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An unusual lithic assemblage from Lunanhead, Angus

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ABSTRACT

In July 1993 the Scottish Urban Archaeological Trust Ltd (SUAT) carried out an extensive field evaluation funded by Historic Scotland in advance of a housing development near Lunanhead, Angus. From the base of a natural depression 28 flint artefacts were recovered. One further piece was retrieved from the topsoil. Although small, this assemblage represents an important find combining evidence of a rare commodity in Scotland: good-quality flint nodules, with technological evidence of a broad blade industry, of which Scotland has few examples to date.

BACKGROUND

The evaluation was carried out in advance of a housing development in an open field adjacent to the village of Lunanhead, approximately 3.2 km north-east of Forfar, in Angus (NGR: NO 477 523). The total area affected by the proposal extended to approximately one hectare and was situated on the plateau of a low hill, the surface of which undulated slightly before falling away on the southern side to marshland. The marshland represents all that is left of Restenneth Loch which was drained in modern times. The Loch was one of a number of post-glacial lochs in the area. These included Forfar Loch and Rescobie Loch. The latter lies close to the source of the Lunan Water which flows to the coast at Lunan Bay approximately 19.3 km to the east.

Two sites of known prehistoric activity lie in close proximity to the evaluation site (illus 1). The first, located approximately 150 m to the east, is a clearly defined Neolithic Class 1 henge monument (NMRS NO 45 SE 38). The second, located on the opposite side of the B9134 road, to the north, is a Bronze Age burial ground (NMRS NO 45 SE 12). It was the close proximity of the burial ground that prompted the site evaluation. The project was conducted for Historic Scotland by the Scottish Urban Archaeological Trust Ltd (SUAT).

THE EVALUATION

A total of 19 trenches was opened by machine, reducing the soil profile in spits to the surface of the undisturbed fluvio-glacial sand and gravels. It was quickly established that the burial ground did not extend into the area of the proposed development site.

The soil classification for the site consists of humus-iron podzols which comprise a free-draining agricultural topsoil of dark greyish-brown sandy loam (Macaulay Institute for Soil Research 1979). The topsoil was found to have an average depth across the site of 0.38 m, directly overlying the undisturbed sand and gravels. This depth roughly corresponds to the depth of modern ploughing

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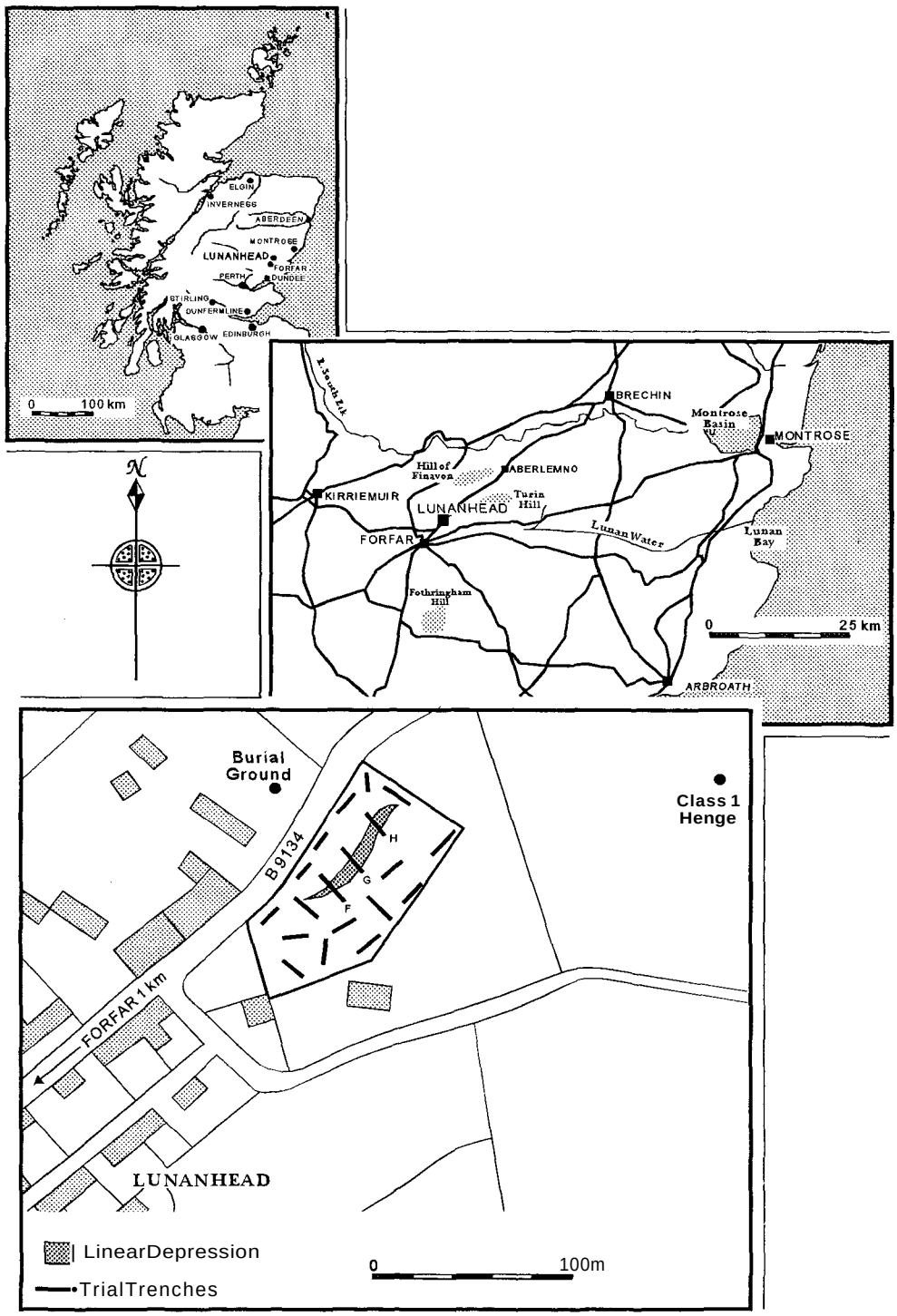
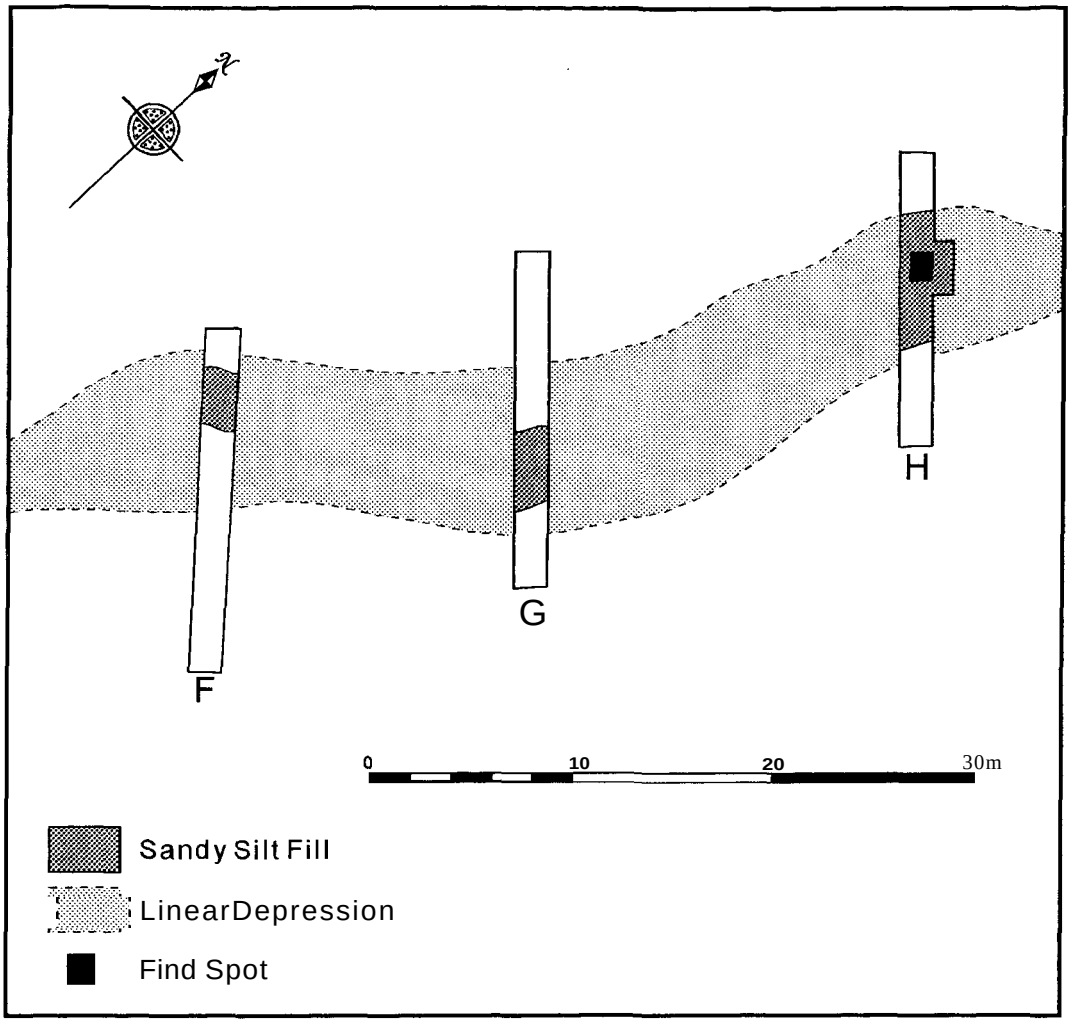


ILLUS 1 Myreside, Lunanhead, site location map *(Based on the Ordnance Survey map © Crown Copyright)*



ILLUS 2 Excavation at Myreside, Lunanhead, Trenches F, G & H

and indicates that any archaeological remains which may have existed would have already been destroyed by tillage and by consequent soil erosion from the hill-slopes.

A linear depression aproximately 60 m long and 10 m wide (illus 1) could be seen on surface evidence to cross part of the site. Three trenches, F, G and H (illus 2), were cut across this feature as it was believed that archaeological features might have escaped destruction by the plough. A single deposit of reddish-brown sandy silt loam was found filling part of the base of the depression. This fill had a maximum width of 7 m, extending over an area of approximately 110 sq m, was up to 0.3 m in depth, and is most likely a post-glacial water-sorted fill. The fill and the overlying topsoil merged at the interface and it was clear that bioturbation had resulted in contamination of the fill from above and that the deposit had been subject to truncation as a result of plough action.

Within the extent of the evaluation trenches the fill was carefully excavated by hand and sieved

TABLE 1
Artefact size range (mm)

Find No.	Length	Width	Thickness
1	50	26	7
2	45	29	7
3	65	25	7
4	49	29	12
5	61	17	8
6	43	24	11
7	47	24	13
8	31	24	4
9	48	32	10
10	35	20	6
11	52	19	6
1 2	39	15	4
13	38	20	2
14	45	15	5
15	42	19	6
16	57	27	6
17	32	19	8
18	31	29	11
19	32	36	10
20	66	26	9
21	29	11	4
22	27	16	5
23	30	7	3
24	68	24	11
25	12	10	1
26	32	16	4
27	57	22	9
28	65	20	8
29	39	17	9

through a 5 mm mesh sieve. It was from an area of only 1.5 sq m, in trench H, that the assemblage of 28 lithic artefacts was recovered (illus 2). The pieces were located randomly throughout the fill. It is uncertain how the artefacts were deposited, but it is clear that bioturbation played a part in their final positions within the fill. One further artefact, Flint no 29, was recovered from the topsoil towards the south-western corner of the development site. No artefacts were found in the remainder of the sandy silt deposit excavated in trenches F and G.

THE MATERIAL

The assemblage comprises 28 flint artefacts (Table 1) (illus 3-10). Many of the pieces are large and of good-quality flint. Only nine (32%) retain areas of cortex but, where it does survive, it is roughly abraded rather than rolled smooth. A pebble source of flint was clearly exploited, but the nodules must have been eroded when relatively fresh from their parent chalk. There are few flaws in the flint and most of it is homogeneous in colour (a restricted range of greys) and texture. Apart from the large size of many of the pieces (some extending to 68 mm in length), there are two core trimming flakes which have been struck from large blade cores (one is 57 mm, the other 65 mm, in length). The knappers at Lunanhead were using good-quality, large flint nodules, but nodules such as these are not common in Scotland. The nearest flint source of any quantity lies to the north of Aberdeen in the Buchan area (Gemmel & Kesel 1979; Wickham-Jones & Collins 1978), but the flint from

TABLE 2
Flakes and blades struck from the same nodule, as suggested by colour; the numbers refer to the small find number by which individual pieces are registered

Nodule:	A	B	C	D
	1	8	4	13
	15	9	5	16
	22	10	6	
	24	11	21	
	28	12	27	
	14	20		

Buchan does not resemble that from which the Lunanhead artefacts are made (Alan Saville, pers comm).

If Buchan flint was not used, where did the raw material come from? Flint pebbles occur in some till deposits along the east coast, and they may also be found in river and beach gravels, though nodules from sources such as these are rarely large and are usually heavily rolled and flawed. Undersea chalk with flints has been recorded in the North Sea (Gemmel & Kesel 1979), and it may be that the knappers at Lunanhead had access to a beach on which freshly eroding flint was washing up. If this was so, however, it seems strange that this flint was not, apparently, available (or used) at other times throughout prehistory. Alternatively, it is possible that general gravel sources might have yielded a few larger, better-quality pieces; if not, a source further away, perhaps on the English coast, must be considered. Whatever the source, the relative lack of cortex on the pieces indicates that preliminary working did not take place on the site.

As a result of the quality and restricted range of grey colour of the flint used at Lunanhead it is possible to match various pieces with the likelihood that they belong to the same nodule. Thus, four specific nodules can be suggested (Table 2). Sadly, despite several efforts, it was not possible to re-fit any of the artefacts.

TECHNOLOGY

Although the assemblage is small, it is so unusual that it seemed worth while to look at the surviving evidence for knapping technology. Fourteen of the pieces are broken, but half of these retain their proximal ends and in all a total of 20 pieces provide bulbar information.

In general, the detachment characteristics indicate that knapping was carried out using soft-hammer percussion. Bulbs are mainly diffuse, platforms are small and often elongated, and many have clear signs of trimming at the edge of the platform. In profile most of the pieces are gently concave. There are no cores, but two core trimming flakes (nos 27 & 28) are present. These are both of blade-like proportions and flattish profile. One has been removed from a flat platform, the other platform was more irregular. Both have signs of light trimming along the old platform edge, and the remnant removal scars suggest that they were taken from blade cores.

Further information about the cores may be gleaned from two slightly overshot blades with remnants of opposed basal platforms at the distal end. The removal scars do not suggest that these basal platforms were used for blade production: they may have been escape platforms, used to correct mistakes and repair the shape of the core. This is a common technique used by many knappers today when they wish to make large blades. The blades and flakes themselves indicate the use of large regular cores with flat, trimmed platforms. Most of the cores were apparently flaked from one end

only, though a few of the flakes have scars coming from the distal end that indicate the use of opposed platform cores.

Although the assemblage does comprise both flakes and blades, the number of blades present, together with the detachment characteristics, suggest that this is essentially a blade technology. The knappers were using large, carefully trimmed and shaped cores to make long, fine blades. As a by-product of this process they also produced a number of regular flakes.

Debitage is almost completely absent in the assemblage and all of the pieces would have been quite suitable for use without further alteration. Nevertheless, four pieces have been further altered by retouching. This involved the removal of small flakes along a side or end, in order to alter the edge angle and sometimes shape the piece.

Only one of the retouched pieces survives both complete and with alteration such that it may be fitted into one of the conventional artefact types generally ascribed today. This is no 27, an end scraper made on one of the core trimming flakes. It has been retouched across its broader, distal, end to produce a blunt, curved scraper-edge.

Of the other retouched pieces, no 12 is a broken blade segment that has a remnant length of abrupt retouch at one end. The breakage is such that it is not possible to suggest the original artefact type, but the spall-like nature of the piece suggests that it may be a mis-shot burin spall. Number 18 is also broken and has some irregular retouch at one end. The chunky nature of the flake and the abrupt nature of the retouch suggest that this might be an unfinished scraper. The fourth retouched piece is no 24, one of the overshot flakes, which has been trimmed with fine, regular retouch along the basal platform edge. Finally, no 7 should be noted; this is a chunky flake with a flat faceted side. There is some macroscopic edge damage at the proximal end of the facet which indicates that it may be a coarse burin.

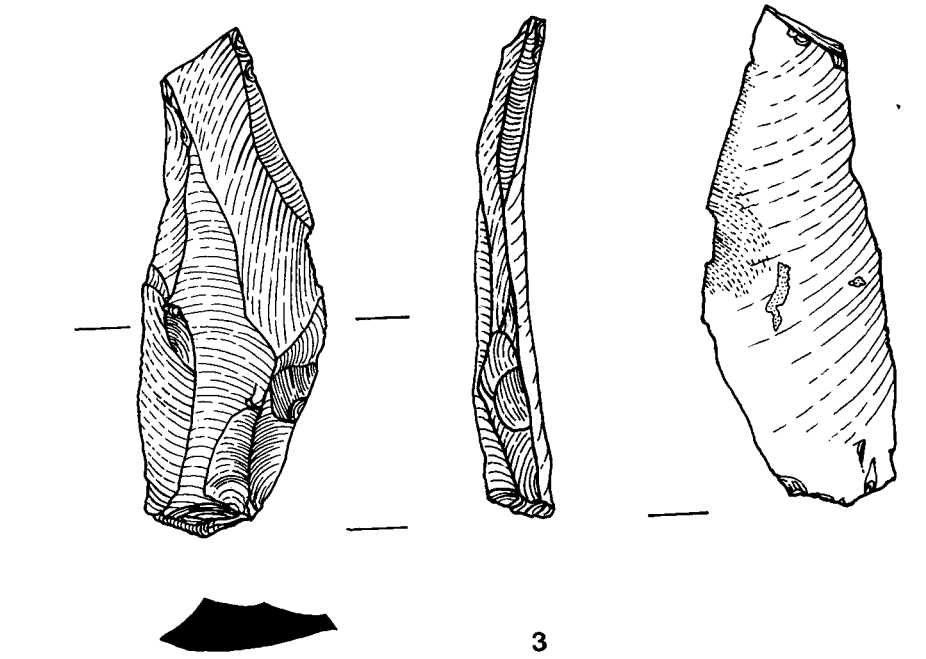
COMPOSITION OF THE ASSEMBLAGE

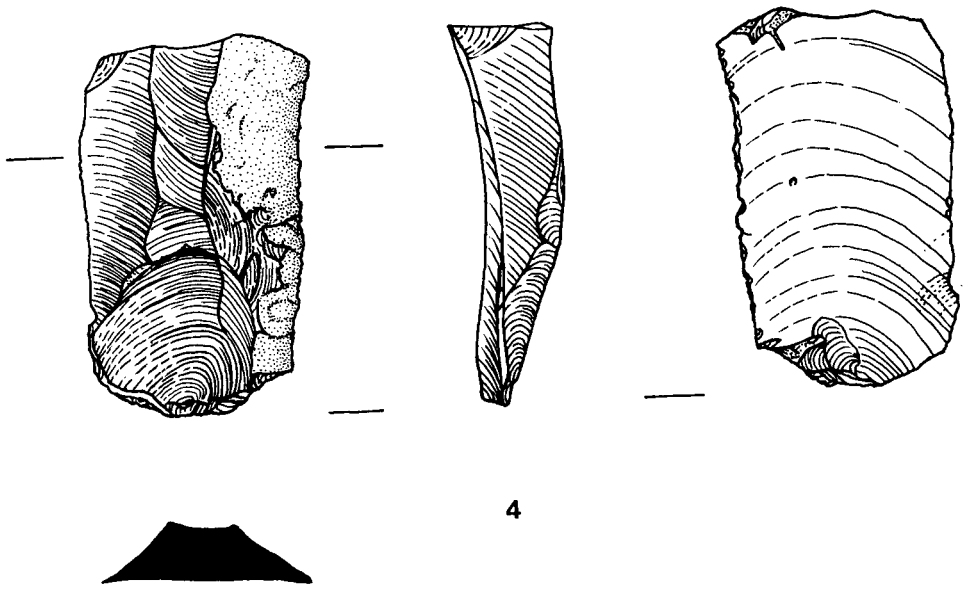
The assemblage is composed almost entirely of regular flakes and blades. Only two pieces have been classified as debitage, and this is on the basis of their chunky, irregular nature rather than their size. Both are large, and may well have served as useful tools. The lack of debitage is very unusual in Scottish lithic assemblages, for flint knapping inevitably produces a lot of tiny debris, some of which is nearly always recovered on any site.

Instead of debitage, the assemblage is divided almost half and half into flakes (13) and blades (15) (Table 3). Although the flakes are large and sometimes chunky, they are not particularly unusual. Occasional flakes such as these occur on most lithic-using sites in Scotland. It is the blades that attract attention. Blades in themselves are not unusual in Scotland, but they are generally much smaller and narrower. They are most common on Mesolithic sites where they usually occur in association with microliths. The knappers at Lunanhead were clearly aiming to make blades, but they were not following the expected norm from what is known of the Scottish Mesolithic. It seems likely, therefore, that the assemblage is not Mesolithic, a conclusion reinforced by the complete absence of microliths from the site.

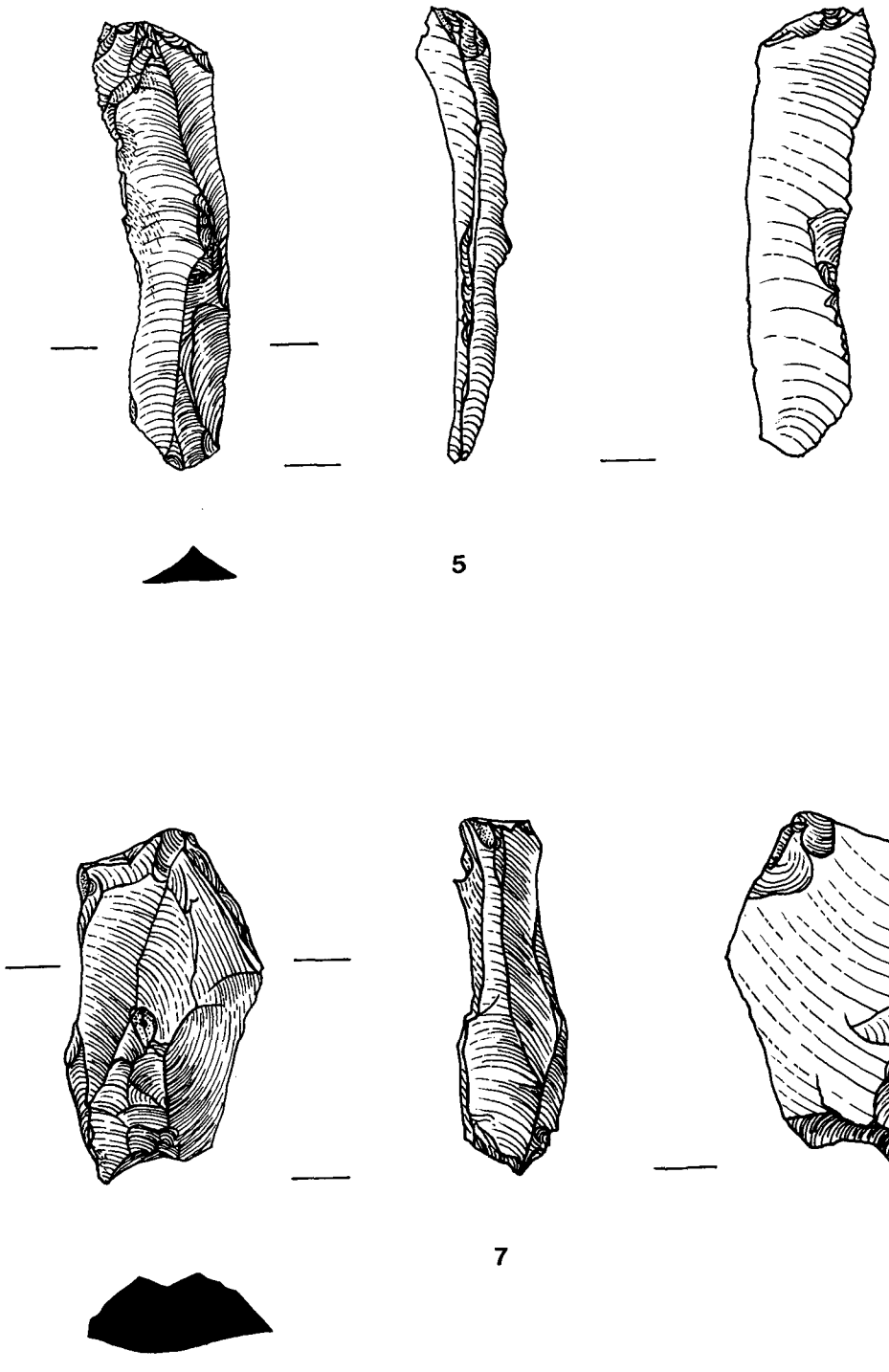
TABLE 3
Composition of the assemblage

Type	No
Blades	12
Regular Flakes	10
Debitage Flakes	2
Retouched Pieces	4 (3 blades: 1 flake)

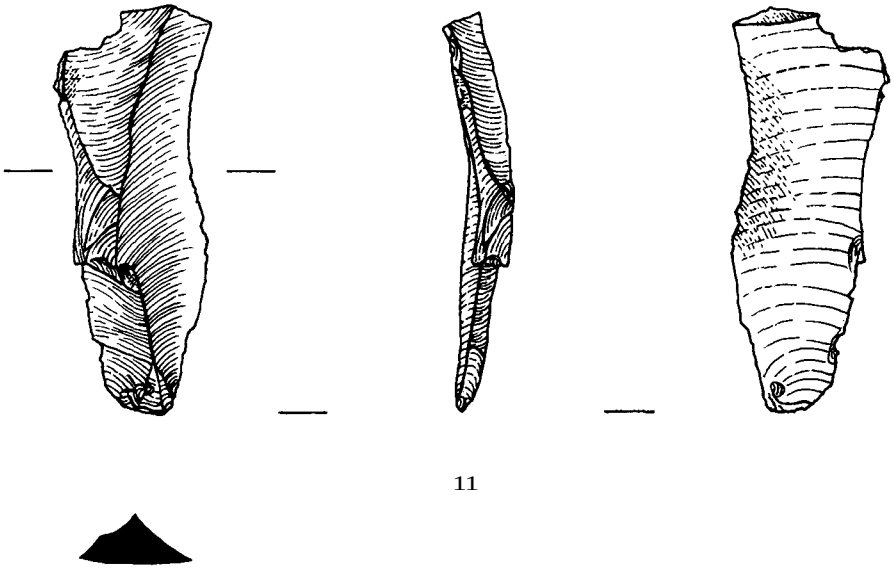


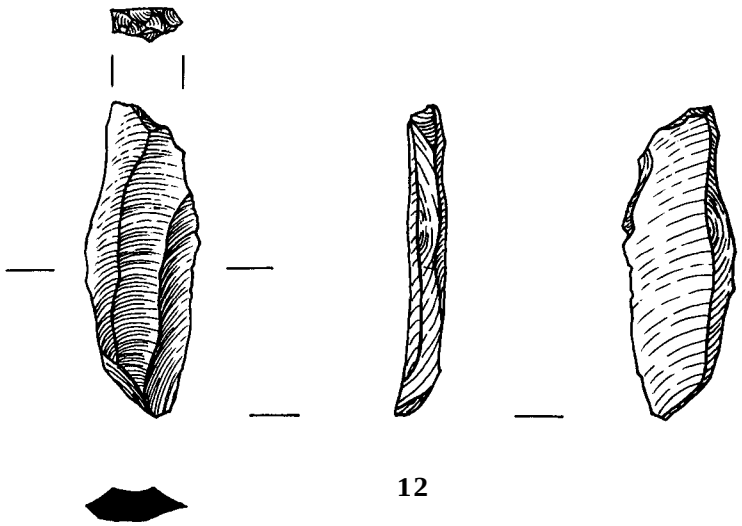


ILLUS 3 Excavation at Myreside, Lunanhead, Lithics Scale 1:1

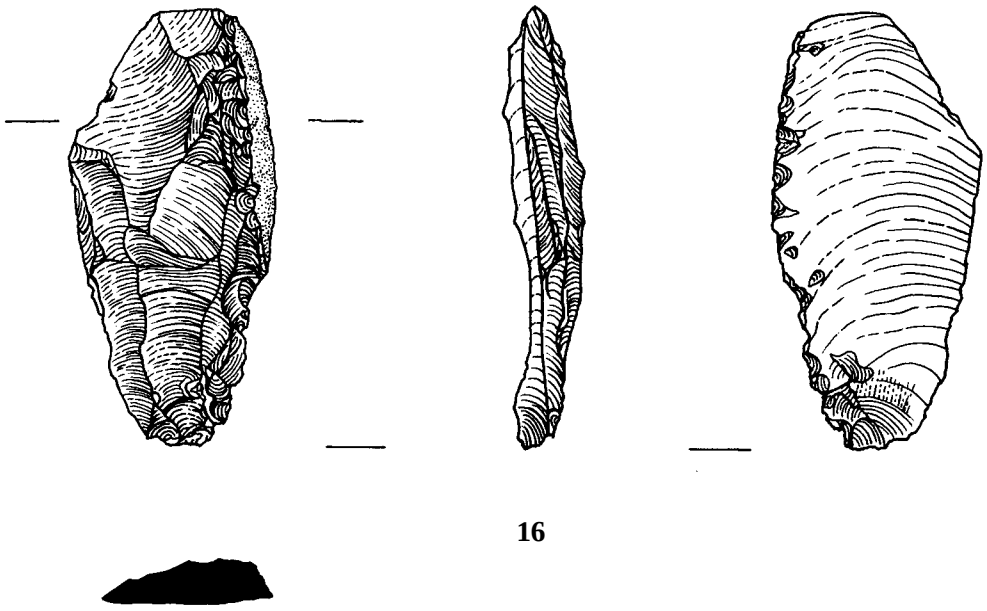


ILLUS 4 Excavation at Myreside, Lunanhead, Lithics Scale 1:1

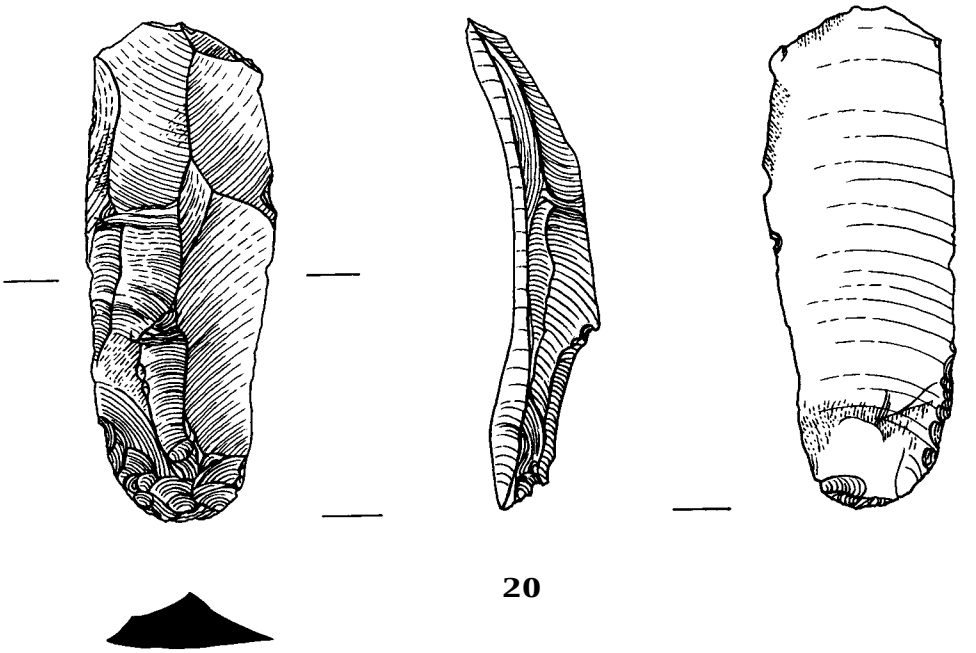


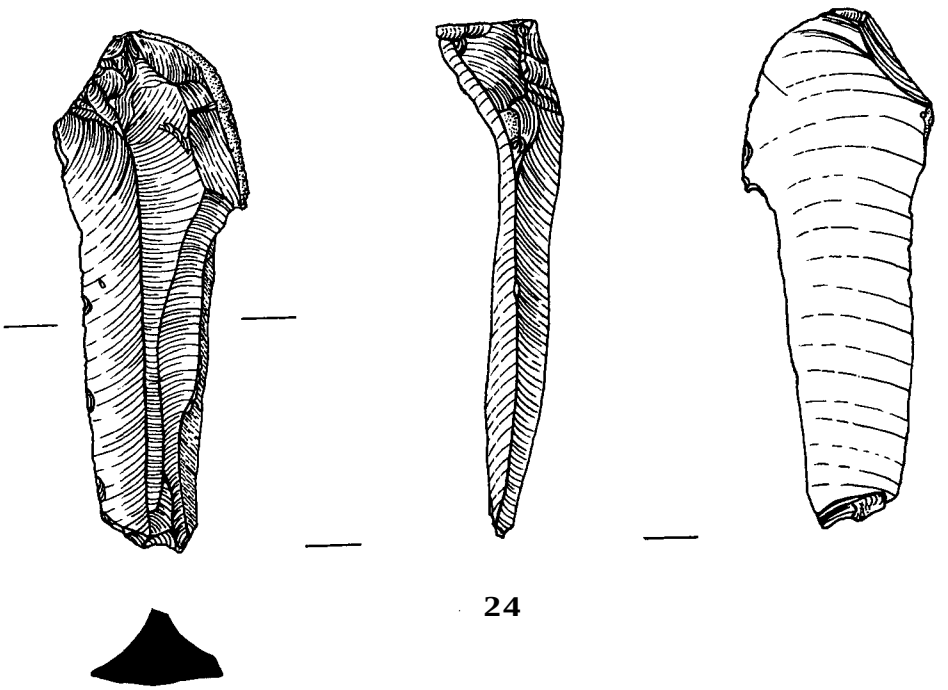


ILLUS 5 Excavation at Myreside, Lunanhead, Lithics Scale 1:1

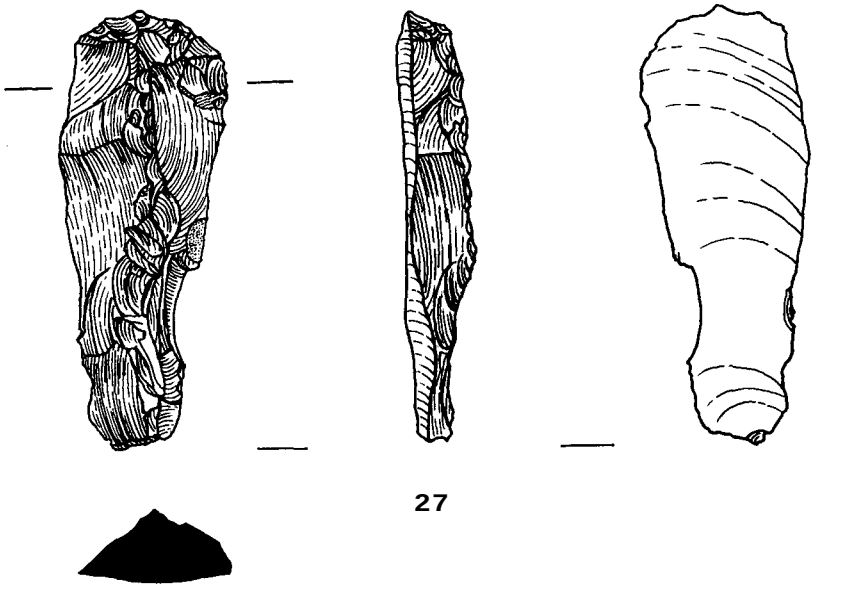


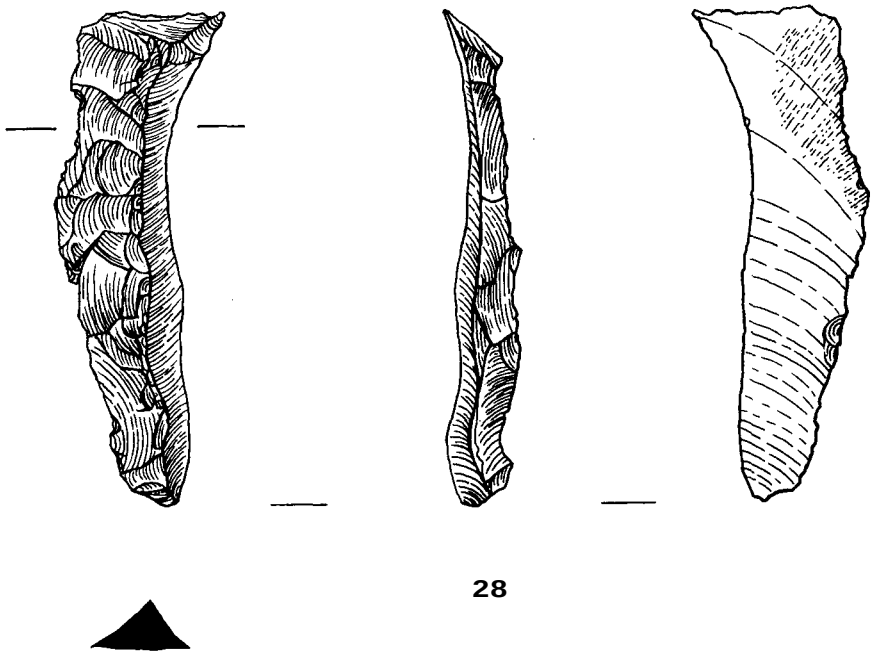
ILLUS 6 Excavation at Myreside, Lunanhead, Lithics Scale 1:1



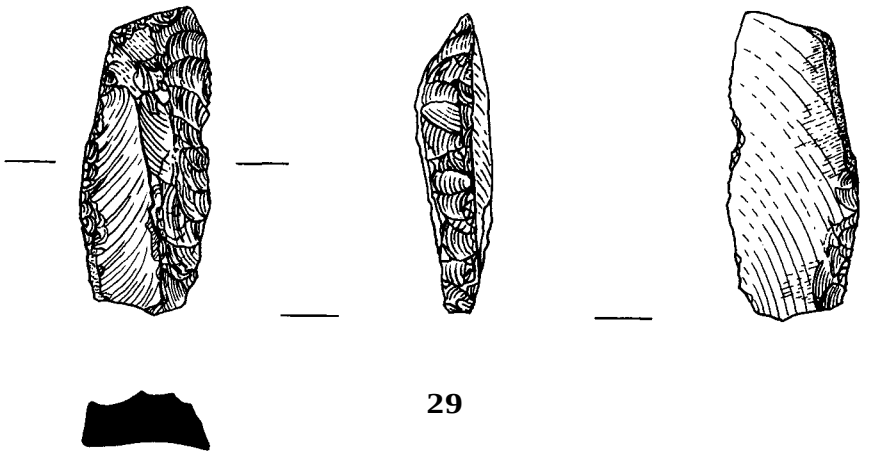


ILLUS 7 Excavation at Myreside, Lunanhead, Lithics Scale 1:1





ILLUS 8 Excavation at Myreside, Lunanhead, Lithics Scale 1:1



ILLUS 9 Excavation at Myreside, Lunanhead, Lithics Scale 1:1

FLINT NO 29

In addition to the 28 pieces described above, the excavations also produced one other flint artefact (illus 9) from a different area of the same field. It was recovered from the ploughsoil. This piece, no 29, is a retouched flake of the type that used to be classified as a 'slug knife'. It is made of grey flint, similar to the others, though it is not particularly large, and is quite abraded. It has been retouched on the right side, which is also slightly undercut with edge damage, and the distal end is both damaged with undercutting and (subsequent) rubbing. Whatever its original function, it seems likely that this piece ended its life in use as a strike-a-light. The abraded nature of no 29 suggests that it was not associated with the other lithic artefacts.

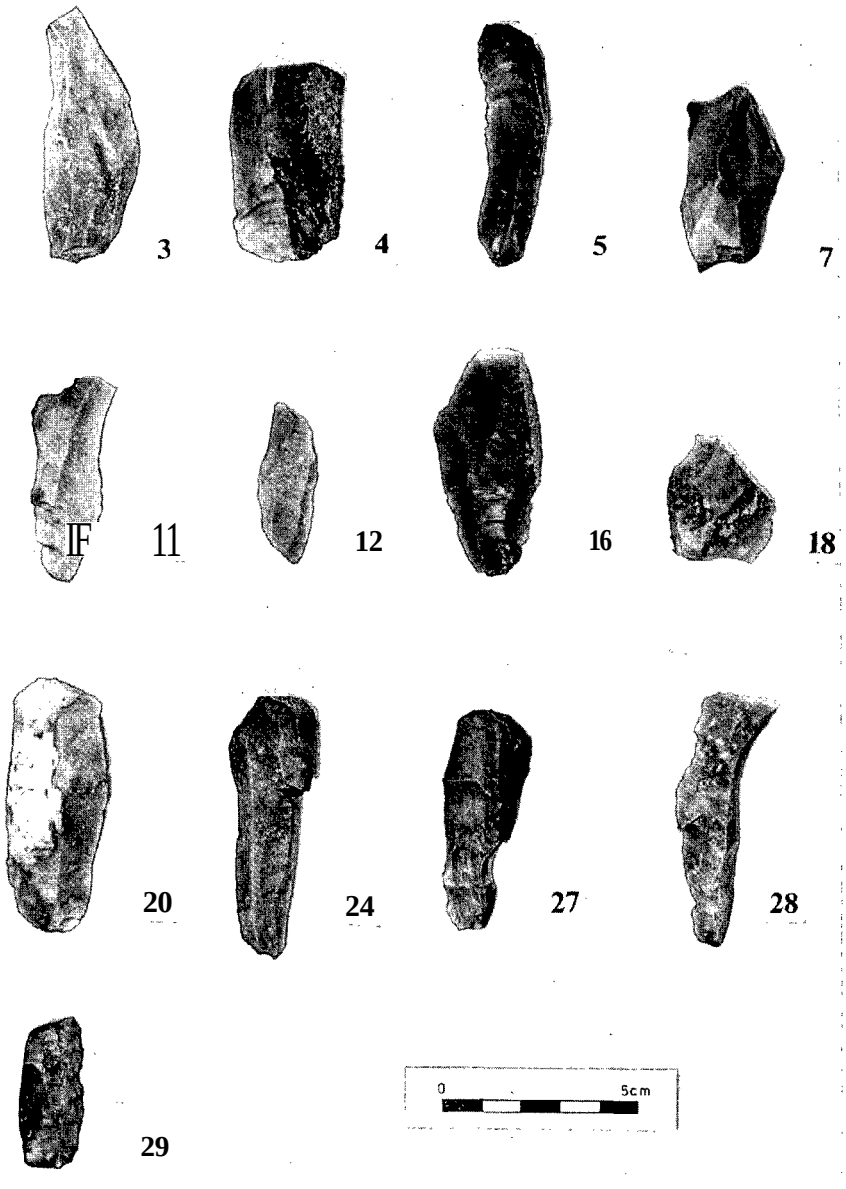
FUNCTION

Functional information relates not only to individual pieces, but also to the assemblage as a whole. With this in mind, the overall composition of the assemblage suggests that it does not comprise debris from the knapping process, so much as a number of tools more or less ready for use. A detailed microscopic analysis for use-wear traces was not carried out, but pieces were examined with a hand lens (x10). All of the pieces are very fresh, and there is little sign of any macroscopic damage along their edges. If they were used, it was probably not for long, and not for heavy tasks that would damage them.

CULTURE AND CHRONOLOGY

In the absence of other artefacts to give clues as to the period or cultural associations of the material from Lunanhead the lithics have to be considered alone, always a tricky task. However, in the immediate vicinity of the site lie both a Bronze Age cist cemetery and a henge monument, so possible association with these monuments will be considered first.

Although cists do frequently contain individual lithic artefacts they are rarely associated with larger assemblages, and none of the pieces from Lunanhead is of a particularly 'Bronze Age' type.



ILLUS 10 Excavation at Myreside, Lunanhead, illustrated artefact assemblage

In this context, the isolated artefact, no 29, is more interesting, as it is of a type more readily associated with later sites. A Bronze Age date for the larger assemblage does not seem likely.

In recent years a number of henge sites have been examined and published, but these do not yield any close parallels for the material from Lunanhead. Isolated large blades are not unknown on Scottish sites (eg North Mains: Barclay 1983, 220 fig 57, no 57; Balfarg: Barclay & Russell-White 1993, 156–7, S8 & S24), but on no site are they a major component of the flint assemblage. All in all it is unlikely that the Lunanhead lithics have anything to do with the nearby henge.

Failing these two associations, are there any other suggestions as to their identity? As noted above, blade assemblages are known from the Scottish Mesolithic (Morrison 1980), but are generally associated with microliths (Coles 1971). At Lunanhead there is a complete absence of microliths of any sort. Given the small scale of the assemblage, a Mesolithic date cannot be ruled out, but seems unlikely.

Finally, there is one period of Scottish prehistory from which little is known of the lithics. This is the Early Neolithic, for which few sites of any type have been excavated. The main relevant site is Balbridie, Kincardineshire (NGR: NO 733 959; NMRS NO 79 NW 16), where excavations have revealed a timber hall dated to the Early Neolithic period. The lithic assemblage here comprised 131 pieces of flint, and has both similarities and dissimilarities with Lunanhead. At Balbridie the technology used for lithic reduction was similar to that of Lunanhead (medium-soft hammers on prepared cores), but the material was not of good quality and the pieces are generally much smaller. Only 6% of the Balbridie assemblage comprises blades, and there is no evidence for a specific blade technology here (Sabine, pers comm). Looking further afield the material from Lunanhead would not be out of place on some of the Irish Early Neolithic sites (eg Lyles Hill: Evans 1953). We may, therefore, consider the possibility that the excavations at Lunanhead relate to Early Neolithic activity.

DISCUSSION

The lithic assemblage from Lunanhead is unusual on several counts. It is composed of high-quality flint from large nodules that may not have been local. There is no knapping debris, but it is clear that the knappers were aiming to make large blades, at which they were very successful. As a by-product of this they also produced a number of chunky, regular flakes that would have been quite suitable for use. Few of the pieces are retouched, and only one - an end scraper - is clearly classifiable to type. The pieces are all very fresh, and there is little indication of heavy use. The assemblage was associated with neither cultural nor chronological information, but it suggested that it is of Early Neolithic date, though the possibility of a Mesolithic date cannot be excluded.

The situation and lack of surviving contextual information makes it unlikely that there was ever a considerable site at Lunanhead, but the assemblage does provide a salutary lesson for archaeologists. In the absence of other material remains the lithics have still provided plenty of information, and their unusual form suggests that this is information regarding a period of Scottish prehistory about which little is known.

Much current archaeological work is biased towards upstanding remains or corresponding site remnants (ie cropmarks). While not wishing to detract from their value, it should also be recognized that much of Scotland's past is not represented by upstanding material, nor by upstanding monuments and cropmarks. Early sites are often unknown in advance of the work that may reveal them, and they may well be represented by lithic assemblages alone. It may be hard to identify them given the current pace and mechanization of development. Unless we can identify them, however, and take steps to recognize their worth, we shall be losing significant elements of Scottish prehistory.

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