

Glengarrisdale: confirmation of Jura's third microlithic phase

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ABSTRACT

A second excavation on the west coast of north Jura confirmed a Jura Phase 3 (final Mesolithic) occupation overlying a Phase 2 site, the latter probably late in the period. Carbon dating of a typologically similar Phase 3 site on the east coast suggested a late fourth-millennium occupation; carbon dating was not possible at Glengarrisdale. This west coast site did not unfortunately provide a single undisturbed occupation but useful confirmation was obtained of Jura's third microlithic phase, hitherto only known on the east coast.

INTRODUCTION

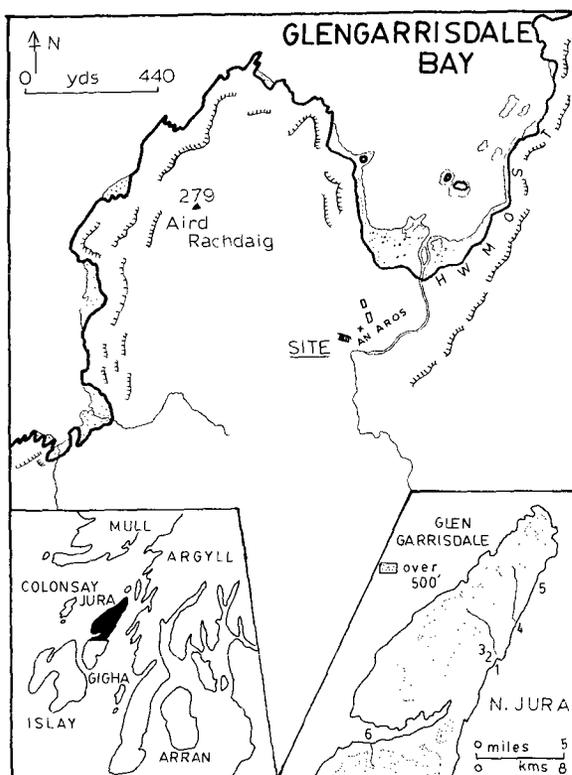
This is the seventh report on the excavation of Jura's Mesolithic sites (Mercer 1968; 1970; 1971; 1972b; 1974; 1980a)¹. It is the second site to be excavated on the island's rugged, uninhabited west coast. The usual tool studies, analyses and distribution diagrams have been carried out, but, to save space, only the significant aspects will now be discussed, with illustrations of the appropriate artefacts.

THE SITE

Since it was felt that the framework for Jura's Mesolithic chronology and tool typology had been worked out (*ibid*), the writer hoped to go on to obtain information on the layout of the camps. The search was thus for a site which had only had single and undisturbed occupation. Seen from a modern viewpoint, the 'back' or west of Jura was the place to look – but it seems in fact to have had considerable occupation. At Glengarrisdale this can be supposed to have again blurred the tool distribution evidence, although some aspects are suggestive enough and will be noted later. Sea action has also been a disturbing element.

The present surface of the site (NGR NR 643 968) stands at 11.2 m OD in the middle of an extensive plateau on the west side of the mouth of Glengarrisdale (illus 1 & 2). Ordnance Datum (mean sea level) was obtained from a bench mark on the abandoned croft at Glengarrisdale. Information from the Hydrographic Department of the Ministry of Defence indicated that this bench mark was 'about 5.6 m above OD(N)', with an accuracy of about 0.3 m (in view of the method by which the height was obtained). Site height was ascertained by measuring up from the bench mark with an Austin Aqua-lev, as for previous Jura excavations.

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ILLUS 1 Location maps: Inner Hebrides, North Jura, Glengarrisdale Bay. 1, Lussa Bay; 2, Lussa River; 3, Lussa Wood; 4, Lealt Bay; 5, North Carn; 6, Glenbatrick

The vast valley of Glengarrisdale has been the most occupied of those on Jura's west coast; it holds the remains of five separate settlements, the last inhabited until a few decades ago. A circular grain-drying kiln, omitted from a past study (Mercer 1972), as then unknown to the writer, was noted at the valley's south-western settlement (NGR NR 646 957).

The site is now some 228 m from the sea (HWMOST). The present beach and turf-coated valley floor stretch to the foot of the steep slope leading up to the plateau. This slope consists of a bedrock bluff, 42 m long, holding two small caves, extended north and south by marine cobbles. This bluff has been the centre of recorded activity in the valley: upon it are the traces of *An Aros* dun, a Maclean stronghold in the Middle Ages; below it is the most recently inhabited of the several crofts in the valley.

The site plateau above is bounded to the east by the described bluff, to the north and west by the angle in the valley walls; southwards it slopes down to the main burn. The northern half of the plateau is covered with raised swampy peat up to 91 cm thick whilst the southern half is contrastingly dry, its surface either marine cobbles or bracken on a thin layer of soil.

Height measurements of the swampy zone, using steel rods as probes, suggest that there was once a shallow lagoon there, ponded behind the bedrock-and-cobble bluff. The excavated area is a level patch of ground, now dry and turfed, on the southern edge of the swamp (illus 3). So it is possible, as at Glenbatrick, 13 miles (21 km) down the coast, that these Mesolithic people



ILLUS 2 Site terrace looking east across Glengarrisdale Bay. Excavation area bottom right-hand corner

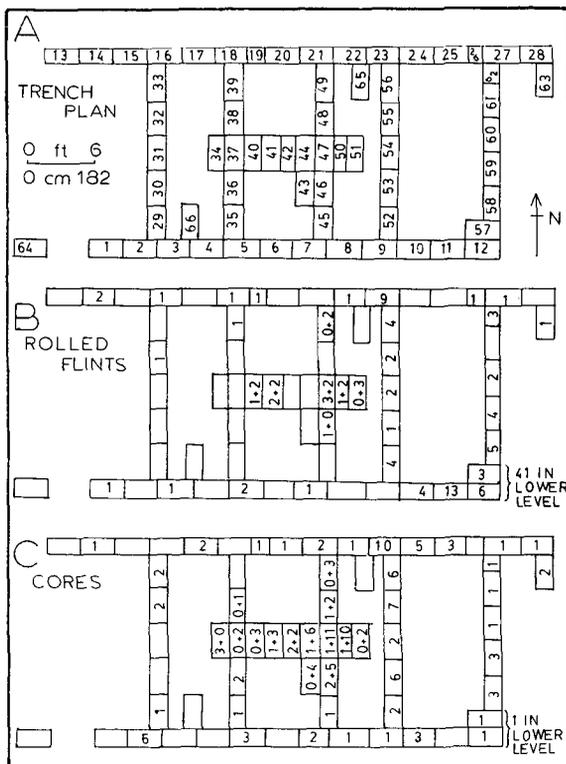


ILLUS 3 Site looking west

chose a lagoon beach as their camp site; a stretch of soft silt would have been exposed in dry weather. The site was also sheltered from the prevailing westerly gales, was close to drinking water and to the main route to the next bay down the coast. Access to the east coast was also easy, the route across remaining even today an obvious choice.

Finally, the site must be seen against the sea-level of its period. During the maximum stand of the highest post-glacial transgression, Glengarrisdale would have been changed into a creek a mile long and, at the mouth, several hundred yards wide. The east coast Jura excavations suggested a day-to-day or calm maximum stand of 12 m OD and a storm range to above 15 m OD. At Glenbatrick, on the far more exposed west coast, open to the Atlantic gales, the spray zone was traced to 18 m OD. The present site, at only 11.2 m OD, would thus have been within the range of the transgression. The excavation suggested there had in fact been three stages of occupation:

- 1 the earliest, its flint artefacts heavily rolled and, probably, widely dispersed (undefinable phase),
- 2 a later occupation, at least in part covered by marine gravels, this part apparently undisturbed (late Phase 2),
- 3 occupation apparently after the withdrawal of the sea from the site level (Phase 3). It is recalled that Lussa River, the only phase 3 site not also occupied by earlier people, stood at only 10 m OD (Mercer 1971).



ILLUS 4 Trench plan (A) and artefact distribution: rolled flints (B), cores (C)

EXCAVATION

TECHNIQUES

The site was first cleared of bracken and the top turf peeled off. Water sieving of the underlying deposits was not this time necessary, careful undermining of the digging face of the trench allowing the flint and quartz artefacts to fall cleanly from their matrix. Dry sieving of the lower level was carried out in the hope of recovering charcoal for C14 assay.

A grid of 63 continuous trenches was dug in the main area of the site², their area totalling 30¾ sq yds (25.6 m²) (illus 4A). Each trench measured 3 ft by 1½ ft (91 by 45 cm), except for three of 1½ ft by 1½ ft (45 by 45 cm). Two single outlying trenches to north and west were dug at respectively 7 ft (2.1 m) and 9 ft (2.7 m) from the main area. The first (unnumbered) yielded no finds; the second (trench 64) one hammerstone. A further eight trenches, spaced out, were dug right around the main area, between 16 ft and 55 ft away (4.8 m and 16.7 m). These trenches, excavated to a depth of 12 in (30 cm), yielded no finds, confirming the rough limit of the occupation. The whole potential artefact-bearing area was not excavated, since it was felt that enough diagnostic material had been recovered from the trenches dug.

The average depth of the trenches was 12–18 in (36–54 cm). In the south-eastern corner of the site, trenches 12 and 57 were dug to 3 ft (91.4 cm) (bottom not reached).

TABLE 1

Layer details	Depth below surface
1 Top turf	
2 Angular water-worn cobbles (in central area, trenches 34, 37, 38, 40–44, 46–51, not completely covered by top turf)	2 in (5 cm)
3 Central trenches only:	
(a) loose pebbly dark brown earth, with extensive lenses of fine marine gravels containing artefacts	2–4 in (5–10 cm)
(b) hard-packed dark brown loamy deposit without lenses of marine gravel; large and small stones, rounded and sharp; some iron-panning; artefacts	6 in (15 cm)
South-eastern corner (trenches 12 and 57): fine marine gravels with rolled flints	4 in (10 cm)
Rest of site: light loamy deposit with large and small stones, rounded and sharp; artefacts.	4 in (10 cm)
(North side trenches wetter and darker than those on south side)	
4 Irregularly throughout site, except south-east corner: iron hardpan	12–16 in (30–40 cm)

STRATIGRAPHY

Comments on the stratigraphical sequence

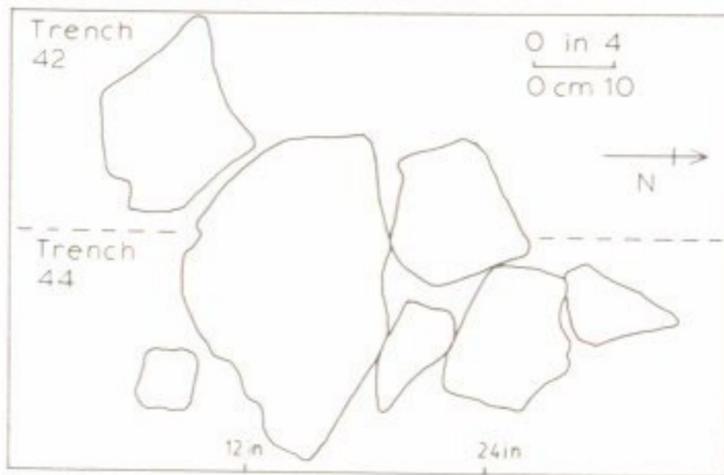
- 1 Only in the central trenches could two levels be confidently distinguished (layers 3a and 3b). As excavation moved from the centre towards the margins of the site, layers 3a and 3b graded into one and the quantity of artefacts diminished. No clear horizontal limit could be recognized for the merging of the two layers.
- 2 The slight difference in soil composition between the north and south side trenches can be attributed to the presence of the swampy zone bordering the site to the north (illus 7).

FEATURES

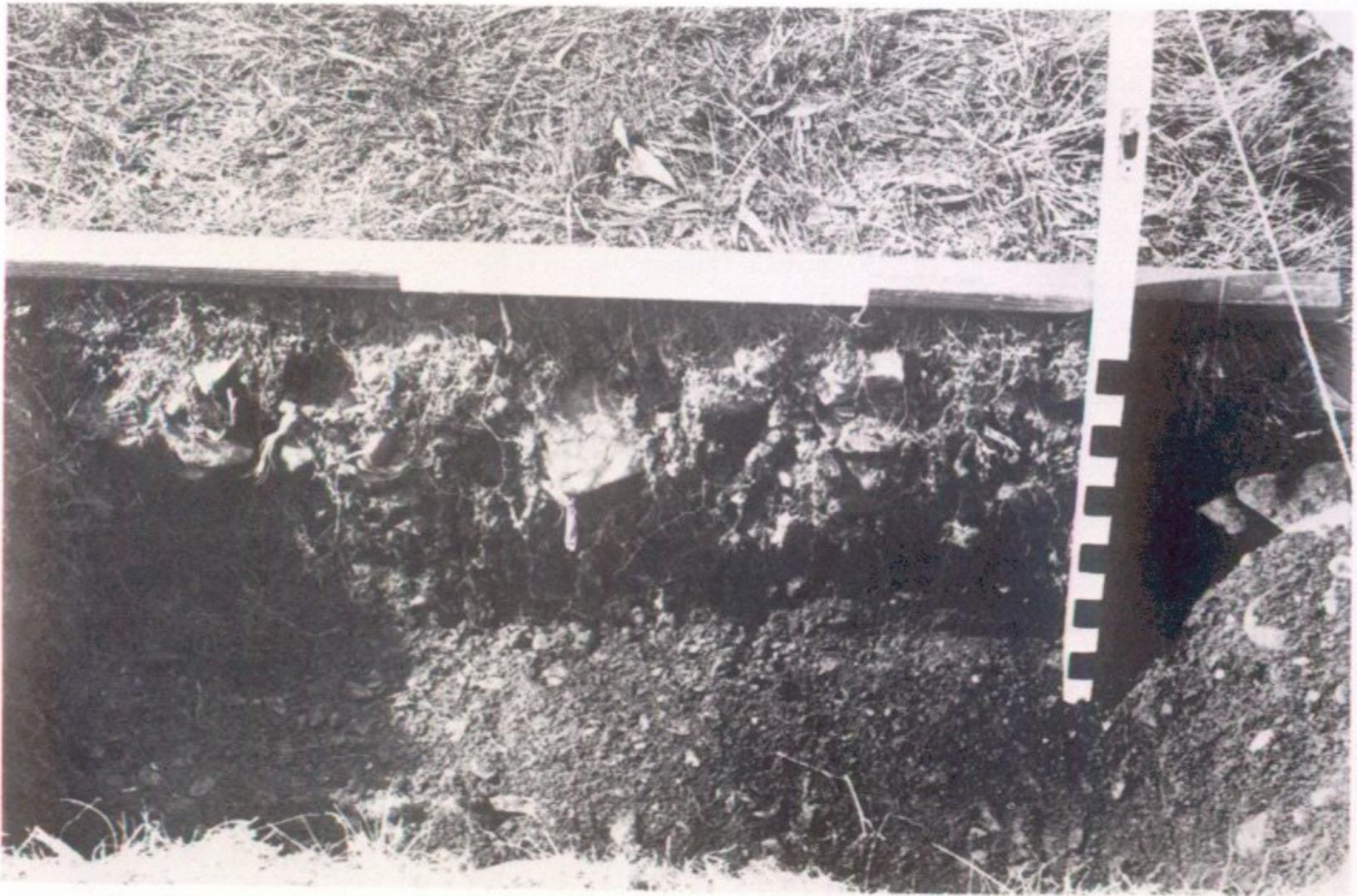
At the centre of the site (judging by the artefact concentration) seven flat beach stones were found, making up a discontinuous patch covering some 2 ft by 2½ ft (61 cm by 76 cm) (trenches 42 and 44 (illus 5 & 6). No charcoal or other significant finds were made above or below the stones. They recalled the carefully-made cobbled patch at Lussa Wood I (Mercer 1980); this too had no associated evidence to explain its function. The stones lay about 6 in (15 cm) below the grass, at the division between layers 3a and 3b.



ILLUS 5 Stone patch (small stone removed on left)



ILLUS 6 Stone patch



ILLUS 7 Trench 65 (north side of site), 12 in (30 cm) from surface: dark brown loam with small stones and flints

ARTEFACTS

The material recovered consisted of 17.5 kg of flint, including nine whole pebbles, 23.8 kg of milky quartz and 32 hammer-anvil stones with a variety of other possible quartzite tools. There were also 104 pieces of quartz crystal, seven pieces of green Arran-type pitchstone and four pieces of 'mudstone' (one green, three brown). Much of the flint was heavily stained to a uniform black, and often highly corroded. Burnt flint occurred but the occasional, scattered, minute piece of charcoal was not adequate for radiocarbon dating. No hearth structure was recognized.

A minimum of 140 rolled flints was recovered, the majority in the south-eastern corner of the site (trenches 10-12, 57-60), at the top of the slope leading down most directly to the sea. Rolled flints were also found scattered throughout the whole site (illus 4B). As at other Jura sites, these flints were mainly minute pieces without signs of post-rolling use, so that they will have been finally deposited by the sea and provide clear evidence that the marine transgression affected the whole site.

Artefact distribution (illus 4, 8, 9)

TABLE 2
Total of artefacts recovered

	Total	Central trenches		Outer trenches
		Layer 3b	Layer 3a	
Cores	156	54	12	90
Microoliths	196	85	18	93
(classified)	(130)	(56)	(13)	(61)
(unclassified)	(66)	(29)	(5)	(32)
Micro-burins	37	17	4	16
Scrapers	126	37	9	80
Eclats écaillés flint	499	83	74	302
(bi-polar chisels) quartz	289	44	54	191
Gravers	20	4	2	14
Perforators	6	2	1	3
Scale-flaked work	2	—	1	1
Hammerstones (quartzite)	32	5	7	20
Flint weight (kg)	17.54	5.48	1.94	10.12
Quartz weight (kg)	23.93	2.61	5.03	16.29
Excavated area	100%	25%		75%

As the microliths form one of the clearest typological pointers, they will be discussed first.

The upper level of the central trenches (layer 3a) and the outer trenches yielded 18 class 2 microliths (highly-evolved rods) (nos 44-48), the lower level (3b) of the central trenches one only, possibly anyway derived. A new aspect was that the lower layer held 13 class 1E microliths (nos 40-43), against none in the upper layer and only four in the outer trenches (no 39): could this form have been the precursor of the later class 2? Class 2 is probably a local development: any elongated form is usually referred to in British nomenclature as a 'rod' but this artefact is a standardized, though extreme, form, being about square in section, steeply trimmed along the full length of each side and at least four times as long as it is wide. Class 1E falls short of each of these criteria: it is flatter, with steep trimming on one side and only nibbling along the other, together with a tapering shape.

It will also be seen that the lower level (layer 3b) by far outnumbers the upper level (3a) and outer trenches in microliths, bearing in mind that it represents only 25% of the excavated area.

Amongst the layer 3b microliths were 12 obliquely and vertically trimmed bladelets (Class 1A, 1B) (nos 27, 28, 32, 34, 35); six trapezoids (Class 6A) (nos 58-60) and, more significantly, four well-made crescents (Class 5A) (nos 53, 54); and the presumed upper end of a Class 6D quadrilateral (no 63). These last two forms are typical of Phase 2.

Turning to the non-microlithic tools, the cores were generally poorly worked, with asymmetrical, pyramidal and two-way forms common; many had two or three platforms, with corresponding platform-edge flakes (no 5). The best cores (nos 2, 4) occurred in layer 3b (central trenches). The cluster of four whole pebbles (no 1), averaged 1½ oz (42 g) each, so that the total flint recovered was the equivalent of 400 such pebbles. No 3 is a heavily rolled small core, probably from the earliest, undefinable occupation of the site.

TABLE 3
Classified microliths

Outer trenches – undivided						Central trenches											
Class	Quantity	Bulbar	Stained	Prob frg	Illustration nos and notes	Layer 3a				Notes		Layer 3b				Notes	
						Q	B	S	Pf	Q	B	S	Pf	Q	B	S	Pf
1Ai	4	2	3	1	Unstained is impoverished; no 26							2	1	2		no 27	
1Aii												2	2	2		no 28	
1Bia	1	0	0		no 29							1	0	1			
1Bib	4	1	1		no 30	1	0	0		no 31		1	0	0		Improvised across fl	
1Biia	1	0	0									2	0	1	3	no 32	
1Biib	5	2	1		3 fresh very poor, no 33	2	2	0		One is obl bl point		4	1?	4		Neat set (all B?) nos 34, 35	
1C	1	0	0		no 36	1	0	1		? Class 1E							
1Di															1	Stained	
1Dii	2	0	0		no 37							1	0	1	2	One Pf stained, one in hard red flint; no 38	
1E	4	0	2	2	Four are fully patinated; no 39							13	0	4		11 are fully patinated. Are these ancestors of '2' – or failed work? (ie 2); no 40–43	
2	14	0	5		22 translucent, rest patinated; nos 44–47	4	0	1	1	no 48		1	0	0	1	Stained frag	
3Ai	1	1	0									2	0	0	2	Stained frags; no 49	
3D												1	0	0		no 50	
4B	1	0	1		no 51												
5A	1	0	1	2	All stained; no 52							4	0	2		Some very good specimens; no 53, 54	
5B												1	1			Good, no 55	
6A–C Frag	0	0	0	5	3 stained	0	0	0	2	Stained		0	0	0	3	Stained	
6A	9	3	8		Very varied; nos 56, 57							6	2	4		Very varied; nos 58–60	
6Biia	1	0	1	0	Dreadful work; no 62	1	0	1		Fine work; no 61							
6D Frag												0	0	0	1	'Top' trimmed straight, cf North Carn; no 153, no 63	
Misc	1	0	0		Made into perforator; no 64	0	0	0	1	Stained. Huge trap/ triangle? no 65		2	0	1		1 perf again? 1 massive crescent?	
TOTAL	50	9	23	11		9	2	3	4			43	7	22	13	no 66	

The scrapers (a few on quartz) were again best in layer 3b (nos 6–11). Most were on cortex-bearing lumps of flint (no 7 a half-pebble). Well-made steep forms occurred, often heavily toothed (nos 7, 9). A thumbnail scraper was neatly worked (no 8). End of blade scrapers were absent, though the occasional end of flake specimen was often quite neat, for instance no 11.

The overall micro-burin proportion to microliths was low, 37 micro-burins for 196 microliths, but the predominant Class 2 microlith was probably not made by their micro-burin technique. A total of 20 were butt and right side notch forms, 2 butt and left side notch, 2 tip and right side notch, 8 tip and left side notch. Five were indeterminate.

There were also a few graters, mostly *bec à encoche* (nos 12–16; no 13 in quartz), six broken perforators and a number of butt-trimmed flakes. Good blades were rare and always small. The tip of a scale-flaked point (no 24) was found in the south-eastern corner of the site, a few inches below the surface. A complete scale-flaked point (no 25) was found in a similar position in trench 66.

In the Jura sequence, *éclats écaillés* (nos 17–23) have characterized Phase 3 sites. Their important presence in the lower 3b layer may appear surprising. However, these tools have always existed in Phase 2 sites, though they only become numerically important in Phase 3. At Glengarrisdale, many are minute (nos 20–23), with much flaking, found alongside large cores and lumps of flint. In quartz, only clear examples have been counted, so the number should probably be much higher (nos 18, 19 in quartz).

Another diagnostic tool is the hammer-anvil ovoid beach cobble, here found with three types of use. Eighteen have face battering (no 67) (two in the centre trenches' layer 3b); 10 (none in the lower level) have, in addition, the double-notch on each long edge and are very similar to the Lussa River Phase 3 hammerstones (no 68) (one iron-stained).

The third form has now been recognized for the first time: three bevel-ended small cobbles, each rather rounder than most of the 28 specimens just described (nos 69, 70). All were close together in layer 3b. Perhaps overlooked at previous Phase 2 sites, this tool may well take its place as a diagnostic feature. One further hammerstone is unclassified.

INTERPRETATION AND DISCUSSION

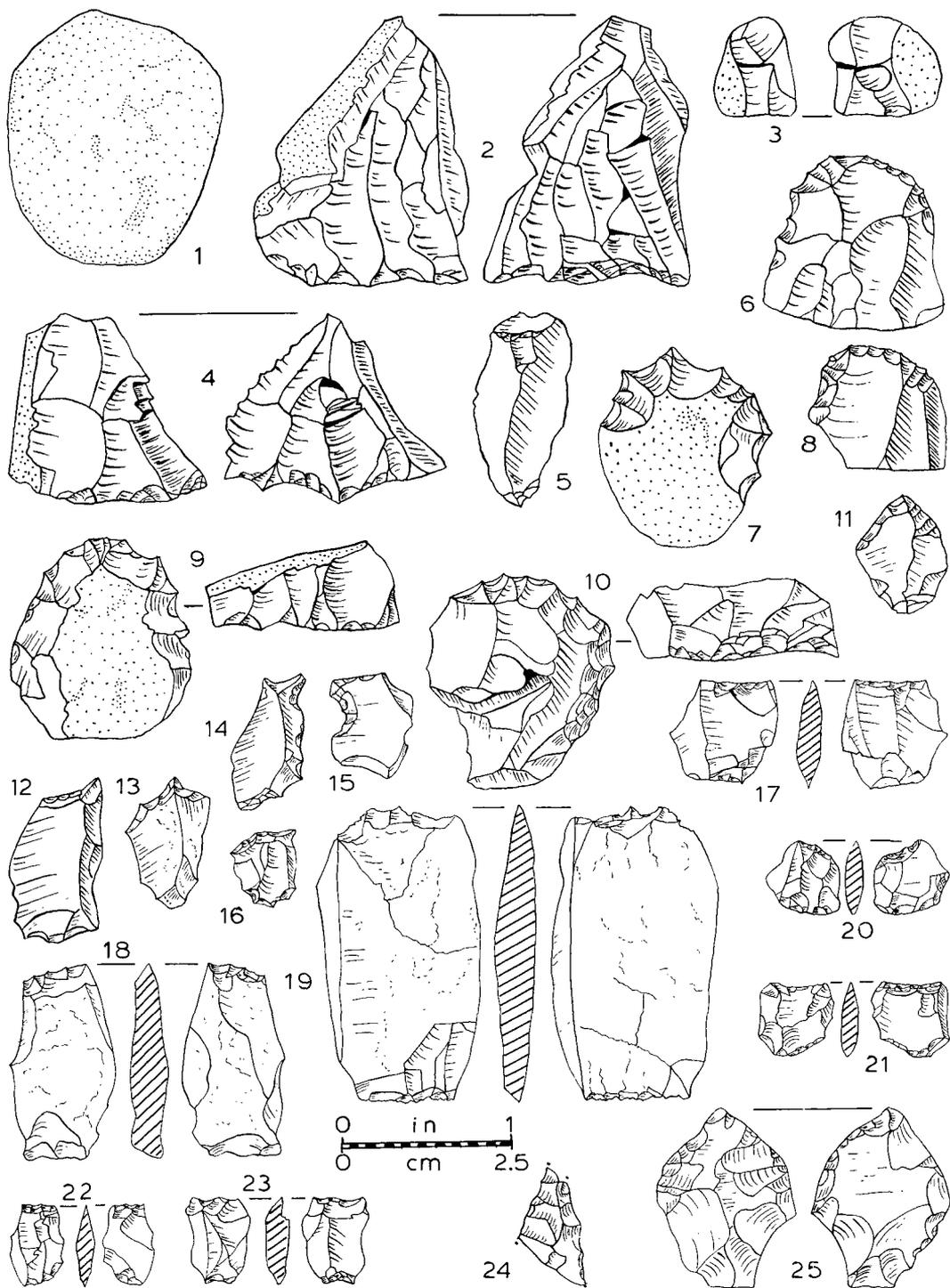
It is suggested that the oldest occupation of the site is represented by the rolled flints. Little can be said of these items, except that they were probably the work of a Mesolithic group occupying either the site itself or a location lower down the slope, their tools being later incorporated in the marine deposits tossed on to the site by the transgressing sea.

The artefacts in the hard-packed loamy deposit in the centre of the site (layer 3b) are thought to be *in situ* (except of course for the rolled flints) and to represent a period late in Jura's Phase 2.

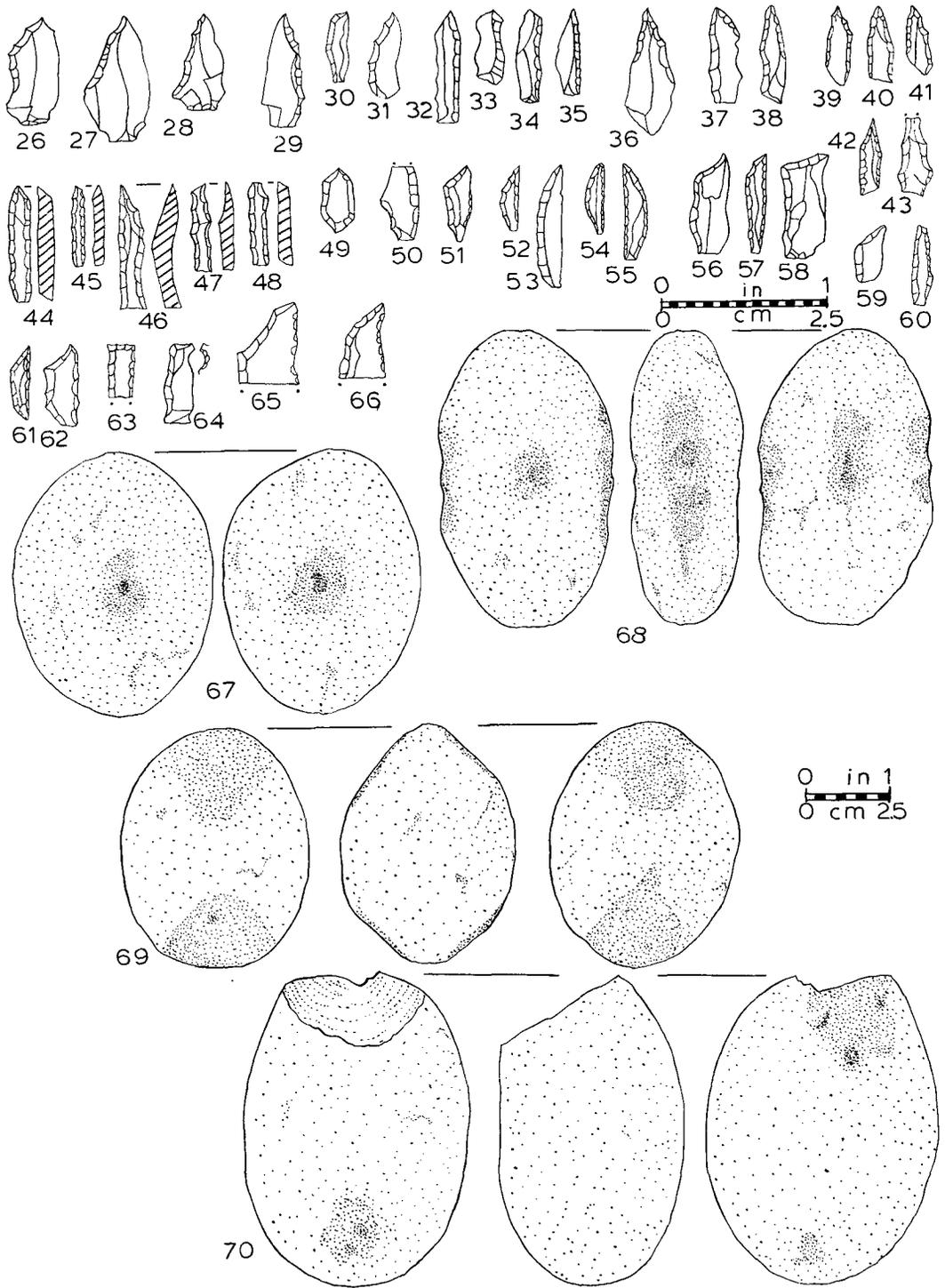
Only in this zone could two clear changes in soil composition be noted, the lower deposit being clearly overlain by loose earth with patches of marine gravels. It is suggested that this is the old land surface and that the considerable hard-panning noted on the site here preserved the artefacts from dispersal by the transgressing sea. The presence of four whole flint pebbles (illus 10, no 1, all very similar) actually touching each other, in the middle of the site, supports the contention that layer 3b was basically undisturbed, since strong marine action would have separated this cache of a Mesolithic flint worker. This central area may have been scooped out, as at Low Clone (Cormack & Coles 1968), to be later filled rapidly by marine gravels (the lenses noted as layer 3a).

Various factors suggest that this layer 3b was occupied by a late Phase 2 people:

- 1 The number of microliths in Layer 3b is far higher than in layer 3a. It is also high in comparison to the outer trenches while representing a smaller excavated area. Jura's Phase 2 is considered to have a higher ratio of microliths to *éclats écaillés* than in Phase 3.
- 2 It contains microlithic forms characteristic of Phase 2 (eg Class 5A).



ILLUS 10 Artifacts



ILLUS 11 Artefacts

- 3 Certain hammerstones comparable to those in Phase 3 sites are absent in layer 3b but present in 3a.
- 4 The ratio of flint to quartz has been a diagnostic feature on Jura. Only in Phase 3 was more quartz used than flint (1:7 at Lussa River). At Glengarrisdale the figure was over 2:1 in layer 3b but 2:5 in layer 3a. The comparative nearness of the flint deposits of south Mull may account for the relatively higher ratio of flint in the upper level.
- 5 In the Jura sequence *éclats écaillés* have characterized Phase 3 sites, though they have always been found in Phase 2. Their overwhelming presence in the outer trenches, where admittedly it was not possible to distinguish a pre- and post-transgression occupation, lends support to the feeling that the layer 3b people were less endowed with *éclats écaillés* than their successors.

With regard to the *éclat écaillé*, Woodman (1978) has stated, without supporting discussion, that it is the product of a shortage of flint. The technique may sometimes have indeed been used to remove one flake from another, for lack of flint. The bipolar working of small flint pebbles also produces an *éclat écaillé* (scalar core) – which is not necessarily a waste product. However, there is every reason for thinking that, on Jura at least, the *éclat écaillé* was primarily a tool in its own right.

A high proportion of *éclats écaillés* is made in quartz, of which there is no shortage on the island. Many are minute (nos 20–23), with much flaking, found alongside large cores and lumps of flint. The technique is rarely noted on large pieces of flint and quartz, yet its use on small pieces is obviously more difficult – why work the raw material with difficulty in scalar form when it can be done easily by another technique? Most *éclats écaillés* have bevelled, often wafer-thin ‘ends’ with long ‘sides’ untouched – why has knapping concentrated on these two edges, increasingly difficult to flake, if only flakes are wanted? Finally, the technique and artefact were known but little used in Jura’s Phase 1B, yet flint (in the form of pebbles) had always to be brought on to the island. In 1978 the writer noted tiny obsidian *éclats écaillés* in the Teide crater on Tenerife (Canary Islands) although the crater holds large quantities of high-grade obsidian (Mercer 1980b). Shortage of raw material seems no reason for the appearance of the *éclat écaillé*; new knapping performances may be a factor but, in our opinion, the large quantities found on Jura sites indicate its use as a tool.

Finally, layer 3a held artefacts which can be attributed to a post-transgression occupation. A dozen reused artefacts were recognized; the heavy staining and corrosion may well have reduced the number identifiable. It is suggested on typological grounds (see above) that this later occupation was by a Phase 3 people similar to those at Lussa River (Mercer 1970; 1971).

Layer 3a will also hold artefacts from the previous two occupations, since the sea will certainly have drawn this uppermost deposit from the top of the whole site (eg the rolled flints). The same holds good for the outer trenches. Many of the upper flints throughout the whole site, so stained and eroded as to be almost featureless (perhaps also rolled) can be expected to derive from an iron-bearing level partially destroyed by the sea (layer 4).

The position seems similar to that at North Carn (Mercer 1972b), though there the earlier *in situ* material was on and in the top of the pre-transgression old land surface, clearly distinguishable from the marine level above (here only possible in the central area).

The most recent prehistoric presence in the area was during the Neolithic period, as evidenced by the two scale-flaked items, both from the top few inches of the site. The top of all trenches may equally well hold other Neolithic work difficult to separate from the earlier Mesolithic material.

DATING AND TYPOLOGICAL IMPLICATIONS

The site's height above sea level, its stratigraphy and its typology all confirm a Jura Phase 3 occupation overlying a Phase 2 site, the latter probably late in the period. Other Phase 2 sites on Jura are thought to date from 6000 to 3500 BC (climatic evidence and C-14). Carbon dating at the single-level Phase 3 site at Lussa River suggested a late fourth-millennium occupation. No carbon dating was possible at Glengarrisdale. On present evidence, however, it seems safe to place the lower, late Phase 2 level at a time when the sea could still inundate the area – perhaps about 4500 BC; this was followed by a Phase 3 occupation in the fourth millennium BC. There is no reason to suppose that Glengarrisdale Phase 3 was not roughly contemporary with the Phase 3 occupation at Lussa River.

Very little remains to be said about the site. Enough has been written in earlier papers of the unique Mesolithic sequence revealed in the north Jura excavations. The proposed relationship of the Jura microlithic industries to the Obanian culture represented both on the nearby mainland and on the neighbouring island of Oronsay has also been expressed. It had been hoped that this west Jura site would provide a single and undisturbed occupation. Unfortunately, these hopes were not realized. In their place, however, the excavators had the pleasure of finding confirmation of Jura's third microlithic phase, hitherto only known from the east coast.

NOTES

- 1 A first draft of the body of this paper (from the introduction to the end of the discussion on the artefacts) was prepared by John Mercer before his death in July 1982. This text has been revised and completed by Susan Searight, John Mercer's co-worker since 1965. The maps, sections and artefact illustrations are, as usual, by Susan Searight.
- 2 A further two trenches, each 3 ft by 1½ ft (91×45 cm) were dug by S Searight in 1984 (trench 65 and 66). Apart from a scale-flaked point found in the top few inches of trench 66, the small amount of material from these two trenches has not been included in the analysis worked out by John Mercer. It consisted of: two *éclats écaillés* in trench 65; one core and four *éclats écaillés* in trench 66.

ACKNOWLEDGEMENTS

The excavation was carried out by John Mercer in May and June 1979 and June 1980. He was helped on both occasions by Ulla Ohse and in 1980 by Mark Milburn. Mr and Mrs A R Nelson, the landowners, gave permission to excavate. Further work was carried out on the site in August 1984 by Susan Searight, helped by Joanna Bairstow, Roger Marsh, Guy Martinet, and Stephen and Annabel Rhys.

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