; this characteristic is no doubt mainly due to the intractability of the stone of which they are made. That this may not be wholly so, however, is suggested by the many examples of quite thin implements of quartz which have already been found. For example, some of the quartz arrow-heads picked up in Scotland are not thick;<sup>1</sup> but it is surmised that this feature is due to the stone-knapper obtaining a thin piece by chance. When it happened that suitable flakes were struck from a lump of quartz, their sharp and often slightly serrated edges, sequent of the naturally irregular fracture of the material, would serve for some time as knives, or even saws, without any trimming.

Through long exposure to sand and wind action, the pressure-trimming, originally applied to the edges and surfaces, has in many instances acquired an appearance differing but little from the small furrows of secondary dressing of flint implements long exposed to similar natural agencies. So far has the natural rounding process acted upon some of the quartz tools that the surfaces have a sort of marbled or veined appearance, and worked specimens might well at first sight be dismissed

<sup>1</sup> *E.g.* an arrow-head from Shewalton Moor, Ayrshire; A. D. Lacaille in *Proc. Soc. Ant. Scot.*, vol. lxiv. p. 44; arrow-heads from Gullane, East Lothian; Freswick, Caithness; Fyvie, Aberdeenshire; Corrieshadder, Lewis; the Culbin Sands, Moray; J. Graham Callander in *Bulletin de la Société Préhistorique Française*, vol. xxvii. p. 215.

as of no moment. Close inspection, if necessary under the magnifying lens in doubtful instances, will not infrequently show trace of the deliberate work expended upon the surface of the stone.

For illustration, a selection has been made of a number of quartz specimens. The first figure shows well-known forms differing in no way or but slightly from similar implements of flint, although the

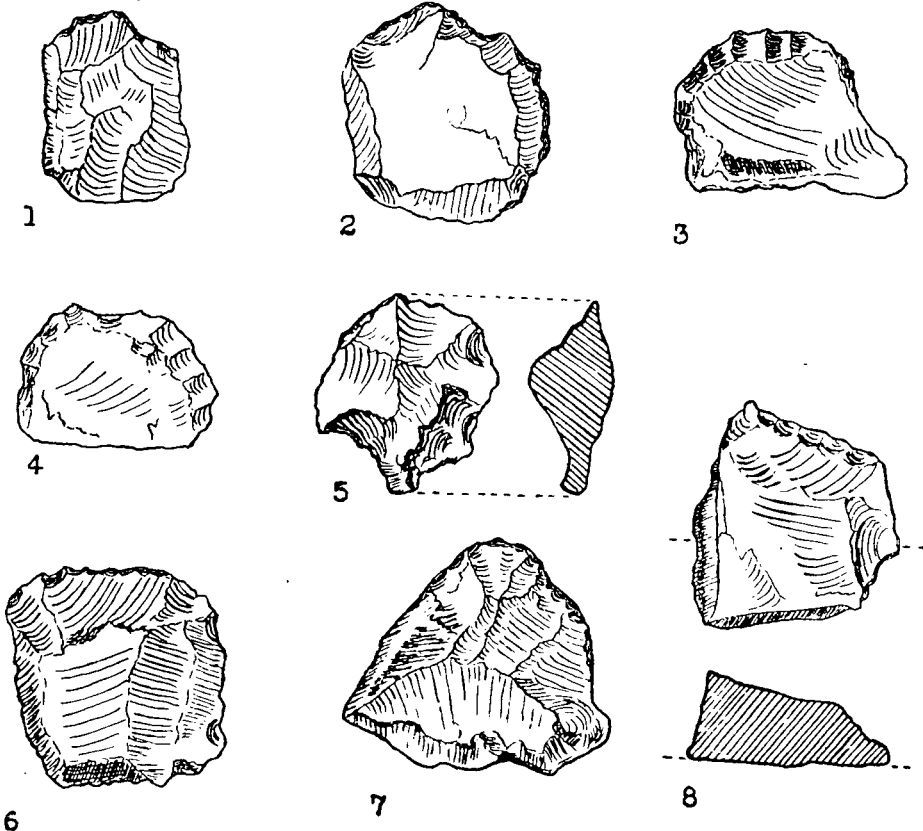


Fig. 1. Scrapers of White Quartz from Ward Hill, Dunrossness, Shetland. (†.)

treatment of the stone in the production of the tools themselves may not have been the same.

The series in fig. 1 consists of eight scrapers approaching conventional types, No. 1, however, being high ('6 inch) in comparison with its length and width; these respective dimensions are 1 inch and '8 inch. The tool is fashioned from the greater part of a quartz nodule of the size of a walnut. In the making of this artifact, at least five primary flakes have been struck after splitting the nucleus. The irregular edge, in

shape like a horseshoe, is worn by use, but in places some secondary working is still apparent. All the facets and arrises of the trimming and large flakes are softened by long exposure to natural agencies. Scrapers 2, 3, and 4 are very similar to flint artifacts: they are all thick and comparatively flat-surfaced on top. No. 2 has been roughly shaped to produce a steep and sharp working edge. In addition to elementary treatment, the maker of the tool found it necessary further to dress the piece all round, but this trimming is no longer distinct. No. 3 differs little from its neighbour, but its working, although weathered, is better preserved. It would appear that the tool had not seen long service. Of all these scraping tools from the Ward Hill, No. 4 is the finest, because the quartz, from which this specimen has been manufactured, responded well to the workmanship of the craftsman. The straight blows directed upon the upper flat surface have successfully imparted a symmetry of form to the tool, and the slight pressure-trimming directed upward from the edge has resulted in the production of a neat scraper. No. 5 is irregular and injured, and provides an example of the erratic fracture of quartz, despite the distinct traces of flaking. The top of this scraper is high, rising in a sort of pyramid.

Nos. 6, 7, and 8, all of white quartz, are larger scrapers than those mentioned in the foregoing paragraph. Of these, the first in order has suffered most from wear and action of weather. What was once a sharp edge is now quite blunted, a condition due mostly, no doubt, to sand and wind. At the corners of the wider end the flake scars are still discernible. Next is a particularly interesting specimen, not only on account of its symmetrical shape, but because of the working expended upon it. Although all attrite the facets are nevertheless very distinct, both primary and secondary work being easily detected. The under surface is flat except close to the butt end, where the distinct protuberance of partially conchoidal fracture is visible, although trimmed down slightly on one side. This feature does not appear in No. 8, but one can discern the point of percussion below which radiate one or two marks showing that when freshly struck the fracture of the quartz produced scars now almost obliterated. The upper surface of this tool is smoothed by nature, but much of the sharp edge of its basal working end remains. The portion of quartz, removed to form this unusual obliquity, has left a concave scar of some depth.

Some flakes are shown in fig. 2, and these specimens possess certain features deserving notice. No. 9 is a thin piece of greyish, translucent quartz with all the characteristics of fracture occurring in better qualities of siliceous materials employed by man in the making of small tools. Despite the weathered condition of the surface, each

peculiarity resulting from the intentional delivery of a blow is discernible. The swelling under the narrow striking platform, with point of impact evident, affords an example of bulb of percussion, which is extraordinarily conspicuous for such unresponsive stone as quartz. The scar, a little to one side of the lower part of the swelling, is not very pronounced. One or two radiating fissures below the bulb of percussion

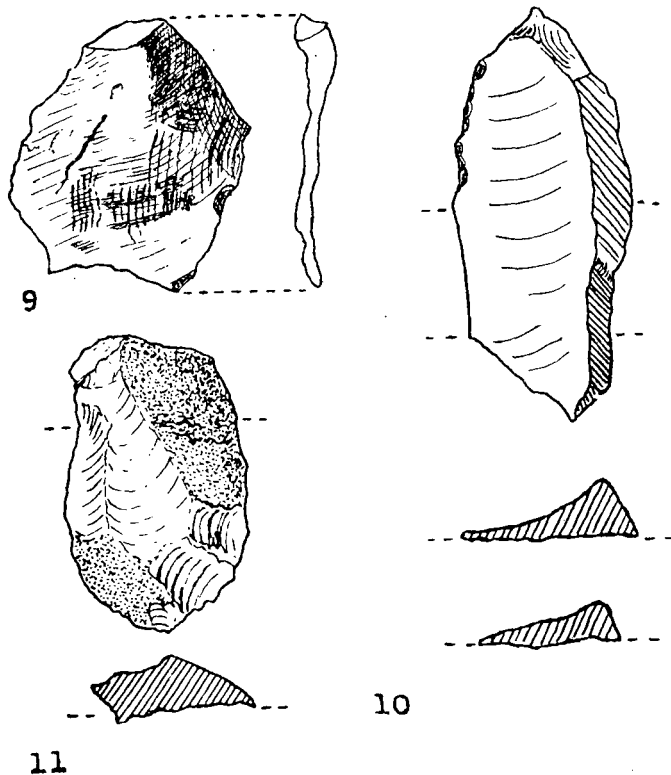


Fig. 2. Flakes of White Quartz from Ward Hill, Dunrossness, Shetland. (†.)

are visible, and these do not differ from the fissures occurring often on flint flakes. An outstanding peculiarity, however, makes this specimen of quartz fracture quite unlike the intentional splitting of flint; this is the number of veinules extending from the bulb to the edges of the flake. The piece of quartz under examination terminates in a sort of hinge, thereby emphasising the similarity between this instance and a typical flake of flint.

On No. 10, a long and comparatively narrow flake, a vestige of bulb of percussion appears, although the striking platform has been sliced

by an oblique stroke. This piece of quartz seems to have served as a knife, for not only does it adapt itself well to the hand, but the steep back is particularly well suited as a rest for the finger, which can be heavily pressed in the small hollow near the tip. The edge, although injured for some distance, still retains much of its original sharpness. In common with many of the other quartz implements, the under surface of this specimen is much pitted.

Spalls, some bearing vestiges of working upon them, were found on Ward Hill, but only one seems worth figuring. The example No. 11 is a typical instance of a tool made from a chip of convenient shape and size, only rudimentary working being applied to this fragment detached from a quartz pebble. One side of the curved surface near the butt and a small portion at the other end retain their smooth but weathered crust; these corticed areas are separated by a flake scar. The largest flake, which has been removed from the top of this rough implement, has been lifted from near the back, and, appearing like a continuation of its large scar, is the depression caused by the detaching of a smaller piece of quartz opposite on the sloping and partly curved natural surface. From the rounded end a similar small flake has been struck leaving a shallow bulbar cavity close to the edge, which seems to have been worn down. Whether the stone here has been pressure-trimmed or not, it is now impossible to say. The nether surface has nothing remarkable save for a slight concavity under the rounded extremity: this hollow appears to be less ancient than those scars resulting from undoubtedly deliberate workmanship.

During the last few years several series of quartz implements, closely resembling the pieces described, have come to my notice. It is not necessary to stress Continental prehistoric instances nor those studied in ethnographical collections with a view to comparison. Nevertheless, it may be said that elsewhere, as in Scotland, and considering localities of origin, quartz, despite its widespread occurrence, was employed by those prehistoric and primitive people (whose craftsmanship was represented) only in default of more tractable stone.

Of what may possibly be termed domestic implements, Scottish mainland quartz examples have been met with in early contexts, for some Mesolithic instances are on record from Tweeddale.<sup>1</sup>

In the Kelvingrove Museum, Glasgow, is shown a particularly well-trimmed scraper of quartz found about ten years ago at Ardgoil, Argyll. Excepting for its larger size this specimen from the western county compares well with the Shetland artifacts in point of workmanship. In my possession is a split quartz nodule found on the shore of Loch Lomond, near Rowardennan. Bearing more signs of use than

<sup>1</sup> J. Graham Callander, in *Proc. Soc. Ant. Scot.*, vol. lxi. p. 326.



evidence of intentional trimming, it provides an example of the utilisation of a conveniently sized and shaped stone.

It is understood that excavations conducted in the summer of 1930, within what was believed to be a cashel at Strathlachlan, Loch Fyne, yielded a number of implements of flint and quartz.<sup>1</sup> As these implements have not been the object of personal examination the writer cannot say how they compare with the northern types.

Among different sets of quartz implements I have studied, those most nearly resembling the Shetland artifacts consist of a series of five found by Mr J. G. Marsden in the parish of Camborne, Cornwall. The main characteristics of the pieces from Dunrossness are also present in the English examples.