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EXCAVATION OF A HUT CIRCLE AT CUL A' BHAILLE, JURA

J B STEVENSON

The stone assemblage catalogue: CAROLINE WICKHAM-JONES

NOTES TO THE STONE ASSEMBLAGE CATALOGUE

- i All pieces are flint unless otherwise stated.
- ii When being examined the pieces are always held with the dorsal face uppermost and the proximal end towards the observer.
- iii Dimensions are given in millimetres in the order: length; width; thickness; in the case of cores, chips, and chunks, however, these axes have obviously been chosen arbitrarily.
- iv The morphological tools are merely pieces that have been retouched or possess an unusually regular shape. Few items are readily paralleled by conventional morphological types and allocation of a name has been left to the end of an entry as this is largely a subjective matter. No functional information is implied by these terms and it should in any case be remembered that totally unretouched pieces may well form efficient implements.
- v Chips and chunks are pieces with neither a platform nor a ventral surface. The largest dimension of the chunks is over 15mm, that of the chips is under 14 mm.
- vi Where possible the hammer technique used to detach a piece has been noted. (See general text for the detachment features reflecting the use of the different hammers). Note that individual flakes can never be used reliably as indicators of technique, and that the detail is drawn from a comparison of all the flakes of an assemblage.
- vii Cortication refers to the matt discolouration, usually white or cream, which may eventually cover the surface of a flint. Patination is the lustrous sheen that may subsequently develop.
- viii All the pieces are flawed to some degree. Where this is particularly bad it has been noted in the catalogue. Damage refers to the breaking up of a piece subsequent to its being affected by heat.
- ix The following abbreviations have been used: l, left edge angle; r, right edge angle; d, distal edge angle; p, proximal edge angle.

An asterisk following the catalogue number indicates that the piece is illustrated on Illus 7-10 (in print)

FLINT

Pebble Cores

- 1* White; corticated; strikes all over; flawed; 58:41:15.
- 2* Cream/brown; corticated; artificial platform; strikes on one side; flawed; 39:20:20.
- 3* Cream/grey; corticated; strikes all over; flawed; 36:28:22.
- 4* Grey; corticated; strikes all over; 38:27:33.
- 5* Pink; corticated; artificial platform; two strikes on one side; remainder cortical; flawed; 31:35:33.
- 6 White; corticated; platform exhausted; seven strikes all round; bipolar technique; flawed; 31:23:15.
- 7* White/grey; corticated; artificial platform; six strikes all round; bipolar technique; 36:20:18.

Core Trimming Flakes

- 8* Grey; slightly corticated; lightly patinated; 27:20:09.
- 9* White/grey; corticated; 10:10:04.
- 10* White; corticated; 09:09:03.
- 11* Grey; 06:11:03.

Chunks: Secondary

- 12 Burnt; white/grey; corticated; calcined; damaged; 25:19:15.
- 13 White; corticated; patinated; flawed; 24:19:11.

Chunks: Inner

- 14 White; corticated; patinated; flawed; 39:29:24.
- 15 Burnt; white; corticated; calcined; damaged; 38:31:11.
- 16 Grey; slightly corticated; 32:16:11.
- 17 White; corticated; lightly patinated; flawed; 30:21:19.
- 18 White; corticated; 31:21:25.
- 19 White; corticated; 24:17:12.
- 20 White; corticated; slightly patinated; flawed; 21:20:06.
- 21 Burnt; white; corticated; damaged; 20:18:05.
- 22 Burnt; white; corticated; calcined; damaged; 20:17:07.
- 23 Burnt; white; corticated; calcined; damaged; 20:12:06.
- 24 Pale grey; flawed; 20:11:05.
- 25 White; corticated; 20:11:05.
- 26 Burnt; white; corticated; calcined; damaged; 15:10:05.
- 27 Burnt; white; corticated; damaged; 16:08:04.
- 28 Burnt; white; corticated; damaged; 15:10:06.

Chips: Secondary

- 29 Burnt; white; corticated; damaged; 10:07:04.
- 30 Burnt; white; corticated; damaged; 10:09:03.
- 31 White; corticated; 08:04:02.
- 32 Burnt; white; corticated; calcined; damaged; 07:06:02.

Chips: Inner

- 33 Burnt; white; corticated; calcined; damaged; 13:08:04.
- 34 Burnt; white; corticated; damaged; 14:09:05.
- 35 White; corticated; 13:11:15.

- 36 White; corticated; 12:08:08.
- 37 Burnt; white; corticated; calcined; damaged; 12:07:06.
- 38 Burnt; white; corticated; damaged; 13:07:05.
- 39 Burnt; white; corticated; calcined; damaged; 13:10:03.
- 40 Burnt; white; corticated; damaged; 12:10:02.
- 41 Burnt; white; corticated; damaged; 14:10:03.
- 42 Burnt; white; corticated; damaged; 12:09:03.
- 43 Burnt; white; corticated; damaged; 14:09:03.
- 44 Pale grey; corticated; 13:07:04.
- 45 Burnt; white; corticated; damaged; 11:09:02.
- 46 White; corticated; 11:08:02.
- 47 Burnt; white; corticated; damaged; 11:09:02.
- 48 Burnt; white; corticated; calcined; damaged; 12:05:03.
- 49 Burnt; white; corticated; damaged; 10:08:02.
- 50 White; corticated; 10:08:02.
- 51 White; corticated; 09:08:02.
- 52 Burnt; white; corticated; damaged; 11:09:02.
- 53 Burnt; white; corticated; damaged; 11:05:04.
- 54 Burnt; pale grey; corticated; damaged; 09:06:03.
- 55 Burnt; white; corticated; damaged; 09:08:02.
- 56 Burnt; white; corticated; damaged; 09:08:02.
- 57 Honey; 08:08:03.
- 58 Burnt; white; corticated; calcined; 08:08:05.
- 59 Burnt; white; corticated; damaged; 10:05:02.
- 60 Burnt; white; corticated; damaged; 11:06:02.
- 61 Honey; 07:08:01.
- 62 Burnt; white; corticated; damaged; 09:06:03.
- 63 Burnt; white; corticated; calcined; damaged; 09:05:03.

- 64 Burnt; white; corticated; damaged; 07:05:02.
- 65 Pale grey; flawed; 09:07:01.
- 66 Pale grey; slightly corticated; 08:07:01.
- 67 White; corticated; patinated; 09:05:01.
- 68 Pale grey; corticated; patinated; flawed; 07:04:03.
- 69 Burnt; white/red; corticated; 06:07:02.
- 70 Burnt; cream; corticated; damaged; 09:06:01.
- 71 Burnt; white; corticated; calcined; 09:05:01.
- 72 Burnt; white; corticated; calcined; damaged; 06:05:02.
- 73 Cream; corticated; 05:03:01.

Flakes: Primary

- 74 Pale grey; slightly corticated; lightly patinated; prepared platform; punch struck; hard hammer; 35:18:07.
- 75 Burnt; white; corticated; lightly patinated; calcined; 09:08:01.
- 76 White; cortical; 06:05:01.

Flakes: Secondary

- 77 Heated; red/brown; slightly patinated; broken; proximal segment surviving; soft hammer; 21:20:07.
- 78 White; corticated; broken; distal segment surviving; 29:24:12.
- 79 White; corticated; soft hammer; macroscopic edge damage on right edge; 32:30:09; r 30°.
- 80 Orange; slightly corticated; artificial platform; soft hammer; macroscopic edge damage on left edge ventral surface and on distal edge dorsal surface; 25:19:05; l 37°; d 60°.

- 81 Pale grey; corticated; artificial platform; soft hammer; flawed;
53:34:13.
- 82 Burnt; pale grey; corticated; damaged; 42:28:14.
- 83 Pale grey; partially corticated; 58:17:09.
- 84 White; corticated; artificial platform; flawed; 42:23:18.
- 85 Pale grey; lightly patinated; artificial platform; flawed; 33:19:12.
- 86 Pale grey; corticated; punch struck; hard hammer; 39:16:06.
- 87 Pale grey; partially corticated; broken; proximal surviving;
artificial platform; hard hammer; 23:25:05.
- 88 Pale grey; corticated; artificial platform; soft hammer; 25:19:06.
- 89 Burnt; white; corticated; calcined; broken; proximal surviving;
damaged; 17:22:10.
- 90 Pale grey; artificial platform; hard hammer; 13:12:06.
- 91 Burnt; pale grey; corticated; broken; proximal surviving; damaged;
10:20:05.
- 92 Pale grey; slightly corticated; broken; middle surviving; 10:15:05.
- 93 Pale grey; slightly corticated; lightly patinated; artificial
platform; hard hammer; 13:15:03.

Flakes: Inner

- 94 Pale grey; slightly corticated; lightly patinated; 25:20:04.
- 95 Pale grey; corticated; artificial platform; hard hammer; punch
struck; 23:16:04.
- 96 White; corticated; artificial platform; soft hammer; 26:24:08.
- 97 Pale grey; corticated; broken; middle surviving; 22:27:06.
- 98 Burnt; pale grey; corticated; broken; proximal surviving; damaged;
18:19:05.

- 99 Pale grey; corticated; artificial platform; hard hammer; 16:22:06.
- 100 Pale grey; artificial platform; flawed; 25:13:08.
- 101 White; corticated; patinated; broken; distal surviving; flawed;
24:14:07.
- 102 White; corticated; flawed; 25:11:07.
- 103 Burnt; white; corticated; broken; proximal surviving; artificial
platform; damaged; 15:18:05.
Pale grey; corticated; artificial platform; hard hammer; 18:11:03.
Pale brown; corticated; broken; distal right segment removed;
punch struck; 19:18:03.
- 106 Heated; pink; corticated; artificial platform; soft hammer;
24:14:03.
- 107 Burnt; grey; partially corticated; broken; segment surviving;
damaged; 20:16:08.
- 108 Burnt; white; corticated; patinated; damaged; 16:11:04.
- 109 Burnt; grey; corticated; patinated; damaged; 14:17:16.
- 110 Pale grey; partially corticated; lightly patinated; artificial
platform; soft hammer; 11:17:05.
- 111 Burnt; white; corticated; calcined; broken; middle surviving;
damaged; 16:11:03.
- 112 Honey; prepared platform; hard hammer; 14:10:02.
- 113 Burnt; cream; corticated; broken; middle surviving; damaged;
11:12:03.
- 114 Burnt; white; corticated; broken; proximal surviving; artificial
platform; damaged; 13:14:03.
- 115 White; corticated; artificial platform; hard hammer; 11:11:03.
- 116 Burnt; white; corticated; artificial platform; soft hammer;
damaged; 12:11:02.

- 117 Cream; partially corticated; artificial platform; 14:13:03.
- 118 Pale grey; 12:11:03.
- 119 Burnt; white; corticated; damaged; 11:11:02.
- 120 Burnt; white; corticated; damaged; 12:12:02.
- 121 Pale grey; slightly corticated; artificial platform; soft hammer; 11:09:02.
- 122 Cream; corticated; 09:11:02.
- 123 Pale grey; corticated; artificial platform; 11:07:02.
- 124 White; corticated; 12:09:03.
- 125 Honey; slightly corticated; lightly patinated; broken; proximal surviving; 08:08:02.
- 126 Honey; slightly corticated; prepared platform; 08:14:05.
- 127 Cream; corticated; patinated; prepared platform; 14:09:02.
- 128 Burnt; white; corticated; patinated; damaged; 08:09:02.
- 129 Pale grey; corticated; patinated; artificial platform; 08:10:02.
- 130 Pale grey; corticated; broken; proximal surviving; artificial platform; soft hammer; 07:07:02.
- 131 Heated; pink; corticated; 10:08:02.
- 132 Burnt; white; corticated; 08:06:02.
- 133 Burnt; white; corticated; patinated; damaged; 08:06:01.
- 134 Burnt; white; corticated; calcined; damaged; 06:09:01.
- 135 Burnt; white; corticated; lightly patinated; damaged; 05:10:01.
- 136 Burnt; white; corticated; 07:05:01.
- 137 Burnt; white; corticated; calcined; 06:06:01.

Morphological Implements

- 138^W Flake; secondary; white; corticated; artificial platform; hard hammer; parallel sides; blunt ends; distal cortical; macroscopic edge damage on left and right edges; l 46°; r 33°; 47:23:10;
Straight Sided Flake.

- 139* Flake; secondary; cream; corticated; artificial platform; soft hammer; irregular sides; coarse steep retouch forms two notches either side of distal; proximal cortical; 1 notch 2:20; r notch 2:09; l 71°; r 75°; d 80°; 33:35:12; Notched Flake.
- 140* Flake; secondary; pale grey; corticated; artificial platform; soft hammer; irregular sides; shallow irregular retouch on right edge; left side cortical; ventral heavily damaged on left edge and distal; l 62°; r 62°; 34:31:13; Single Edge Retouched Flake.
- 141 Flake; inner; pale grey; corticated; broken; middle surviving; straight sides converging towards distal; right edge steep retouch; left edge shallow irregular retouch; l 34°; r 70°; 09:05:03; Blunt Backed Flake.
- 142* Flake; secondary; pale grey; slightly corticated; lightly patinated; broken; distal surviving; rounded distal; steep retouch all around distal; l 47°; r 75°; d 68°; 23:36:08; Broken Edge Retouched Flake.
- 143* Burnt; flake; inner; red/cream; corticated; artificial platform; hard hammer; left and right sides straight; distal and proximal straight; shallow irregular retouch on left edge; right edge damaged; l 75°; r 43°; 41:45:14; Single Edge Retouched Flake.
- 144* Flake; inner; pale grey; slightly corticated; artificial platform; hard hammer; straight sides converging towards proximal; blunt distal; straight proximal; left edge shallow parallel retouch; right edge irregular retouch; l 40°; r 66°; d 104°; 45:33:12; Edge Retouched Flake.

- 145* Flake; inner; white; corticated; slightly patinated; artificial platform; irregular sides diverging from narrow straight proximal to oblique straight distal with blunt point at right edge; small steep irregular retouch across distal; 21:12:03; d 67°;
End Retouched Flake.
- 146 Flake; inner; pale grey; corticated; patinated; broken; segment surviving; pointed but irregular shape; invasive retouch on both surfaces; l 43°; r 46°; 15:10:03; Broken Point.
- 147* Flake; secondary; pale honey; corticated; straight sides; triangular plan; steep irregular retouch all around; l 74°; r 81°; p 78°; 20:37:13; Steep Sided Triangle
- 148 Flake; secondary; pale grey; slightly corticated; lightly patinated; prepared platform; hard hammer; curved left side; straight right side; curved distal; straight proximal; steep edge retouch around left, right and distal; l 72°; r 54°; d 73°; 35:29:13; Horseshoe Scraper.
- 149* Flake; inner; honey; platform removed; straight sides; blunt distal; irregular proximal; steep edge retouch around distal; small irregular edge retouch around proximal; l 29°; r 42°; d 77°; p 62°;
44:38:10; End Scraper.

Other Stone

Quartz

- 150 Flake; inner; white; 15:08:06.
- 151 Flake; inner; white; 09:04:01.

Pitchstone

153 Flake; inner; charcoal grey; 11:11:03.

Catalogue of the Coarse Stone Tools

154 Rounded pebble; flattened cross section; oval plan; two pecked facets on the smaller end form a crude edge; width of the edge; 53; edge angle 115° ; 145:95:54; wt 1176.4g.

155 Rounded elongated pebble; both ends flattened by pecking; small flakes removed from both ends; 120:92:68; wt 1168.9g.

156* Long pebble; rounded cross section; broken; one end surviving; some flakes removed around break; rounded end damaged by pecking; section of long surface smoothed with cross rubbing; 108:52:40; wt 318.4g; joins with 157.

157* Long pebble; rounded cross section; broken; one end surviving; rounded end damaged by pecking; section of long surface smoothed with cross rubbing; 96:51:40; wt 273.6g; joins with 156.

A report by C Bradley on the functional analysis of the majority of the stone objects is available in the National Monuments Record of Scotland.

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AN GITHAN, ISLAY

J GARDER & M BROWN

Palaeobotanical report: STEPHANIE GRESHAM

The aim of this study was to analyse samples taken from features within the recorded sections in terms of their pollen assemblage to provide evidence of associated flora, and possibly environment, during the archaeological periods involved. Also, it was intended to compare similar features within different sections as to their floral composition. A secondary aim was to use the information gained by paleobotanical analysis to resolve, clarify and confirm the descriptions and role assigned to the features from archaeological evidence. Samples were collected in May.

Certain samples were selected from the original total for pollen analysis, and were prepared by boiling in 10% KOH for twenty minutes and straining through 100 μm sieves. This was followed by hydrofluoric acid treatment (to remove siliceous materials), using the boiling method, as opposed to standing in cold HF for 24 hours. Certain samples required prolonged boiling for up to 1 hour, due to the considerable silica content. However, in some cases, the sample still remained 'gritty' and although prolonged boiling for an hour or more does not appear to damage the pollen grains (Moore & Webb 1978), further boiling was not attempted in order to avoid any possible adverse effects to the pollen. Thus, certain samples could not be analysed because the grains proved to be badly obscured by the siliceous material. In these instances, the sample is marked on the pollen diagram as being 'indeterminable'.

After HF treatment, the samples were treated using Erdtman's acetolysis method, stained in safranin and mounted in molten glycerol jelly. The slides were sealed with clear nail varnish.

The pollen and spore types were identified using the pollen and spore key given by Moore and Webb (1978). The total number of grains counted per slide ranged from 193 to 359 with a median of 245. Indeterminable pollen was not included and only determinable pollen was counted. The pollen sum used to construct the diagram is that of terrestrial pollen (ΣP) and the frequencies of the determinable terrestrial pollen taxa are expressed as percentages relative to that sum. Spores of Pteridophytes and Sphagnum are excluded from the sum and calculated separately as percentages of total determinable land pollen plus spores ($\Sigma P + S$). Unknown types are calculated in a similar way.

Much of the pollen encountered was badly corroded and reliable determination of tri-porate grains was often impossible. Thus, where this occurred, they were counted as Corylus/Myrica. Reliable identification of Urtica type pollen also proved difficult. In some cases this was due to extreme corrosion of the exine, similar to the corrosion of Corylus grains, thus, it is possible that where rather high percentages of Urtica pollen occurred this has been over-estimated or confused with badly corroded Corylus. However, the number of grains where this confusion arose was not sufficient to affect the interpretation of the pollen assemblage as a whole.

POLLEN PROFILE DESCRIPTIONS

SECTION 3

SAMPLE 8

This sample proved sparse in pollen, and much siliceous material was still present, tending to obscure the pollen. Generally, however, there was a high percentage of Cyperaceae pollen, and a low percentage of Ericaceae pollen. Compositae (sub family liguliflorae) were present in relatively high proportions (10%) and Urtica was present (2.5%), implying a rather damp, grassy vegetation (1 Sphagnum spore occurred) with a low count of pteridiophyte, (5%). In general, the pollen was poorly preserved and it was impossible to differentiate between Corylus and Myrica pollen, which occurred at 7% but in the light of the rest of the pollen assemblage it is highly likely to be Corylus pollen. This layer is possibly the unaltered material of a podzolic profile, ie mostly quartz.

SAMPLE 4a

This is the humus-enriched zone of the section (bottom) and was very rich in pollen, with no siliceous material present and a great variety of pollen types reasonably well preserved. Gramineae pollen proved the most abundant taxon in this sample at 39.6%, with low proportions of Ericaceae (8.3%). Calluna vulgaris was the most common type of Ericaceae. Corylus pollen occurred at 8.6%, and some Myrica and Cyperaceae, thus implying a heath-type vegetation. Further evidence for this was the occurrence of acidophilous taxa such as Potentilla and Succisa (2 and 1 grains respectively). However, evidence of local cultivation was found, in the form of 4% cereal pollen and 12.9% Plantago pollen along with 'weed' type pollen in relatively high proportions, characteristic of cultivated fields and open meadows. The occasional Pteridophyte spore was found, but spores in general were rare. Arboreal pollen was more prominent in this sample than in the previous one, Corylus being most prolific with 1 grain of Alnus and 1 grain of Betula. This pollen assemblage possibly represents the vegetation before the process of podzollisation began.

SAMPLE 4b

This sample represents the top of the humus-enriched zone, and differed greatly from 4a in that the pollen concentration was far lower with less variety. This may represent leaching within the horizon. (Maybe of differential pollen types Moore & Webb 1978). Corylus pollen was most prolific (51.7), and other arboreal types were Quercus and Alnus (2% and 1% respectively). Evidence for a heath-type flora occurred with 10% Ericaceae, and 3% Cyperaceae and 1 grain of Potentilla; 1 grain of Cerealia was found and Gramineae pollen was relatively common (21.7%). Along with Plantago pollen (6%) and occasional 'weed' pollen, evidence for local cultivation exists, but far less prominently than in 4a.

SAMPLE 1.3a

This sample represents a peaty layer at the bottom of B horizon and is characterised by a typical peat-forming pollen assemblage, with 53.5% Ericaceae pollen, mainly C. Vulgaris, 5.9% Myrica and low proportions of Cyperaceae and Potentilla. Other herbaceous pollen were absent, apart from 1% of Plantago, 6% arboreal pollen occurred, mostly Corylus but with an increase in Alnus and Betula pollen. 1 grain of Salix occurred. In general, the pollen in this sample was well preserved and well concentrated.

SAMPLE 1.3b

This sample was taken from the top of the B horizon and was very similar in its pollen assemblage to 1.3a.

SAMPLE 18

This represents a leached layer, and the pollen in this sample was poorly preserved and corroded. The pollen assemblage is characterised by low arboreal pollen apart from Corylus (11.5%), and co-dominance of Ericaceae and Gramineae, 1 Potentilla occurred. This was accompanied by reasonable proportions of 'weed' pollen. Thus evidence for disturbance is still present.

SAMPLE 17

This sample is very similar to 18, which implies no differentiation between the two layers. The increase in Ericaceae pollen in these two samples may represent deteriorating soil conditions and climate - initiation of podzolisation.

SAMPLE 7

This zone is characterised by a slight decrease in Ericaceae pollen and a slight

increase in arboreal types. 1 Pinus grain occurred, possibly, representing a long distance transport component. 'Weed' pollen taxa increased; as did the occasional occurrence of spore types, ie 1 Sphagnum spore and 2 spores of Osmunda, implying impeded drainage. In general this zone was far more sparse in pollen, but the pollen was better preserved.

SECTION 6

SAMPLE 2.0

This zone represents the top soil of a well developed podzol ie where podzolisation is at its climax. It is associated with a thin iron pan soil, the typical vegetation of which is heathland. Thus, Ericaceae pollen represent 68.8% of the total pollen sum along with 11.6% arboreal pollen, mostly Corylus, but with relatively high proportions of Betula and Alnus (2% and 2.7% respectively). Plantago is still present at 4% (in fact its presence is almost continuous throughout all sections) plus 1.8% Papillonaceae pollen, typical of cultivated and grass-meadow type ground.

SAMPLE 2.1

This zone represents the A2 of the podzol profile. In this sample, siliceous material was present in excess and so obscured the pollen grains, making a reliable count impossible. The information gained on the pollen assemblage of this sample is therefore derived from qualitative scanning of the slide. Polypodium spores appear to be dominant and it is thus distinctly different from sample 2.0 (the A₀ of the podzol profile). Other Pteridophyte pollen is present along with Corylus. In minor occurrence are Urtica, Plantago, Ericaceae, and Ranunculaceae grains.

SAMPLE 2.2

This zone represents the B horizon of a podzol profile, occurring below the iron pan. Due to the iron pan impeding movement through the soil profile, pollen was not present in sufficient quantities to allow a count.

SAMPLE 10a

This zone is characterised by an increase in arboreal pollen (14.7%) again mostly Corylus, but with a distinct increase in Alnus pollen (4%). One Ulmus pollen grain was found. The pollen assemblage is typical of a heath type flora, with 59% Ericaceae pollen and some Gramineae (11%). A low proportion of Pteridophytes were present, and occasional grains of Ranunculaceae and