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Reconnaissance search for haematite specimens amongst the lithics from Pontnewydd Cave

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Description

All the residues from the LB with a sieve size >9mm have been examined, except for one which could not be located. None of these contained any "exotics". Approximately 70% of boxes containing picked “exotics” have been examined, including any non-LB material contained therein. Boxes examined have been initialled to allow completion of the task if so desired. The significant haematite specimens located have been removed from the collection and boxed separately.

The total yield of haematitic material with grain size greater than approximately 6mm was only 47.5g. Of this 3 pieces (4.6g) came from UB, 1 piece (19.8g) from the pond and 5 pieces from LB (23.1g). In addition there were various smaller soft red grains from various contexts which were really too small for handlens identification .

The material could be divided into several petrographic types. The most important was a quartz-bearing haematite ore (34.7g total), but there were also iron oxides derived from oxidation of iron sulphides, and what appeared to be haematised sandstones. There was, in addition to the rest of the haematite material, one pebble of an Ordovician sedimentary ironstone, which could have been derived from Snowdonia or Anglesey (present in the WWII dump). All the haematitic material occurred apparently as water-worn pebbles.

Discussion

On casual inspection the origin of this material was not apparent; larger pieces would be required before the textures would be useful. Potential source areas include fissures and caves within the Carboniferous limestone of North Wales where Triassic/Jurassic haematites are locally developed (e.g. in Dyserth Quarry, 8km NE [SJ 062789] and Bodfari Quarry, 8km E [SJ 095702]). The distribution of such features outside the major quarries is currently not known, and would require some primary fieldwork to determine. Similar material could also be glacially-derived from Cumbria, where almost identical ores occur on the opposite side of the Morecambe Bay basin. It seems likely that these sources could be differentiated chemically in appropriate material, but there is little comparative data currently available (compared, for instance with the large body of data now constructed for the Bristol Channel Orefield). The small size of most of the pieces would make an analytical programme difficult, but by no means impossible.

Given the small size of the pieces (in comparison most of the Paviland pieces were >10g), their rounded pebble form, and the low-levels of abundance, there seems to be little to suggest that these materials were derived through human agency - although that would be difficult to demonstrate. Unless there are compelling arguments based on what is known of the origin of the rest of the "exotic" assemblage that the haematites cannot have been derived naturally from one or other of these sources, there is little to promote this as an anthropogenic assemblage. If it was desired to attempt to determine whether this material was derived by human agency, it would probably be necessary to demonstrate that haematite clasts do not occur in the drift deposits outside the cave.

Summary of significant pieces from “Exotics” collections

PN85	F661	H1 SW	UB	99.84 – 99.74	2.4g	fibrous crust
PN83		I7 SE	LB	99.25 – 99.15	6.4g	haematite with quartz
PN82	D1823	J6 NW	pond	99.70 – 99.60	19.8g	haematite with quartz and calcite
PN83	D2155	J7 SW	LB	99.38 – 99.28	0.9g	haematite with quartz
PN88	D4952	G7 SW	LB	99.19	5.2g	haematite with quartz
PN83	D2096	I7 NW	LB	99.10 – 99.00	5.5g	haematised sandstone
PN81	D888g	I7	UB	99.60	0.6g	haematite with quartz (broken from below)
PN81	D888d	I7	UB	99.60	1.6g	haematite with quartz (broken from above)
PN84	D3572	J6 NW	LB	99.30 – 99.20	5.1g	haematised sandstone

>9mm sieve sample residues examined from the Lower Breccia.
(Greyed-out sample not examined).

76	C19	PN 88	S 320	LB	G7SW	D	99.40-99.30	9mm Sieve residue
77	L11	PN 88	S 327	LB	G7SW	D	99.30-99.20	9mm Sieve residue
78	C20	PN 88	S 337	LB	G7SW	D	99.20-99.10	9mm Sieve residue
79	C2	PN 88	S 337	LB	G7SW	D	99.20-99.10	9mm Sieve residue
80	L10	PN 88	S 341	LB	G7SW	D	99.30-99.20	9mm Sieve residue
81	A5	PN 88	S 350	LB	G7SW	D	99.30-99.20	9mm Sieve residue
82	A5	PN 88	S 349	LB	G7SW	D	99.40-99.30	9mm Sieve residue
83	M4	PN 88	S 327	LB	G7SW	D	99.30-99.20	9mm Sieve residue
84	A5	PN 88	S 345	LB	G7SW	D	99.20-99.10	9mm Sieve residue
85	C19	PN 88	S 366	LB	G3SW	F	99.35-99.25	9mm Sieve residue
86	C20	PN 88	S 340	LB	G7SW	D	99.40-99.30	9mm Sieve residue
87	A3	PN 88	S 351	LB	G7SW	D	99.20-99.10	9mm Sieve residue
88	N7	PN 88	S 304	LB	G7SW	D	99.50-99.40	9mm Sieve residue
89	C5	PN 88	S 353	LB	G7SW	D	99.30-99.20	9mm Sieve residue
90	C20	PN 88	S 312	LB	G7SW	D	99.40-99.30	9mm Sieve residue
91	M4	PN 88	S 322	LB	G7SW	D	99.40-99.30	9mm Sieve residue
92	C5	PN 88	S 353	LB	G7SW	D	99.40-99.30	9mm Sieve residue
93	C4	PN 88	S 323	LB	G7SW	D	99.40-99.30	9mm Sieve residue
94	C5	PN 88	S 354	LB	G7SW	D	99.20-99.10	9mm Sieve residue
96	C19	PN 88	S 364	LB-Clay matrix	G3SE	F	99.25	9mm Sieve residue
98	A5	PN 88	S 365	LB-clay matrix	G3SW	F	99.35-99.25	9mm Sieve residue
99	A3	PN 88	S 344	LB-clay matrix	G7SW	D	99.80-99.53	9mm Sieve residue
104	C18	PN 88	S 414	LB(f)	G3NW	F	99.16-99.06	9mm Sieve residue
105	E5	PN 88	S 406	LB(f)	G3NW	F	99.06-99.00	9mm Sieve residue
107	E6	PN 88	S 343	LB-Pond	G7SW	D	99.80-99.53	9mm Sieve residue
110	E5	PN 88	?	UB or LB-Pond	G4NW	F	99.45-99.40	9mm Sieve residue