

## I.

## THE SMALL FLINT KNIVES OF ORKNEY.

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Survivals of types of stone implements from an anterior age are not rare, and while much has been written concerning their evolution less account seems to have been taken of the devolution or degradation of any particular kind, save to mention that such or such a type disappears or passes out of use. Disappearance or disuse of certain implements, once common, would not necessarily take place simultaneously nor even ubiquitously. In many instances proof is forthcoming to show how some traditional types long survived even in localities where least expected. Examples, which appear to represent this, are the object of these notes.

If the antiquity of the artifacts from the littoral terrace and the cave and mound deposits of the western seaboard be accepted, then the hiatus between the time of their manufacture and the early Scottish Neolithic can only be regarded as partially bridged despite discoveries made during the past twenty years. Much has been done to fill this gap by finds and records of implements, whose facies and workmanship are definitely pre-Neolithic. The artifacts from the Dee and Tweed valleys appear to represent an earlier pre-Neolithic horizon than the specimens collected at Shewalton, Ayrshire. Considered as a whole, I believe that all these Scottish specimens, earlier in the North-east and South-east than in Ayrshire, help to clear away some of the obscurity veiling the interval. Marked notice should be taken of the distribution of these microlithic industries, particularly of their spread northward, as represented in the important Deeside discoveries made before and since 1913.<sup>1</sup>

Having been interested for many years in Scottish microliths and other stone artifacts presenting, as many do, archaic forms, it was with particular attention that I examined certain small implements with battered backs from Orkney preserved in the National Museum. A visit

<sup>1</sup> Hilda M. L. Paterson in *Man*, vol. xiii. No. 58, pp. 103-5.

to Orkney during the latter half of 1932 afforded an opportunity to inspect private collections and survey ground where such specimens had been found.

Several archæologists have in recent years pointed out features to show that the stone industries of the Orkney Islands differ in some respects from those of the Scottish mainland. Prehistoric man inhabiting islands of the Orcadian archipelago was better provided than, say, his Shetland contemporary in the matter of raw material for small tools by reason of the local occurrence of flint. Although Orkney flint is not generally of very good quality, in ready access to supplies man was even more fortunate than many of his neighbours south of the Pentland Firth. Inferior as may be the native flint of the Orkney Islands, the fact stands out that small implements fashioned from it give a distinctive appearance to the local industries. The question of poor workmanship may perhaps arise, but to the raw material must be attributed the blame for apparent rude execution, for it can be shown that, when a piece of flint of better quality presented itself, the Orcadian artisan proved that he was not a less skilful exponent of his craft than his mainland neighbours.

Some critics may adduce that the quality of the stone available in Orkney dictated the shape of the artifacts, and that certain pieces, intended for quite ordinary purposes, were made to forms not found generally where more tractable material could be obtained. Admitting the validity of this hypothesis in certain cases, it can nevertheless be refuted as a general principle, for, if the products in stone of the prehistoric cultures be studied even in respect of localities, it will be observed that artifacts conform morphologically through the ages to certain standards. Naturally enough there are some divergences: one region may, simultaneously with another, or alone, have retained longer a particular kind of implement: or, in another district, types formerly favoured or surviving elsewhere may have been discarded. The characteristics of shape prevail with little regard for the material employed in the manufacture of artifacts, and the main features of the culture are always evident. Study shows that the nature of the stone available was not always the factor determining whether it was possible to make implements conforming to standard shapes of the time. If possible, further working or trimming would be applied to the shaped artifact such as would ultimately result in producing as the completed piece a more or less well-finished article. This characteristic, well borne out throughout the Stone Age, is all the more apparent in those implements, which, after primary flaking, were submitted to further treatment of

surface and/or edges by means of fabricators of different substances, such as stone, bone or hard wood.

Sometimes it is the good fortune of the collector of stone implements, whatever be the place searched by him, to pick up a specimen of unusual shape, or one whose purpose may long remain undetermined. When, however, a certain form occurs constantly in one region and is apparently not known elsewhere, inquiry seems to be called for. Now, the artifacts, to which particular reference is made in this communication, were collected on the surface with stone implements usually attributed to the industries of the Neolithic and Bronze Ages. Their forms recall earlier products and they are not unlike some artifacts from the 25-30-foot raised beach at Campbeltown figured and described by the Abbé Breuil in our *Proceedings*, vol. lvi., fig. 1, pp. 262-3. Research and examination of very many British and Continental collections representative of the crafts of the Neolithic and Bronze Ages have not so far shown me examples satisfactorily comparing in the strict sense of morphology and execution with these Orcadian implements.

It will be observed that the small flint knives resemble the blades *à dos abattu* numerous from the dawn of the Upper Palæolithic, through the whole of which age and the Mesolithic they are met with in numbers. These Orkney artifacts, very few examples of which exceed  $1\frac{1}{4}$  inch (Om. 031) in length, are like penknife blades. They are thick rather than wide in proportion to their length. The trimmed backs are steep and the implements consist of flakes triangular in section. Variations occur, some of the specimens being quite thin and bearing evidence of primary flaking.

The Orkney implements illustrated (fig. 1) are selected representative specimens in the National Museum and examples kindly lent by Mr Thomas Omand, Mayfield, Stenness. With the exception of No. 7, from Heddle Hill in Firth parish, the pieces illustrated come from the parish of Stenness. While not common in Orkney, it is believed, nevertheless, that they are not altogether unfamiliar to the student of Orcadian stone industries.

On the occasion of my visit to Orkney time did not permit of any extensive survey of the ground where the small artifacts were picked up, but an examination did confirm what Mr Omand told me, namely, that no stratigraphical data existed. Another collector, Mr Robert Rendall, Kirkwall, with whom I conversed on these matters, has assembled a series of stone implements in the same way by constant and diligent search of ploughed land when conditions were most favourable after

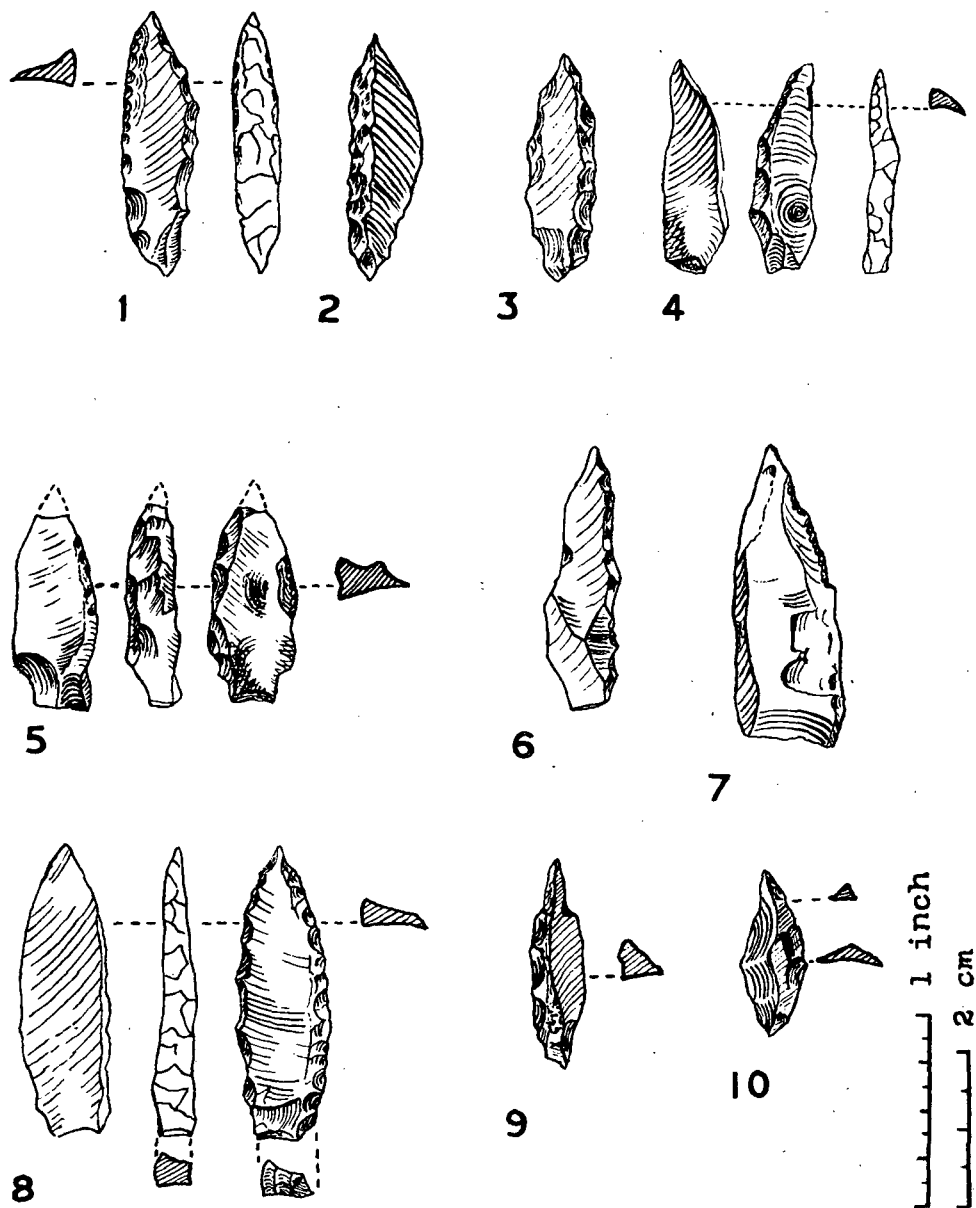


Fig. 1. Orkney Flint Implements with battered back (*à dos abattu*).

rain.<sup>1</sup> In short, to the best of knowledge, the specimens have been turned up by ages of agricultural operations. Thus they consist of surface finds, for no reason can be advanced meantime to show that they differ in period from pieces found in the same conditions and exhibiting analogous characteristics of craftsmanship. There appears to be no question here of artifacts derived from a littoral terrace; the average altitude of the ground and the situation where the pieces were found rule out such a possibility even if there existed a raised beach in the region. Moreover, their fresh condition would set aside ascription to very great antiquity.

Apparently the particular implements, with which these notes are concerned, are a survival of forms met farther south in contexts, which, by their workmanship and conditions of discovery, indicate an earlier horizon than the specimens from Orkney. All that can be said at present, therefore, is that they were manufactured to serve a local need similar, no doubt, to one which had existed elsewhere and which had dictated the employment of special instruments. Despite poor flint used in their make the specimens are well worked, but one example of a better quality of stone belies any opinion which may have been formed to the effect that the prehistoric artisan in Orkney was less capable than his mainland contemporary (No. 8, fig. 1, *infra*). Orcadian flint implements are generally made of greyish material, but many have been fashioned in a brown tending to yellow. When artifacts from these northern islands are examined, it will be noticed that the most delicately worked are those in the more tractable darker shades.

No. 1, of grey flint, has been struck from a nucleus and the bulb of percussion removed, several scars at the butt end showing that tiny flakes were detached. The back is steep and slightly rounded by careful pressure-trimming, probably by a bone fabricator. By removing material at regular intervals along one edge, and by slight pressure irregularly along what in the finished article may be regarded as the upper arris, a rounding was produced in the middle of the back. To this specimen does not apply one of the methods suggested that battering of the back was effected by the delivery of light blows, for the hollows, corresponding to the small bulbs which would result on the pieces detached, testify to dressing by the slight pressure of a fabricator with a lifting and follow-through movement. For the greater part of its edge the implement under notice has been finely dressed on one face to give the tool sharpness and a cutting edge of greater durability than the part left plain which bears no signs of wear. To ensure this property the

<sup>1</sup> Robert Rendall in *Proceedings of the Orkney Antiquarian Society*, vol. ix. p. 21.

edge on the other face near the pointed end has been slightly trimmed. The drawing outlines the disposition of the working on the back. No. 2 is figured for illustration of its steep back, and No. 3 for its similarity to No. 1. Of these three specimens from Stenness, No. 1 belongs to Mr Omand and Nos. 2 and 3 are preserved in the National Museum. No. 4 (lent by Mr Omand), as the side-view shows, has been well dressed on the back, but the quality of the brownish flint has allowed of more delicate trimming close to the sharp point. Near this the edge has been so finely dressed that it is difficult to distinguish the secondary work from signs of use, but marks of wear are visible close to the butt end. This specimen is made from a small flake originally fracturing along an irregular plane of cleavage. Fine flaking near the butt has so trimmed down the artifact that one might assume the implement was made to be hafted. Employment of such a piece of stone, which would probably have been rejected in a locality well supplied naturally with flint, shows how valued was this siliceous material by the Orkney craftsman. The striking platform forms a high angle and the bulb of percussion is most pronounced, the absence of scar, but with many radial fissures emanating from the bulb, pointing to the use of a hammer with the artifact in the making held in the hand. No. 5 (Omand collection) is a rough specimen with a steep battered back. The point is broken, but it is not difficult to reconstruct the full length of the implement. From the presence of a complete cone of percussion on one of the faces it would appear that the stone, from which this artifact is fashioned, was struck unsuccessfully in the first place. Below the cone the edge bears very fine trimming, the necessary preparation for which has been practised on the actual cone slopes by removing flakes so thin as to have been veritable minute scales.

Nos. 6 and 7, in the National Museum, differ somewhat in character from the foregoing, but in execution they are not less interesting. No. 6, retaining the principal feature of the steep back present in Nos. 1, 2, 3, 4, and 5, is, however, much thinner than those described in the preceding paragraph. The greater flaking is bolder, three flake-scars showing on the principal face. No. 7 is of a type more familiar as forms approaching it are well known in the Neolithic and Bronze Ages. This flake tool was treated in a special way, however, as the trimming is confined to a relatively small portion of one edge which is slightly notched near the point up to which the dressing is carried.

No. 8, from Mr Omand's collection, is made from a flake of light brownish-grey banded flint of a quality scarcely inferior to material from localities rich in this stone. The workmanship of this piece is apparently

of late technique, but, strangely enough, associated with features suggesting ancient industries. In appearance the steep back recalls pre-Neolithic artifacts. This association is attractive and the specimen is particularly interesting in this study. The bulbar portion is missing, having been removed from the small flake by a stroke across the piece. On either side of the resulting negative are the scars of trimming, thus providing the tool with a faceted butt. The cutting edge is delicately fashioned for the whole length of one side by careful trimming, which has left the finest of scale scars running from the edge inward for nearly an eighth of an inch. The pointed end is even more finely finished and the back similarly retouched for a short way, but beyond the working merges into coarser pressure-flaking scars. The cutting edge testifies to greater wear near the point than farther down towards the butt. Thanks to Professor G. Schwantes, the Director of the Schleswig-Holsteinisches Museum, Kiel, I was able in November 1933 to examine and compare a Mesolithic flint knife,  $2\frac{3}{4}$  inches (Om. 07) long, with this Orkney tool.<sup>1</sup> The two specimens very closely resemble each other, but the example from Gundendorf, Holstein, is much thinner in proportion to its length.

Inquiry as to the different purposes served by some prehistoric implements has not been pursued to any length, and, although comparative ethnography furnishes many solutions, some abstruse problems respecting prehistoric tools have been elucidated in unexpected manner. In this connection, and bearing on stone artifacts of a type technically resembling those from Orkney, there have been finds in the British Isles and on the continent of Europe of bone harpoon heads with thin and delicately trimmed geometrically shaped stone implements firmly fixed in grooves along their ventral and dorsal ridges. Similar mountings in weapons and tools of modern primitive peoples confirm that many such specimens of stone implements were made to serve as barbs and teeth. Discoveries of handles, hafts, and holders of different substances with stone implements still fixed in them have satisfactorily explained pieces whose purpose formerly was unknown.

A suggestion has been advanced that the steep-backed Orkney flint artifacts are arrow-heads, but it is believed that the illustrations and reference to comparative examples to be mentioned will dispel this opinion. Two apparently doubtful instances are represented by Nos. 9 and 10 (Omand collection), but it is the writer's view that only No. 9 can be regarded as a true point. No. 10 is the only example in the series

<sup>1</sup> No. 9057 in Schleswig-Holsteinisches Museum. Professor Schwantes tells me that in Schleswig-Holstein such implements do not occur in contexts later than Mesolithic. Letter to the author, dated Kiel, August 8, 1934.

figured here, which may have served to arm an arrow, and the dressing of the portion near the point is similar to the working on some of the specimens already described. Regarding such implements with battered backs, one fact seems to have been overlooked (although not relevant

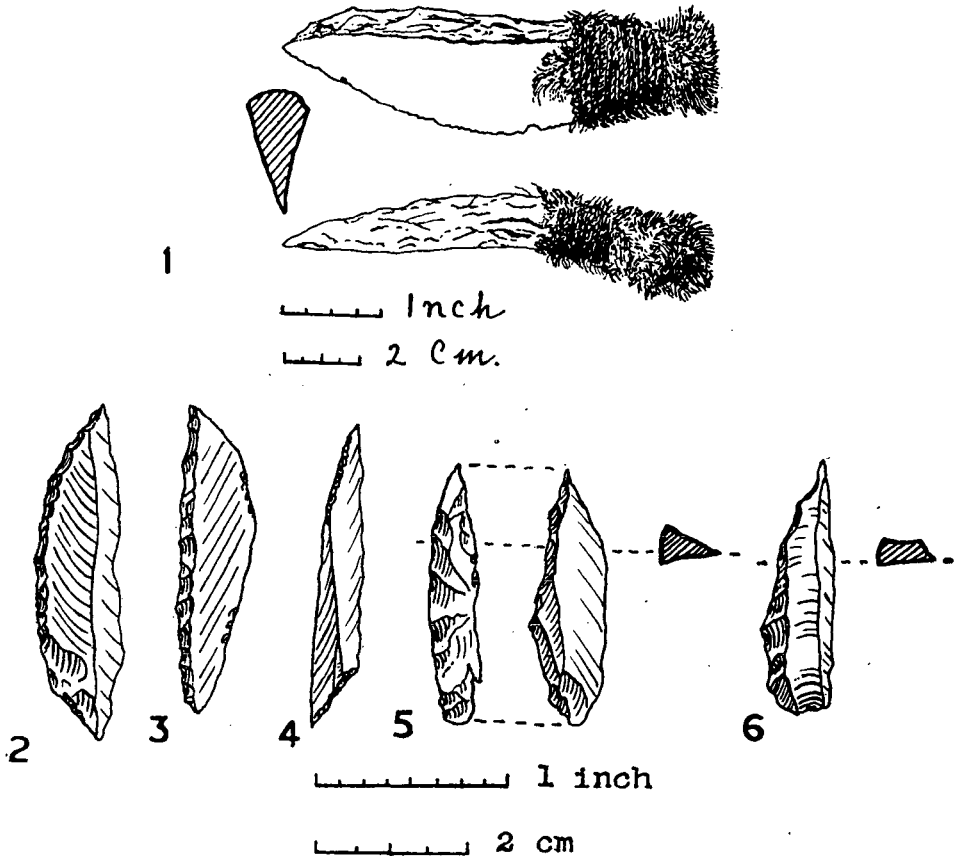


Fig. 2. 1. Australian steep-backed knife of hornstone handled with kangaroo-skin (after Evans). 2 and 3. Sordes, Mont-de-Marsan (Landes); Azilian *canifs* (after Breuil and Dubalen). 4. Sordes, Mont-de-Marsan (Landes); Azilian flake implement (after Breuil and Dubalen). 5 and 6. Australian surgical knives of jasper.

in the case of No. 10): the section would hardly allow of that true flight possible to arrow-heads of the different well-known types. Some of these occur in Orkney, but the variety is not large, arrow-heads there being chiefly the leaf-shaped sort.

A characteristic common to Nos. 1, 2, 3, 4, 5, 6, and 8 is the slight attenuation of the implements near the butt where each has been dressed



by removal of small flakes. This feature suggests not only the use of the implements as knives, but how they were hafted, doubtless by being firmly inserted in a hollow holder such as a bone or prepared piece of wood. Handled so, the tool, although small, could yet be easily manipulated while the broad rough back would permit the operator to exert finger pressure. Another method providing a grip for small implements was that employed by Australian aborigines, which method had the advantage of being adaptable also to large tools. This very simple and perfectly effectual form of handle consisted of binding a piece of the skin of an animal round the butt of the tool, leaving the hairy side exposed. In his classic work the late Sir John Evans has figured a small knife, triangular in section, of hornstone, from Australia, the butt so provided with a skin grip.<sup>1</sup> It is thought that illustration of such an example after the original woodcut may be useful to show remarkable similarity of form at the same time as showing style of handle (fig. 2, No. 1).

Reason to assign these implements to a pre-Neolithic culture seemed to be wanting despite recognition of shapes found in certain Mesolithic industries. Knowing that Professor Abbé H. Breuil, Hon. F.S.A.Scot., had found somewhat similar artifacts in the French and Spanish Pyrenean district, an opportunity was taken to show him these Orkney specimens. Monsieur Breuil agreed with me that they resembled not so much Tardenoisian as Azilian types. For comparison he drew my attention to pieces discovered by him and Monsieur P. Dubalen in the Dufaure rock-shelter at Sordes near Mont-de-Marsan (Landes).<sup>2</sup> Three of the French examples, now in the museum at Mont-de-Marsan, will be considered in respect of shape and technical similarities.

In fig. 2, Nos. 2 and 3, are reproduced illustrations of *canifs* with another implement, No. 4, from what these French archaeologists deemed a Mas d'Azil layer from artifacts of stone and stag-antler yielded by their excavations.

The straight cutting edge of No. 2, fig. 2, and its curved dressed back are to be compared with the Orkney instruments, Nos. 1, 4, and 8 of fig. 1. The French example, No. 3, fig. 2, with curved cutting edge and straight trimmed back compares with the tools from Orkney in fig. 1, Nos. 2, 3, and 5, which present precisely similar features. Remark-

<sup>1</sup> *Ancient Stone Implements of Great Britain* (1872 Edition), fig. 198 and p. 264. A large knife of greenstone, from the Murray River, Australia, to which still adheres a piece of kangaroo-skin, is preserved in the National Museum (*Catalogue of National Museum of Antiquities of Scotland*, No. BU-5, p. 107).

<sup>2</sup> H. Breuil and P. Dubalen, "Fouilles d'un abri à Sordes en 1900," in *Revue de l'Ecole d'Anthropologie de Paris*, 1901, pp. 251-68.

ably close is the parallel in the case of No. 2, which is pointed at each end.

No. 4, fig. 2, another type, with peculiarities, calls for comparison with Nos. 6 and 7, fig. 1, on account of long flaking. Mention has been made of the trimmed butt end of No. 8, fig. 1, a feature to be noted in considering further the characteristics of the Azilian artifact, No. 4, fig. 2. This implement, although dressed delicately on the facet of the oblique fracture, was first prepared in the same manner by truncation of one end of the flake. Such has been the case, too, with No. 7, fig. 1.

Over forty years ago Monsieur de Pierpont, referring to small pointed stone knives *à dos abattu* from Belgian Tardenoisian sites found in association with colouring materials, suggested they had served as tattooing instruments.<sup>1</sup> The late Mr John Smith held like views in regard to some of the diminutive points he had collected on the Shewalton Sands, Ayrshire.<sup>2</sup> While recognising that such a matter as the question of tattooing in prehistoric times must remain without answer until further evidence forthcomes, it is interesting to note that lumps of red pigment in the form of crushed hæmatite have been found by Mr Robert Rendall not far from Kirkwall where he had picked up numbers of stone implements.<sup>3</sup> Records come of the occurrence of ground hæmatite with abundant diminutive pointed implements from farther afield, this colouring material having been got in the caves and rock-shelters of the Vindhya Hills, in Baghelkand and Bundelkand.<sup>4</sup>

Again, simple surgical cuts, which could be made by means of small implements, are not beyond the possibilities they offer, as I suggested when discussing Tardenoisian points and small knives found near the mouth of the River Irvine.<sup>5</sup> These implements were compared then with some Australian stone instruments of quite modern production used by the aborigines in initiation ceremonies, which included scarification of the skin of adolescents and also the performing of certain extraordinary operations demanding a degree of skill little to be expected from the employment of such instruments by the natives in their wild surroundings.<sup>6</sup> Apart from the foregoing digression and the knowledge to which they have been put, typical examples of some of these Australian knives are figured to show their close resemblance to the implements

<sup>1</sup> "Congrès International d'Anthropologie et d'Archéologie Préhistorique," *Compte Rendu de la XIVe Session, Genève, 1912*, p. 307.

<sup>2</sup> Cit. supra, *Prehistoric Man in Ayrshire*, p. 111.

<sup>3</sup> *Proceedings of the Orkney Antiquarian Society*, vol. ix. p. 22.

<sup>4</sup> *Journal of the Victoria Institute*, March 18, 1889, p. 296.

<sup>5</sup> A. D. Lacaille in *Proc. Soc. Ant. Scot.*, vol. lxiv. p. 39.

<sup>6</sup> Lord Avebury, *Prehistoric Times* (1912 Edition), p. 427.

with which these notes deal. Nos. 5 and 6, fig. 2, represent surgical knives of a fine quality of jasper-flint.

It is understood that some small artifacts of geometric forms have recently been recognised in Orkney collections, their shape suggesting a similarity to certain pieces occurring in late Tardenoisian contexts. A wide field of research thus appears open to the inquirer, and it is

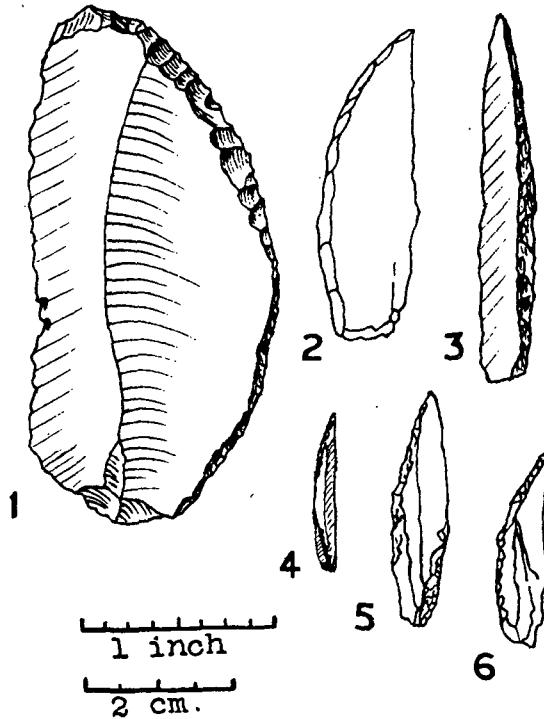


Fig. 3. Palæolithic and Mesolithic Knives or Points. 1. Abri Audi; Aurignacian I. (after Rutot). 2. Châtelperron; Aurignacian II. (after Bailleau). 3. La Gravette; Aurignacian V. (after Parat). 4. Les Eyzies; final Magdalenian (drawing by Lucien Dursin). 5. Sværdeborg; Maglemosean (after Johansen). 6. Dryburgh Mains; Tardenoisian (after Callander).

one which ought not to be ignored when more facts connected with Orcadian stone industries have accumulated. As yet little is known about the stone implements of the two large island groups of the British northern waters. Certain types present problems, and it is relevant to state that in a number of quartz tools found in Shetland one may observe a likeness to some stone implements of Azilian manufacture.<sup>1</sup> At

<sup>1</sup> Notably some greatly weathered scrapers described by me in *Proc. Soc. Ant. Scot.*, vol. lxxvii. pp. 327-35.

present it is only possible to advance a few suggestions relative to the small implements discussed, as that ample knowledge necessary respecting local conditions can only be acquired by lengthy stay in those localities yielding the artifacts.

Mention having already been made that small stone knives with steep backs occur continuously in Upper Palæolithic cultures, it is thought that the Scottish student may find it useful to compare illustrations of specimens of some types with figures representing the Orcadian implements noted. Mesolithic examples are shown in addition, one being a microlithic knife of Maglemosean make from Denmark, and the other a Tardenoisian implement from Tweedside (fig. 3).