

Combe Down Stone Mines

Metal finds

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INTRODUCTION AND METHODOLOGY

Total of 609 metal objects was recorded although a further 48 objects were recorded on site but have not been seen during post-excavation recording and analysis.

All items were recorded onto an Access database. For each object the findspot/location within the mine complex was identified and all available provenance information was recorded. Objects were measured and a verbal description recorded. A paper record with sketches of most, if not all objects was also created. During the recording process the objects were identified, and allocated to a functional category (Table 1).

INSERT Table 1 (Functional categories)

The overwhelming majority of metal finds are tools. In total there were 401 tools identified amongst the 609 recorded finds. Seven of the tools have been omitted from consideration in the report. These include part of a scythe blade, part of a sickle blade, a cast tine from a mechanical mower, and a small wooden printer's roller. Of the 394 remaining tools , 333 were tools specific to mining, further 26 were probably used in mining, and 20 were probably mason's tools. There are 14 other tools and 1 object that is probably a tool but of uncertain function (Table 2).

A further 64 objects relate to transport, and included barrows or parts of barrows, lifting gear and items belonging to the mine railway.

INSERT Table 2 HERE

Provenance

The tools were found within the mines, but generally they were not sealed stratigraphically within archaeological deposits, but rather just lying discarded within the workings. The dating of the tools is therefore very much dependent upon their location within the mine complex. The complex was open and developed over a long period, and the various parts of the mine can be dated with more or less certainty on the basis of this development. The finds are dated by their location within the mine complex. Because the finds were not sealed or buried it is always possible that tools and other items may have been moved after their original deposition, or that tools were discarded in earlier workings. Some finds were certainly recovered from debris dumped into old workings. In some but not all cases it was possible to date the dumping episodes.

Layout of the report

The report discusses the various finds under functional categories. The mining tools, masons' tools and general tools are considered first, and then the finds associated with moving and manoeuvring the quarried stone, and finally equipment, such as lamps, tinder boxes and bottles, used by miners themselves. Selected examples of tools and other finds will be illustrated and catalogued. Only a selection of the numerous chips and wedges will be illustrated, but they will be tabulated and more detail can be found in the archive.

There are a number of finds which were clearly nothing to do with the quarrying of stone, such as a fragment of scythe blade, a revolver, a fishing reel and set of darts. Most of these finds can be explained as material dumped into the open quarries after the cessation of quarrying. This material will be briefly discussed but not illustrated or otherwise dealt with in any detail.

MINING TOOLS (Tables 3-4)

There are examples of mining tools from each stage of the process (Table 3). The most common finds in terms of numbers are chips, wedges and triangular files, but while in part this reflects the numbers of these tools used, it also reflects the fact that both chips and wedges regularly broke and were discarded, and that files could be easily misplaced.

INSERT Table 3 HERE

INSERT Table 4 HERE

Picks

The first stage in cutting stone was the preparation of the working face. Picks were used to cut a slot or jad at the top of the working face. Five examples of pick heads have been found. They include two jading picks (Cat. Nos 1, 3) one of which is broken. A second complete pick Cat. No. 2) has straight tines, and possibly a well-sinker's pick. The remaining two picks (Cat. Nos 4-5) are large picks with curved tines; Cat. No. 4 is missing one tine and Cat. No. 5 has one broken tine . Catalogue numbers 1-4 come from areas worked in Phase 3 or in Phases 3 or 4. The fifth pick (Cat. No. 1) is not securely located.

The sample of surviving picks is small perhaps does not give a true picture of the potential variety of picks and numbers of picks that would have been used or of any possible changes in the forms through time.

Catalogue of picks

(illustrated)

- 1 **Jadding pick**, with short stout tines. L 500 mm. Sf 779, Unlocated. Unphased [ID 557]
- 2 **Pick**, complete head with straight tines. Probably a well sinking pick. Fe. L: 525 mm. Sf 560, Mine area 2332, Stub I5. Phase 3 or 4. [ID 463]

(not illustrated)

- 3 **Jadding pick**. Single tine from a jadding pick, broken at the eye. Fe. L extant: 187 mm. Sf 1016, Foxhill, probably area 2381, Road 1-20 Set (10) pillar recess. [ID 524]
- 4 **Pick**, single curved tine and part of eye survive. Fe. L extant: 290 mm. Sf 107, Mine area 509, Phase 4. [ID 46]
- 5 **Pick**, with curved tines, one incomplete. Part of handle in eye. Fe. L extant: 387 mm. Sf 523, Mine area 2332, Stub I5 Road. Phase 3 or 4. [ID 263]

Saws and associated objects

Saws

Once the picking slot was cleaned out, it was possible to begin sawing using a razzar saw to cut the first block, the wrist stone. The razzar was a saw with a comparatively narrow blade which could be used in the confined space of the picking slot. From about the middle of the 19th century, for most sawing wide-bladed Frig Bob saws was used. A single razzar saw (Cat. No. 6) has been recovered together with at least eleven Frig Bobs saws (Cat. Nos 7-17). The latter vary considerably in length. The longest was 1850 mm, while the shortest was only

920 mm long. The width of the blades also varies from a maximum of 303 mm to a minimum of 245 mm. Some variation in width is undoubtedly due to wear in use. The single example of a probable razzler (Cat. No. 6) recovered from Combe Down has a blade xx mm wide and was probably a worn down Frig Bob blade.

The razzler and most of the Frig Bobs that were recovered lacked handles, but had mounting plates for the attachment of handles. In most cases these were formed from strip of metal folded and riveted to the end of the saw blade. The outer end of the folded strip was formed into a tube into which the handle could slide. The one exception is Cat. No. 10 which has its handle plate, which was attached to a tongue extending from the back edge of the saw, and which appears not to have been riveted. The attachment still formed a tube into which the handle could slide. The complete Frig Bobs are all from Phase 6 locations. Since the Frig Bob was only in widespread use from the 1840s this scarcely surprising.

In addition to the complete, or near-complete saws, a number of saw blade fragments were recovered and also vertical saw handles from stone cutting saws. The handles could have been fitted to Frig Bob or razzler saws but their form was quite different from the handles fittings on the extant razzler and frig bobs. The wooden handles were attached by tangs to plates which were slotted onto the ends of the saw blade (Cat. No. 18) or were slotted and riveted directly to the blade (Cat. Nos 19-20). There are few clues to the form of the saw blade to which these hands were attached; not enough of the saw blades survive attached to the handles. All were vertical handles and the evidence suggests that they were attached to the top edges of the saw blades. However there is no clear evidence to indicate the width or form of the blade. The finding of a pair of handles (Cat. No. 18) may indicate that these were used together on one saw, but this is by no means certain. The fact that these handles came from earlier workings dating to Phases 2 or 3 to Phases 4 or 5, suggests that they could be the handles of earlier forms of stone cutting saw, predating the Frig Bobs. Unfortunately there are few clues to the form of these saws. There are two saw blade fragments from Phases 3 or 4 (Cat. No.) and 4 or 5 (Cat. No.) which are not from Frig Bobs but from comparatively narrow parallel sided saws. Possibly these are parts of stone cutting saws predating the Frig Bobs and possibly used by two men to cut blocks.

Catalogue of saws and saw handles

Saws

(illustrated)

- 6 **Razzer** saw, incomplete. Riveted handle mount. Fe. L: 1096 mm; W: 95 mm. Sf 537, Shaft Road Quarry, Mine area 2377, Phase 6. [ID 352]
- 7 **Frig Bob**, short broad blade. Riveted handle attachment plate. Fe. L: 920 mm; W: 255 mm. Sf 300, Shaft Road Quarry, Mine area 2372. Phase 6. [ID 345]
- 8 **Frig Bob**, short broad blade. Riveted handle attachment plate. Fe. L: 1284 mm; W: 295 mm. Sf 299, Shaft Road Quarry, Mine area 2372. Phase 6. [ID 346]
- 9 **Frig Bob**, long broad blade. Riveted handle attachment plate. Fe. L: 1535 mm; W: 277 mm. Sf 301, Shaft Road Quarry, Mine area 2372. Phase 6. [ID 347]
- 10 **Frig Bob**, long blade. Handle mount, apparently not riveted, and fixed to a tongue extending from the back edge of the saw blade. Fe. L: 1645 mm; W: 250 mm. Sf 444, Mine area 2379, localised quarry, context 1002. [ID 349]
- 11 **Frig Bob**, long blade. Complete blade with curved worn cutting edge. Now lacks handle mount, but has at least two rivet holes. Fe. L: 1795 mm; W: 265 mm. Sf 445, Mine area 2379, localised quarry, context 1002. [ID 348]
- 12 **Frig Bob**, long blade. Riveted handle attachment plate. Fe. L: 1850 mm; W: 245 mm. Sf 1034, Foxhill, mine area 2383, Road 1.25 Set (7). Phase 6. [ID 538]

(not illustrated)

- 13 **Frig Bob**, incomplete. Riveted handle attachment plate. Fe. L: 1123 mm; W: 300 mm. Sf 535, Shaft Road Quarry, Mine area 2377. Phase 6. [ID 344]
- 14 **Frig Bob**, long broad blade. Riveted handle attachment plate. Fe. L: 1533 mm; W: 303 mm. Sf 536, Shaft Road Quarry, mine area 2377. Phase 6. [ID 350]
- 15 **Frig Bob**, long broad blade. Riveted handle attachment plate. Fe. L: 1573 mm; W: 290 mm. Sf 993, Foxhill, mine area 2383, Shaft road near 1.25. Phase 6. [ID 539]
- 16 **Frig Bob**, long blade. No handle surviving handle mount. Fe. L: 1658 mm; W: 260 mm. Sf 416, u/s, unlocated. [ID 351]
- 17 Fragment of **Frig Bob** blade. Fe. W: 280 mm. Sf 987, Foxhill, mine area 2383. Phase 6. [ID 528]

Saw handles

(illustrated)

- 18 Pair of **vertical saw handles** probably from a two-person saw rather than from Frig Bob or razzer saws. Wooden handles attached to tanged iron fittings and secured with collars. Fe and wood. L: 290 mm. Sf 196, Mine area 2217, context 1089. Phase 4 or 5. [ID 20]
- 19 **Vertical saw handle mount**, tanged. The fitting was riveted to the saw blade. Fe. L: 205 mm. Sf 109, Mine area 508, context 408. Phase 4. [ID 58]

(not illustrated)

- 20 **Vertical saw handle mount**, tanged. The fitting was riveted to the saw blade. Fe. L: 224 mm. Sf 66, Mine area 506?, cartway 65. Phase 2 or 3? [ID 26]

Saw blade fragments

(not illustrated)

- 21 **Saw blade** fragment with 3 large teeth, probably fragment of Frig Bob blade. Fe. L: 111 mm; W: 65 mm. Sf 174, Unlocated. Unphased. [ID 75]
- 22 **Saw blade** fragment with large teeth, some of which are bent over. Teeth c 5 per 100 mm. Possibly Frig Bob fragment. Fe. L: 174 mm; W: 127 mm. Sf 615, Mine area 2363, Stub L8. Phase 4 or 5. [ID 316]
- 23 **Saw blade** fragment from a comparatively narrow parallel-sided blade with quite large teeth (8 teeth per 100 mm or c 2 teeth per inch). Fe. L: 337 mm; W: 135 mm. Sf 632, Mine area 2343, Stub B3. Phase 3 or 4. [ID 310]
- 24 **Saw blade** fragment with quite large teeth c 7 teeth per 100m; almost 2 per inch (11 teeth per 6 inch). Fe. L: 254 mm. Sf 13, Byfield mine, Entry 1 u/s. Unphased. [ID 562]

- 25 **Saw blade** fragment from narrow parallel-sided blade with small teeth (c 28 per 100 mm, or c 7 per inch). Fe. L: 185 mm; W: 72 mm. Sf 930, Mine area 2351, Stub O42 Set 126. Phase 3 or 4. [ID 460]
- 26 **Possible saw blade.** Small fragment of irregular outline, probably from saw blade. Fe. L: 100 mm; W: 100 mm. Sf 197, Mine area 2217, context 1089. Phase 4 or 5. [ID 21]

Objects associated with saws

Saw setting tools

In addition to the surviving saws and handle fragments a small number of saw setting tools and a large number of sharpening files were found.

Three saw setting tools, all of quite different forms, were found. One example (Cat. No. 27) was from a Phase 2 location and another (Cat. No. 28) from a Phase 4 or 5 location. The third tool (Cat. No. 29) was unphased. All three tools have similar keyhole shaped slots and were used to set the angle of the teeth of the saws.

Catalogue of saw setting tools

Saw setting tools

(illustrated)

- 27 **Saw setting tool**, pointed handle or tang and round blade with 3 keyhole shaped slots. Fe. L: 182 mm; W: 78 mm. Sf 598, Mine area 2200, Stub A30. Phase 2. [ID 469]
- 28 **Saw setting tool**, with handle and blade with 3 keyhole shaped slots. Fe. L: 215 mm; W: 44 mm. Sf 554, Mine area 2356, Stub F18. Phase 4 or 5. [ID 466]
- 29 **Saw setting tool**, with 2 keyhole shaped slots. Fe. L: 307 mm; W: 34 mm. Sf 735, Mine area 2360 tipping, Stub N11 (East Firs). Unphased. [ID 388]

Saw sharpening files

Files of triangular cross-section, which were used to sharpen large stone cutting saws, were found in some numbers and were dateable were mainly later phases of mine working (Table 5). The files are all very similar and none have been illustrated.

The files vary in length. Nine files were incomplete. There are three small files ranging 173 mm to 203 mm in length. The remaining complete or near complete files range in length from 250 mm to 375 mm.

Table 5: Distribution of saw sharpening files of triangular section by Phase

Phase	Count
2 or 3?	3

3 or 4	1
4 or 5	11
6	21
unphased	15
Total	51

Wedges and chips (Tables 6-7)

Once the sawing of the wrist stone had been completed it had to be removed from its bed using chips and wedges. These were the two most commonly found mining tools. The chips and wedges were used together to split rock. Wedge holes were cut along the line of the intended break and into these were placed wedges each sandwiched between two chips. The wedges were then driven in until the rock split.

Wedges

Sixty six wedges or possible wedges were found (Table 6). Of these, 16 survive as fragments, mainly small pieces from battered heads or broken off blade ends. It is clear that these tools broke frequently in use, for not only are there the broken fragments, but there is a clear example of a wedge split at its head or striking end (Cat. No. 38). Four of the possible wedges are not identified with certainty; they may be too small or their form suggests that they may have served some other purpose.

The remaining 46 examples can be divided into a number of types (Table 6). The most common form is Type 2, which is parallel-sided and has a rounded end. Type 1 is also parallel-sided but has a square end. Type 3 is similar to Type 2 with parallel sides and a rounded end, but differs in that the top is chamfered and slightly narrowed. Both Types 2 and 3 can be found in long and short forms. The shorter examples are about 200 mm in length whereas the longer examples are usually between 230 and 250 mm long. There is little or no difference in the chronological distribution of Types 2 and 3, and it seems probable that both Type 2 and 3 were used at Combe Down at the same time. At Whittington Quarries three types of wedge were found (Price 2007, 96-7). One form was like Type 1 at Combe Down with a square end. The other two types both had their ends cut at angles to create rough points; one version narrowed at the top or striking end, the other did not narrow. The Whittington Quarry examples differed from Types 2 and 3 at Combe Down only in having rough points instead of rounded ends, but otherwise are comparable. It is probable that forms of wedge were very localised and would vary from one quarrying area to another.

INSERT Table 6 HERE

The Type 4 has a narrowed and chamfered top, but blade is square ended and slightly narrowed. It was only represented by a single example. Similarly Type 5 which was a very distinctive form was represented by a single example. The examples of both Types 4 and 5 are unphased and it seems likely that they were not in widespread use at Combe Down. Cat. No. 43 is a leaf-shaped wedge, and appears to be the only surviving example.

Catalogue of wedges

(illustrated)

Type 1 wedges

- 30 **Wedge Type 1**, parallel-sided blade, straight edge and heavily burred head with L: 210 mm; W: 70 mm. Sf 917, Mine area 2350, Stub O37 Set 73. Phase 1. [ID 450]
- 31 **Wedge Type 1**, with parallel-side blade of rectangular section (W: 57 mm), and square edge. The head is heavily battered. L: 185 mm; W: 70 mm. Sf 333, Mine area 2354, pillar 5137. Phase 3 or 4. [ID 161]

Type 2 wedges

- 32 **Wedge Type 2**, , complete, with round end. Fe. L: 197 mm; W: 80 mm Sf 377, Mine area 2349, pillar 728. Phase 1. [ID 200]
- 33 **Wedge Type 2**, complete, with round end. Fe. L: 190 mm; W: 82 mm. Sf 378, Mine area 2349, pillar 728. Phase 1. [ID 208]
- 34 **Wedge Type 2**, complete, with round end. Fe. L: 217 mm; W: 80 mm. Sf 851, Mine area 2369, Stub 037 Set 25, context 12085. Phase 2. [ID 392]
- 35 **Wedge Type 2**, complete, with round end. Fe. L: 217 mm; W: 83 mm. Sf 623, Mine area 2217, Stub C15, context 1200. Phase 4 or 5. [ID 478]
- 36 **Wedge Type 2**, complete, with round end. Fe. L: 213 mm; W: 80 mm. Sf 385, Mine area 2366?, context 9018. Phase 4 or 5? [ID 210]

Type 3 wedges

- 37 **Wedge Type 3**, large and complete, with round end. Narrows to head. Fe. L: 352 mm; W: 70 mm. Sf 373, Mine area 2337, context 4235. Phase 4. [ID 184]
- 38 **Wedge Type 3**, large with round end; narrowed and chamfered to head. Head is split. Fe. L: 234 mm; W: 60 mm. Sf 621, Mine area 2330, Stub K20 (N), context 2325, Phase 3 or 4. [ID 372]
- 39 **Wedge Type 3**, large with slightly tapered blade, round end; Narrowed and chamfered at the top below battered head. Fe. L: 363 mm; W: 83 mm. Sf 530, Mine area 514 or 2221, Phase 3 or 4. [ID 251]
- 40 **Wedge Type 3**, large with round end, and narrowed with chamfer to head. Fe. L: 345 mm; W: 75 mm. Sf 898, Mine area 2201 or 2367 tipping waste? Stub D34a. Phase 3 or later. [ID 447]

Type 4 wedge

- 41 **Wedge Type 4**, complete but cracked across its width and bent near its end. Narrows to the head and the end. L: 233 mm; W: 70 mm. Sf 338, context 5155. Unphased. [ID 151]

Type 5 wedge

- 42 **Wedge Type 5**. Broad short wedge, asymmetrical in section, narrowed to head, with chamfers on one face. Blade tapers strongly to the end. Fe. L: 133 mm; W: 51 mm. Sf 170, unstratified., Unphased. [ID 12]

Leaf-shaped wedge

43 **Wedge**, leaf-shaped. Fe. L: 170 mm; W: 65 mm. Sf 353, Mine area 2339 or 2338, Context 726. Phase 2 / ? [ID 171]

Chips

Chips were by far the most common find, with 168 examples being recovered. They are remarkably uniform in appearance, probably because they are very plain and simple in form. Many of the chips are broken, the majority of them being split down the middle, which means that the overall length of many of the chips can be measured. Only 59 chips of the 168 chips recovered are complete. However, because most of the broken chips were split lengthways the lengths of 117 can be measured. The full widths of only 79 chips that can be measured. The measurements show that there is variation in length: the longest example measures 170 mm, and the shortest 95 mm (Table 7). The average length is 132.6 mm and the majority of measured chips (n = 87) are between 120 mm and 140 mm long, 23 measure between 142 mm and 170 mm, and just 7 examples are between 95 mm and 118 mm long. In width the chips range from 55 mm to 98 mm. The average width is 78.3 mm, and most (n = 71) fall within the 66 mm to 86 mm range, with only 2 measuring between 55 and 57 mm and 6 between 90 and 98 mm. Chips are predominantly found in Phases 3 to 4 or 5. There are few examples from Phases 1- 2, and small number from Phase 2 or 3. Again there are few examples from Phases 5 and 6 which is perhaps a little surprising. Nearly half the examples are either unphased or are of uncertain phasing.

Table 7: Distribution of chips by Phase

Phase	Count
1	4
2	0
2?	2
2 or 3	2
2 or 3?	2
3	14
3 or 4	11
4	0
4 or 5	41
5	3
6	6
post-quarry	1
unphased	82
Total	168

INSERT Table 8 Chip Lengths

INSERT Table 9 Chip Widths

Catalogue of chips

(illustrated)

- 44 **Chip**, complete. Fe.L: 123 mm; W: 80 mm; Th: 14 mm. Sf 741, Mine area 910, Stub S8, Context 197. Phase 1. [ID 390]
- 45 **Chip**, complete. Fe. L: 142 mm; W: 80 mm; Th: 11 mm. Sf 75, Mine area 506, Context 303. Phase 2 or 3. [ID 30]
- 46 **Chip**, complete. Fe. L: 142 mm; W: 80 mm; Th: 13 mm. Sf 152 Mine area 509, pillar ledge Context 478. Phase 3. [ID 70]
- 47 **Chip**, complete. Fe. L: 125 mm; W: 71 mm; . Th: 10 mm. Sf 151, Mine area 509, pillar ledge, Context 478. Phase 3. [ID 71]
- 48 **Chip**, complete. Fe. L: 116 mm; W: 67 mm; Th: 10 mm. Sf 619, Mine area 2359, Stub 015, Context 12036. Phase 3 or 4. [ID 370]
- 49 **Chip**, complete. Fe. L: 143 mm; W: 67 mm; Th: 13 mm. Sf 625, Mine area 2359, Stub 010, Context 12037. Phase 3 or 4. [ID 373]
- 50 **Chip**, complete. Fe. L: 155 mm; W: 84 mm; Th: 10 mm. Sf 821, Mine area 2330, Stub K23. Phase 3 or 4. [ID 409]
- 51 **Chip**, complete. Fe. L: 124 mm; W: 78 mm; Th: 12 mm. Sf 455, Mine area 2337. Phase 4. [ID 228]
- 52 **Chip**, complete. Fe. L: 123 mm; W: 76 mm; Th: 12 mm. Sf 455, Mine area 2337. Phase 4. [ID 229]
- 53 **Chip**, complete. Fe. L: 129 mm; W: 80 mm; Th: 11 mm. Sf 817, Mine area 2360, Stub 010, Context 162. Phase 4 or 5. [ID 406]
- 54 **Chip**, complete. Fe. L: 133 mm; W: 84 mm; Th: 14 mm. Sf 818, Mine area 2360, Stub 010. Phase 4 or 5. [ID 407]
- 55 **Chip**, complete. Fe. Two splits, one near each side of the blade. There is also an incipient crack at the rounded end. L: 137 mm; W: 109 mm; Th: 10 mm. Sf 284, Mine area 2372, Shaft Road Quarry u/s. Phase 6. [ID 137]

Sledgehammers

A small number of large sledge hammers have been found. These were presumably used amongst other things to drive wedges when splitting stone. Five complete large hammer heads (Cat. Nos 56-58 & 60-61) were found, one fragment of a large hammer head with a circular eye (Cat. No. 62) and one smaller sledge hammer (Cat. No 59)

Catalogue of sledgehammers

(illustrated)

- 56 **Sledgehammer head**, with small circular eye and body tapered to a narrow striking face. Fe. L: 170 mm; W: 85 x 76 mm. Sf 574, Mine area 507, Stub R8. Phase 2 or 3. [ID 303]
- 57 **Sledgehammer head** with circular eye and body tapered to a narrow striking face. Fe. L: 168 mm; W 86 x 85 mm. Sf 624, Mine area 2359, Stub O10. Phase 3 or 4. [ID 462]

- 58 **Sledgehammer head** with circular eye and broad striking face. Fe. L: 168 mm; W: 88 x 76 mm. Sf 807, Mine area 917 tipping? Stub R8. Unphased. [ID 487]
- 59 **Small sledge hammer head**, oval eye. Fe. L: 165 mm; W: 57 mm. Sf 93, post quarrying from Shaft 4031 (G2 supply shaft, context 4034. [ID 42]
- (not illustrated)
- 60 **Sledgehammer head**, with body tapering to a narrow striking face. Fe. L: 154 mm; W: 80 x 60 mm. Sf 771, unlocated. Unphased. [ID 489]
- 61 **Sledge hammer head**, incomplete. With circular eye and body tapering to a narrow striking face. Fe. L extant: 122 mm; W: 83 x 75 mm. Sf 341, Context 4147 or probably 4177. Unphased. [ID 170]
- 62 **Sledge hammer head**, fragment split from the top of the head with part of circular eye visible. Fe. H extant: 70 mm; W: 84 mm. Mine area 503 tipping? Stub S19. Sf 824. Unphased. [ID 413]

Scappling axes

Scappling axes were distinctive large double bladed axes used for trimming and tidying stone blocks prior to sale (Pollard 1994, 36, 64 & drawing 53). Several complete examples have been recovered from Combe Down. One scappling axe fragment came from a Phase 3 or 4 location (Cat. No. 66), but most examples were from areas dated to Phase 4 or 5 (Cat. Nos 64-65, 67).

Catalogue of Scappling axes

(illustrated)

- 63 **Scappling axe head**, complete, with narrow elongated eye. Fe. L: 285 mm; W: 105 mm. Sf 464 post Context 12030 quarrying debris from shaft 12031, post-quarry. [ID 248]
- 64 **Scappling axe head**, complete, with part of handle in situ. Fe. L: 314 mm; W: 125 mm. Sf 614 Mine area 2365, Stub M14, Context 11022 Phase 4 or 5 [ID 476]

(not illustrated)

- 65 **Scappling axe head**, complete. Broken into two pieces. Fe. L: 295 mm; W: 113 mm. Sf 531 Mine area 2365, Phase 4 or 5 [ID 273]
- 66 **Scappling axe** blade edge fragment. Fe. W: 105 mm. Sf 545 Mine area 2359, Stub O5 Road 12 Phase 3 or 4 [ID 275]
- 67 **Scappling axe head**, one corner missing. Fe. L: 284 mm; W: 117 mm. Sf 684 Mine area 2360, Stub O24, Context 12044 Phase 4 or 5 [ID 378]

Chisels

A number of chisels and related tools have been recovered. Some are clearly Masons' tools (see Cat. Nos. 100-106 below), others cannot be assigned to specific functions (see Cat. Nos 77-84 below). However the three chisels catalogued here were probably used in the mining process whether for cutting wedge holes or dovetail holes for Lewises. Cat. No. 68 is in some

wayd comparable to a gouge illustrated by Pollard (1994, 64, drawing 51) and described as a ‘masons gouge’.

Catalogue of chisels

(illustrated)

- 68 **Chisel**, complete. Fe. L: 286 mm; W: 20 mm. Sf 510, Post Quarrying debris from well 6100 clean-out, Stub E4. Post-quarry. [ID 255]
- 69 **Chisel** with circular section stem and tapered chisel edge. Battered head. Fe. L: 334 mm; W: 32 m. Sf 575, Mine area 518, Pillar 185. Phase 6. [ID 421]

(not illustrated)

- 70 **Chisel stem** fragment, square section stem with chamfered corners, battered head. Fe. L: 108 mm. Sf 867, Mine area 2201 tipping, Stub D31 set 22. Unphased. [ID 427]

Crow bars and pinch bars

Crow bars and pinch bars were used to lever and manoeuvre blocks. Pinch bars had angled ends to facilitate the lifting of blocks. The examples found t Combe Down came from a possible Phase 3 location (Cat. No. 74), from locations of Phase 3 or 4 (Cat. No. 72) and Phase 4 or 5 (Cat. No. 71).

Catalogue of crow bars and pinch bars

(illustrated)

- 71 **Crowbar** with slightly splayed chisel end and stem of square section with chamfered corners, changing to a tapering circular section stem away from the chisel end. Flat battered end. Fe. L: 1240 mm. Sf 648, Mine area 2360 [May change], Stub O9A set 92, context 12047. Phase 4 or 5. [ID 358]
- 72 **Pinch bar** of square section with chamfered corners. One end has a narrow angled chisel edge, the other end is flat, slightly angled and battered. Fe. L: 1170 mm. Sf 561 Mine area 2359, Stub O7 Road 12, context 12011. Phase 3 or 4. [ID 357]
- 73 **Pinch bar**. Fe. L: 0 mm; W: 0 mm. Sf 764, Mine area 508. Unphased. [ID 582]

(not illustrated)

- 74 Tip of **crow bar**. Fe. L extant: 76 mm; W: 28 mm. Sf 162, Mine area 2201?, context 1018. Phase 3? [ID 11]
- 75 **Crow bar**, broken. Square section with chamfered corners (27 x 27 mm). Fe. L extant: 267 mm; W: 27 mm. Sf 497. Unphased. [ID 244]
- 76 Tip of **pinch bar**. Fe. L extant: 156 mm; W: 65 mm. Sf 770, Foxhill MOD. Unphased. [ID 482]

Other stone working tools

Tools in this category comprise mainly chisels and punches that were probably used for working stone but which cannot be assigned to a specific purpose or function in the mining process. Some of the tools (eg. Cat. Nos 78-80, 82-83, 85-86) are short and are unlikely to be used to cut wedge holes and the like during mining. The most likely use for these tools is for

general trimming, cleaning and preparing stone surfaces. Some may have been employed by masons. Some of the tools are from unphased locations (Cat Nos 78, 83-85), or locations which cannot be closely phased (Cat. No. 79). Otherwise they are from Phase 3 (Cat. No. 77) Phase 3 or later (Cat. No. 81), Phase 3 or 4 (Cat. Nos 80, 87), or Phase 4 or 5 (Cat. Nos 82, 86, 88).

Catalogue of other stone working tools

(illustrated)

- 77 **Chisel** of rectangular cross-section. Fe. L: 209 mm; W: 47 mm. Sf 149, Mine area 509, Context 472. Phase 3. [ID 9]
- 78 **Small chisel** with circular section stem flattened towards blade, which is now in large part lost. Battered head. Fe. L: 108 mm. Sf 313, Mine area 210, u/s. Unphased. [ID 203]
- 79 Tapering **chisel** or **punch**, complete. Has constriction below flat head. Fe. L: 127 mm; W: 62 mm. Sf 861, Mine area 502 or 503, Stub S19, Context 258. Phase 1 / 3 or 4. [ID 425]
- 80 Tapering **chisel** or **punch**, complete. Fe. L: 163 mm; W: 66 mm. Sf 539, Mine area 2355, Stub I 4. Phase 3 or 4. [ID 277]
- 81 Square section **chisel** or **punch**, with tapering point. Fe. L: 248 mm. Sf 760, Springfield Quarry Mine area 2374. Phase 3+. [ID 481]
- 82 Square section **chisel** or **punch**, narrow chisel point. Fe. L: 145 mm; W: 51 mm. Sf 240, Mine area 2215, Context 1156=1158, Phase 4 or 5. [ID 107]
- 83 Tapering square section **chisel** or **punch**, with burred head. Fe. L: 188 mm; W: 52 mm. Sf 180, Mine area 2218, Context 1072. Unphased? [ID 91]
- 84 Square section **chisel** or **punch**, with tapering point. Fe. L: 215 mm; W: 77 mm. Sf 958, Springfield Quarry Mine, Context 17002. Unphased. [ID 494]
- 85 Small square section **punch**, with short point. Fe. L: 180 mm; W: 36 mm. Sf 185, Mine area 512, u/s. Unphased? [ID 85]
- 86 Small **punch** of square section with tapered point and narrowed to the batter head. Central section square with chamfered corners. Fe. L: 125 mm; W: 25 mm. Sf 724, Mine area 2360, Context 12044. Phase 4 or 5. [ID 329]

(not illustrated)

- 87 Small **wedge** with rounded blade. Fe. L: 50 mm; W: 24 mm. Sf 929, Mine area 2351. Phase 3 or 4. [ID 459]
- 88 Wedge or gad, with tapering blade and rounded edge. Fe. L: 185 mm. Sf 622. Mine area 2360, Stub N6 Set 46, Context 5348. Phase 4 or 5. [ID 477]

‘Spoke shaves’

There are eleven tools which cannot be confidently identified. They comprise a small central blade of U-section with tapering pointed arms extending out at each end. In some cases one of the tapering arms ends in a right angle bend. The purpose of these objects is unclear, but the fact that there are 11 examples suggests that they had some role in the quarrying process. Examples have been recovered from Phase 2 locations (Cat. Nos 89, 92), a Phase 3 location

(Cat. No. 93), from a Phase 4 area (Cat. No. 94) and from Phase 4 or 5 areas (Cat. No. 90, 95-97). Other examples (Cat. Nos 91, 98-99) are unphased. None of these objects appears to be from a Phase 6 location.

It seems unlikely that these tools were used on stone, and much more probable that they used to work wood. The fact that some at least of the objects had one bent arm suggest that they were used in conjunction with a horse or bench, with the bent end hooked into a staple or eye to allow the tool to be used with one hand. The free hand could then hold whatever was being worked. If this interpretation is correct then the tools would resemble clogging irons in their manner of use at least.

Catalogue of 'spoke shaves'

(illustrated)

- 89 'Spoke shave', with U-section central blade. Tapering pointed arms, one with right angle bend at the end. Fe. L: 320 mm; Sf 870, Mine area 2369, Stub D29 Set (7) LH side. Phase 2. [ID 430]
- 90 'Spoke shave'; with central blade (L: 130 mm) of U-section. Both arms complete, tapering to points. Fe. L: 354 mm; W: 28 mm. Sf 526, Mine area 2363, Road 5. Phase 4 or 5. [ID 266]
- 91 'Spoke shave' with U-cross section blade. Tapering circular section arms, one bent at the end. Fe. L: 371 mm; W: 31 mm. Sf 654, Mine area 910 tipping, Stub S3. Unphased. [ID 321]

(not illustrated)

- 92 'Spoke shave', with U-section blade in centre. One arm incomplete. Fe. L: 250 mm. Sf 874, Mine area 2369, Stub 038 set (25). Phase 2. [ID 431]
- 93 'Spoke shave', with central blade (L: 70 mm) of U-section. Both arms of circular section are extant. One arm bent is at a right angle at the end. Fe. L: 284 mm; W: 33 mm. Sf 525, Mine area 2203, D12 Stub Road, Context 2133. Phase 3. [ID 265]
- 94 Incomplete 'spoke shave' with curved cross section blade. Fe. L: 255 mm; W: 31 mm. Sf 88, Mine area 508, Context 333. Phase 4. [ID 38]
- 95 'Spoke shave', with blade (L extant: 97 mm) of U-section. One arm missing. Fe. L: 225 mm; W: 35 mm. Sf 527, Mine area 2363, Road 5. Phase 4 or 5. [ID 269]
- 96 'Spoke shave', with U-section blade, tapering circular section arms, one bent at a right at the end. Fe. L: 270 mm. Sf 808, Mine area 510, Stub P11. Phase 4 or 5. [ID 405]
- 97 'Spoke shave', with U-section central blade, long tapering arms, one with a right angle bend at the end. Fe. L: 358 mm. Sf 647, Mine area 2363, Stub N9. Phase 4 or 5. [ID 422]
- 98 'Spoke shave' with central blade of shallow U-section. One extant arm. Fe. L: 245 mm; W: 24 mm. Sf 462, Unlocated. Unphased. [ID 233]
- 99 'Spoke shave', with long tapering pointed ends and small strongly concave central blade. Fe. L: 348 mm; W: 25 mm. Sf 1063, derived from tipping from Mine area 2211, Context 5143, u/s. Unphased. [ID 84]

MASON'S TOOLS

A small number of masons' tools have been identified. The presence of these tools in the mine workings together with worked pieces of stone suggests that some working of stone

took place within the quarries. Of course, it may just be that damaged or incomplete worked stone elements and some mason's tools were simply discarded in old workings.

The tools identified comprise chisels (Cat. Nos 100-106) and masons' combs or drags (Cat. Nos 107-117). There is also a folding metal rule which could have been used by masons or by others (Cat. No.118)

Chisels

The chisels and gouges are all tanged and had wooden handle originally. These particular tools would have been used for fine detail work rather than heavy shaping and roughing out. The chisels are not dissimilar to carpenters tools.

Drags or combs

The drags vary in shape from semicircular to elongated with straight backs and curved ends, All could have been cut from old saw blades. The combs were dragged across the face of ashlar to give them a uniform finish. Bath stone, especially while still 'green', was soft enough to finish in this manner.

Catalogue of mason's tools

Chisels

(illustrated)

- 100 **Tanged chisel** with flat rectangular section blade splayed towards the narrow blade. Edge of blade missing. Fe. L: 210 mm; W: 19 mm. Sf 896, Mine area 504 tipping (probable) Stub S17 Set (4). Unphased. [ID 445]
- 101 **Tanged chisel** with flat rectangular section blade splayed towards the blade. Tang is largely missing. Fe. L: 140 mm; W: 28 mm. Sf 897, Mine area 911, Stub T21, Context 788. Phase 1. [ID 446]
- 102 **Tanged chisel** with wide blade flares from a narrow stem of circular section. It has marked thin circular section bolster. The blade is 153 mm long. Fe. L: 205 mm; W: 38 mm. Sf 918, Mine area 2350, Stub K30 Set (118). Phase 1. [ID 451]
- 103 **Tanged chisel** or **gouge** with narrow blade of curved section. Part of the wooden handle survives. Fe. L: 207 mm. Sf 466, Mine area 2358 tipping, Context 12006. Unphased. [ID 236]
- 104 **Tanged chisel** or **gouge** with flat subrectangular bolster and blade of curved section. Fe. L: 167 mm; W: 25 mm. Sf 511, Post Quarrying debris from well 6100 clean-out, Stub E4. Post-quarry. [ID 256]
- 105 **Tanged chisel** or **gouge**, with wide blade of curved section. Fe. L: 222 mm; W: 55 mm. Sf 651, Mine area 910 tipping, Stub S3. Unphased. [ID 423]

(not illustrated)

- 106 **Tanged chisel** with broad flat blade. Fe. L: 185 mm; W: 49 mm. Sf 112, Mine area 518 tipping, Context 366. Unphased. [ID 62]

Masons' drags or combs

(illustrated)

- 107 **Mason's drag**, semicircular. Has c 19 teeth per 100m or 4.5 teeth per inch. Fe. L: 214 mm;. W: 124 mm. Sf 572, Mine area 507? Stub R8. Phase 2 or 3? [ID 296]
- 108 **Mason's drag**, complete. Fe. L: 190 mm; W: 116 mm. Sf 113, Mine area 518 tipping, Context 366. Unphased. [ID 56]
- 109 **Mason's drag**, with c 19 teeth per 100 mm, or 5 teeth per inch. Has straight back and curved ends. Fe. L: 224 mm; W: 125 mm. Sf 457, Mine area 2362. Phase 4 or 5. [ID 215]
- 110 **Mason's drag** with 14 teeth per 100mm, or 4 teeth per inch. Has curved ends and notched back. Fe. L: 206 mm; W: 107 mm. Sf 483, area of unidentified quarrying. Unphased. [ID 245]
- 111 **Mason's drag**, with 19.5 teeth per 100 mm, or 5 per inch. Has slightly irregular curved back. Fe. L: 217 mm; W: 123 mm. Sf 1066, Mine area 2360, Stub N11. Phase 3 or 4. [ID 391]
- 112 **Mason's drag** with 19.5 teeth per 100mm, or 5.5 per inch. Has almost straight back. Fe. L: 204 mm; W: 78 mm. Sf 431, Mine area 2362 tipping, u/s. Unphased. [ID 214]
- 113 **Mason's drag**, with 24 teeth per 100 m, or 6 teeth per inch. Has notches on back. Fe. L: 230 mm; W: 65 mm. Sf 546, Mine area 2366 Stub J 13. Phase 4 or 5. [ID 420]

(not illustrated)

- 114 **Mason's drag** with 26 teeth per 100m or 7 teeth per inch.. Has almost straight slightly angled back. Fe. L: 215 mm; W: 125 mm. Sf 483, area of unidentified quarrying. Unphased. [ID 246]
- 115 **Mason's drag** with c 17 teeth per 100 mm; or c 4 teeth per inch. Has an asymmetrical in outline. Fe. L: 229 mm; W: 123 mm. Sf 922, Mine area 2350, Stub O42 Set (122). Phase 1. [ID 454]
- 116 **Mason's drag** with c 30 teeth per 100m; 6.5 teeth per inch. Has straight back and curved ends. Fe. L: 186 mm; W: 56 mm. Sf 617, Mine area 2330, Stub K 20 (south). Phase 3 or 4. [ID 309]
- 117 **Mason's drag** with c 18 teeth per 100 mm or 4.5 teeth per inch. Has irregularly curved back. Fe. L: 193 mm; W: 88 mm. Sf 594, Mine area 2360, Stub N5 Road 5. Phase 4 or 5. [ID 306]

Folding rule

- 118 **Folding rule**, with 2 arms measuring 296 mm and 316 mm respectively. Marked in inches and 1/8 of inches. Cu alloy. L: 598 mm; W: 20 mm. Sf 83, Mine area 518, Context 351. Phase 6. [ID 36]

TRANSPORT

Anchorage pegs

There are two anchorage pegs from mine area 2202. These would have been used like tent pegs to secure or anchor during the moving and lifting of stone.

Catalogue of anchorage pegs

(illustrated)

- 119 **Anchorage pegs**, x 2.. Circular section stems, long tapering square section points and small T-shaped heads. One is slightly bent. Fe. L: 278 mm; W: 47 m. Sf 543, Mine area 2202, pillar 3013. Phase 5. [ID 278]

Wheelbarrows

A number of fragments of wheel barrows were found and also a complete barrow (Cat. No. 120).

Catalogue of wheelbarrows

- 120 **Wheelbarrow** found in situ. Parts recovered: (1) the barrow wheel had a wooden felloe and a one-piece tire, worn on the outer edges, with four equally spaced nails. D: 460 x 465 mm; W of tire 40/42 mm. (2) Remains of wooden axle block with iron stub axles and iron collars at each end, One end of the block, the stub axle is attached to an iron strip by means of a rolled over loop at one end, through which axle passes. The strip has 5 nail holes. Iron axle L: 340 mm; Iron strip L: 355 mm. (3) 2 x reinforcing rods with wood attached. Cross pieces for barrow body. L of rods: 620 mm & 500 mm. (4) 2 x short lengths of timber of rectangular cross section, from the barrow body. Sf 529, 2330 tipping, Context 2305, Stub K3. Unphased. [IDs 587-591]
- 121 **Wheelbarrow wheel**, comprising apparently solid wooden wheel with iron tire in 4 sections. The tire fragments are in situ and nailed to the circumference of the wooden wheel. Much of wood rotted away. No evidence of axle mount. Tire sections are of different lengths. D: 460 mm; W of tire: 53 mm. Sf 435, Mine area 2362, u/s. Phase 4 or 5. [ID 550]
- 122 **Wheelbarrow wheel**. One- piece iron tire, with 3 extant nails, from a wooden wheel. Narrow tire. Two sections of the wooden wheel survive against the tire. Probably not a solid wheel. The iron axle is secured by metal plates and pegs to wooden spokes. There appear to be 4 spokes.. D of wheel: 460 mm; W of tire: 29 mm; L: 270 mm; L of axle: 195 mm. Sf 449, Mine area 2357. Phase 4 or 5. [ID 552 & 553]
- 123 **Wheelbarrow wheel and axle**. The wheel appears to be solid wood with a 4-piece iron tire. Wooden axle bar with iron nave bands and iron stub axles. One axle and nave band detached, one set in place. Exactly how the axle and wheel [ID 551] fitted together is uncertain. D of wheel: c 440 mm; W of tire 50 mm; L of axle and axle block: 262 mm; W of axle block: 90 mm. Sf 659, Mine area 2351 tipping, Stub K29, Context 12050. Unphased. [ID 551 & 554]
- 124 **Wheelbarrow wheel** with narrow solid iron felloe 4 iron spokes and an iron axle. Remains of timber barrow frame attached to one end of the axle. D: 453 mm. Sf 1027, Foxhill, Mine area 2383, Road 1 set 35 [label reads Road 2] [ID 583]
- (not illustrated)
- 125 **Wheelbarrow wheel**. Two tire sections with nails. Possibly the missing sections from ID 551, although tire widths differ. Fe. L: 325 mm; Tire W: 55 mm. Sf 659, Mine area 2351 tipping, Stub K29, Context 12050. Unphased. [ID 555]
- 126 **Wheelbarrow wheel**, 2 x tire sections with nails and wood fragments. Possibly from solid wood wheel. Fe. L of longest tire section: 400 mm; W of tire: 50 mm. Sf 601, Mine area prob 2358 tipping, recovered from 2352, Road 12 Stub 02 Set 263. Unphased. [ID 556]
- 127 **Wheelbarrow wheel**, one-piece tire, slightly bent, with four equally spaced nails. Fe. D: 515 x 402 mm; W of tire: 26/27 mm. Sf 1028, Foxhill, Mine area 2380, Road 1 set 84, Unphased. [ID 586]

Horse transport

Catalogue of items of horse transport

(illustrated)

- 128 **Bridle bit** with hinged two-piece mouth bar with S-shaped side bars. Fe. L: 190 mm; 128 mm. Sf 519, surface debris from Quarryman's Court, Stub E4. Unphased. [ID 254]
- 129 **Large horseshoe** somewhat encrusted. No visible nails or nail holes. One heel is a thickened to form a calkin. The toe is turned up. Fe. L: 160 mm; W: 156 mm. Sf 200, Mine area 2217, Context 1079. Phase 4 or 5. [ID 124]

- 130 **Horseshoe** with broad branches, fullering and square heels. Somewhat encrusted, only 2 nail holes visible. Fe. L: 133 mm; W: 132 mm. Sf 463, Mine area 2363 extraction or 2358 tipping, Context 12004. **Phase 4 or 5 / ...** [ID 235]
- 131 **Horseshoe** with broad branches, one ends in a calkin. Somewhat encrusted. Cluster of 3 close set nails survives near the toe. Fe. L: 140 mm; W: 134 mm. Sf 603, Mine area 2330 tipping, Stub K 20 south. Unphased. [ID 314]
- (not illustrated)
- 132 **Horseshoe**, with tapering branches. The complete branch ends in a rounded point. Possible fullering and 6 extant nail holes. Fe. L: 125 mm; 130 mm. Sf 777, Mine area 910, Stub S4, Context 1266. Phase 1.[ID 380]
- 133 **Horseshoe** with heavy upset calkins. Heavily encrusted. Fe. L: 156 mm; W: 150 mm. Sf 67, Mine area prob 506/507, probably from Cartway 65 haulage, Context 280. Phase 2 or 3? [ID 28]
- 134 **Horseshoe** fragment comprising single branch with pointed heel an slight thickening to form a possible calkin. Fe. L: 133 mm. Sf 70, Mine area prob 506/507 probably from Cartway 65 haulage, Context 280. Phase 2 or 3? [ID 29]
- 135 **Horseshoe** with broad slightly tapered branches, and trace of fullering. 2 visible nail holes. Fe. L: 150 mm; W: 157 mm. Sf 491, Mine area 2221, Context 14003. Phase 3 or 4. [ID 247]
- 136 **Horseshoe** fragment,comprising single branch with square heel and calkin. Two visible nails/nail holes. Fe. L: 178 mm; W: 129 mm. Sf 799, post quarrying debris from shaft 12072. Post-quarry. [ID 398]
- 137 **Horseshoe** fragment comprising single broad branch with fullering and slight thin upset calkin. Fe. L: 136 mm. Sf 371, Mine area 2355 cartway, u/s. Unphased. [ID 167]
- 138 **Horseshoe** fragment comprising single broad branch, tapering to a narrow heel with upset calkin at heel. There two visible nails and fullering. Fe. L: 148 mm. Sf 595, Mine area 2362 tipping, Road 12 Stub O9, Context 12021. Unphased. [ID 308]

Railway finds

Catalogue of railway finds

Rails

(not illustrated)

- 139 **Length of rail** of small size. Fe. L: 2510 mm; H of rail: 45 mm; W of base of rail: 40 mm; W of top of rail 22 mm. Sf 1025, Foxhill, Road 1.13 set 9. Phase 6. [ID 584]
- 140 **Length of rail** of small size. Rail is bent at almost a right angle. Fe. L: 1720 mm; H of rail: 45 mm; W of base of rail: 40 mm; W of top of rail 22 mm. Sf 970, Foxhill, Road 2B set 17. Phase 6. [ID 585]

Other railway finds

(illustrated)

- 141 **Brake lever** from mine wagon. Fe. L: 1206 mm., Sf 981, Foxhill, Mine area 2383, Road 2 Set (17). Phase 6. [ID 540]
- 142 **Cart handle**, comprising loop handle formed from thick rod. Fe. L extant: 186 mm; W: 133 mm. Sf 582, Mine area 2217, Stub C15, Context 1180. Phase 4 or 5. [ID 304]
- 143 **Rail spike**. L shaped with rectangular section stem tapering to a point. Fe. L: 116 mm. Sf 36, Byfield, Mine area 518, Context 109. Phase 6. [ID 570]
- 144 **Rail spike**. L shaped, circular section stem changing to square section and tapering to a point. Fe. L: 94 mm. Sf 38, Byfield, Mine area 518, Context 109. Phase 6. [ID 572]
- 145 **Rail spike**, L-shaped. Fe. L: 119 mm. Sf 983, Foxhill, Mine area 2383, Road 2c Pillar. Phase 6. [ID 504]

- 146 **Rail spike.**L-shaped. Fe. L: 146 mm. Sf 1000, Foxhill, Mine area 2383, Road 1a Set (11) pillar recess. Phase 6. [ID 513]
- 147 **Large rail spike**, rectangular section stem with flattened point, and large flat head. Fe. L: 150 mm. Sf 984, Foxhill mine area 2383, Road 2 Set (3) pillar recess. Phase 6. [ID 505]
- 148 **Large rail spike**, rectangular section stem with flattened chisel point, and large flat head. Fe. L: 148 mm. Sf 985, Foxhill mine area 2383, Road 1. 13 Set (17). Phase 6. [ID 506]
- (not illustrated)
- 149 **Rail spike.** L shaped, somewhat encrusted. Fe. L: 102 mm. Sf 37, Byfield, Mine area 518, Context 109. Phase 6. [ID 571]
- 150 **Rail spike.** L-shaped, incomplete. Fe. L: 72 mm. Sf 980, Foxhill, Mine area 2383, Road 2 Set (15), Context 19000. Phase 6. [ID 502]
- 151 **Rail spike.** L-shaped. Fe. L: 102 mm. Sf 1018, Foxhill, Mine area 2380 or 2383, Road 1 Set (23). Phase 6. [ID 526]
- 152 **Large rail spike**, rectangular section stem with flattened chisel point, and large flat head. Fe. L: 147 mm. Sf 988, Foxhill mine area 2383, Road 1 Set (5) pillar ledge. Phase 6. [ID 507]
- 153 **Rail spike**, L-shaped, square cross section, with wood on stem. Fe. L: 100 mm. Sf 306, Shaft Road Quarry, Mine area 2372, Context 5007. Phase 6. [ID 204]
- 154 **Rail spike**, L-shaped with circular section stem. Fe. L: 95 mm. Sf 312, Shaft Road Quarry, Mine area 2372, Context 5007. Phase 6. [ID 205]
- 155 **Rail spike**, L-shaped with square section stem and ?chisel point. Fe. L: 103 mm. Sf 307, Shaft Road Quarry, Mine area 2372, Context 5007. Phase 6. [ID 206]
- 156 **Rail spike**, L-shaped. Fe. L: 94 mm. Sf 283, Shaft Road Quarry Mine area 2372, Context 5001. Phase 6. [ID 135]

Cranes and chains

Catalogue of cranes and chains

Cranes, chains and hooks

(illustrated)

- 157 **Collar or 'cock' from top of wooden crane.** Fe. L: 204 mm; W: 162 mm; Th: 40 mm. Sf 994, Foxhill, Mine area 2383, Road 1 Set (11) stratified in clay. Phase 6. [ID 510]
- 158 Part of a **large cast iron crane hook**, Fe. L: 185 mm. Sf 286, Shaft Road Quarry, Mine area 2372, Context 5001. Phase 6. [ID 140]
- 159 **Cast iron crane hook.** Fe. L: 188 mm; W: 112 mm. Sf 979, Foxhill, Mine area 2383, Road 2 Set (15), Context 19000. Phase 6. [ID 501]
- 160 **Crane hook** with attached length of chain with 6 extant links, comprising five shorter links (L: c 80 mm) and one longer link (L: 100 mm). Fe. Hook L: 210 mm; W: 135 mm. Sf 1029, Foxhill, Mine area 2380, Road. Phase 6. [ID 530]
- 161 **Cast hook** with 3 oval chain links attached. chain. The links range in length between 60 mm and 63 mm. Hook: L: 118 mm; W: 52 mm. Fe. L overall: 243 mm. Sf 475, 2363 extraction or 2358 tipping, Cartway, Context 12002. Phase 4 or 5 / ? [ID 237]
- 162 Length of **chain** with 35 oval links of variable size. At each end are larger links: L: 103 mm; W: 61 mm; L: 110mm; W: 59 mm. Smaller links range from 62 mm to 79 mm long; most around c 65 mm. Sf 542, Mine area 2202, pillar 3013. Phase 5. [ID 279]

- 163 Length of **chain** comprising 117 links. At 2 points there are lengths of curved rod attached to chain. L: 3045 mm. Sf 538, Mine area 2377. Phase 6. [ID 356]
- 164 **Riveted chain link**, complete. Fe. L: 103 mm. Sf 587, Mine area 2364, Road 11 Stub M20. Phase 4 or 5. [ID 302]
- (not illustrated)
- 165 Length of **chain** comprising 23 plain oval links; 22 measuring c. 75 mm long and 1 near middle measuring c 100 mm long. There are 10 smaller links, the larger link then 12 smaller links. Fe. Sf 996, Foxhill, Mine area 2383, Road 1.13 Set (10) on pillar ledge. Phase 6. [ID 535]
- 166 Length of **chain** comprising 14 oval links which vary between 73 mm x 34 mm and 52 mm x 28 mm in length and width. There is a possible hook fragment attached to to one link. Was SF 183. Fe. L: 440 mm. Sf 1064, Context 569. Unphased. [ID 90]
- 167 **Oval chain link**, incomplete. Fe. L: 100 mm. Sf 583, Mine area 2217, Stub C15, Context 1180. Phase 4 or 5. [ID 301]
- 168 **Oval chain link**, oval, fragment. Fe. L: 105 mm. Context 6095. Unphased. [ID 330]

Three-legged Lewises

(illustrated)

- 169 **Three-legged Lewis**, comprises hooked yoke, one side leg, the central leg and the connecting pin. Fe. Overall L: 614, Hook L: 320 mm. L: 614 mm; 186 mm. Sf 474, Mine area 2215, Context 1127. Phase 4 or 5. [ID 354]

(not illustrated)

- 170 **Three-legged Lewis**. Complete set of 3 legs, but no bolt or yoke. Fe. L: 228 mm; W overall: 116 mm. Sf 1026, Foxhill, Mine area 2382, Roof. Phase 6. [ID 532]
- 171 **Three-legged Lewis component**. Incomplete middle leg. tapered bar of rectangular section. Fe. L: 178 mm. Sf 548, Mine area 2202, Pillar P7 Stub D13. Phase 5. [ID 294]
- 172 **Three-legged Lewis component**. Middle leg. Fe. L: 240 mm. Sf 773, Foxhill, Mine area 2380 near shaft. Phase 6. [ID 490]
- 173 **Three-legged Lewis component**. Single leg. Fe. L: 327 mm. Unstratified. Unphased. [ID 343]
- 174 Possible **Lewis component**. Curve or hooked fitting with circular eye at one end. Fe. L: 208 mm; D of eye: 50 mm. Sf 548, Mine area 2202, Pillar P7 Stub D13. Phase 5. [ID 294]

Other tools

Catalogue of other tools

(illustrated)

- 175 **Shovel** with worn round mouth. It has two opposed strips forming the socket, which is secured by a single nail. Fe. L: 490 mm; W: 272 mm. Sf 437, Mine area 2379 localised quarry, Road 10 pillar ledge. Unphased. [ID 353]
- 176 **Shovel** with round mouth, worn. Socketed with stump of wooden handle. Fe. L: 410 mm; W extant: 225 mm. Sf 599, Mine area 2221 or 2222, Stub A26. Unphased. [ID 305]
- 177 **Shovel** with straight mouth, much worn. The handle is attached by a whittle and secured by a collar. Fe. L: 325 mm; W: 260 mm. Sf 432, Mine area 2362 tipping, u/s. Unphased. [ID 461]
- 178 **Hammer head** with circular eye. The head is tapered and beveled to its small striking faces. Fe L: 77 mm; W: 53 mm. Sf 864, Mine area 2368, Stub D31 Set (22). Phase 3. [ID 426]

179 **Handle or lever**, with solid handle, and rectangular section body. The portion latter is pierced with a single large hole, perhaps for a pivot. There is a small stout hook at one corner. Purpose uncertain. Fe. L: 302 mm; W: 71 mm. Sf 71, Mine area prob 506/507, probably from Cartway 65 haulage. Phase 2 or 3? [ID 27]

(not illustrated)

180 **Shovel** with round mouth and short solid socket. Fe. L: 418 mm; W: 280 mm. Sf 493, unlocated. Unphased. [ID 355]

181 **Shovel** with round mouth, much worn, with solid socket (D: 40mm). Fe. L: 302 mm; W: 228 mm. Sf 795, Mine area 2360, Context 12097. Phase 4 or 5. [ID 399]

182 **Shovel** fragment, comprising socket formed by two opposed strips and secured by two nails or rivets, and a bent and folded fragment of blade. Fe. L extant: 257 mm; Sf 29, Byfield Mine, u/s. Unphased. [ID 568]

183 **Coal shovel**, incomplete, with socket for wooden handle. Fe. L extant: 260 mm; W: 170 mm. Sf 612, Mine area 2330, Stub K 20 north, Context 2324. Phase 3 or 4. [ID 315]

184 Small socketed **fork head**, with 3 broad strongly curved tines that are almost half round in section. The extant socket is very short. Fe. .L: 258 mm; W: 158 mm. Sf 366, **NK (?)**, Context 5237. Unphased. [ID 186]

185 **Axe hammer**, with split socket secured by 2 rivets. Axe blade incomplete. Fe. L: 120 mm; W: 124 mm. Sf 97, post quarrying from Shaft 4031 (G2 supply shaft), Context 4034. Post-quarry. [ID 44]

186 **Pincers**, encrusted. Fe. L: 184 mm. Sf 98, post quarrying from Shaft 4031 (G2 supply shaft), Context 4034. Post-quarry. [ID 45]

187 **Flat file** of rectangular section. Fe. L: 269 mm. Sf 962, Freylings/Mt Pleasant Quarry, Mine area 2373, Context 18031. Phase 6. [ID 493]

188 **Carpenter's folding rule**, incomplete. One poorly preserved wooden arm, and copper alloy hinge. Cu alloy and wood. L: 207 mm; W: 40 mm. Sf 607, Mine area 2359, Road 12 Stub O10. Phase 3 or 4. [ID 464]

Household and personal

Household and personal items comprise items used by the miners such as the lamps (Table ; and Cat Nos 191-192, 202-204), water bottles (eg. Cat No. 189) and other vessels, tinder boxes (Cat Nos 198-199) and also penknives (Cat Nos 214-215) and items of clothing. A selection has been illustrated and these are catalogued below. The most common of these finds are small benzolene lamps which occur in some numbers and are were used in the last period. Before the introduction of benozolee lamps candles were used for lighting on the mines.

Catalogue of household and personal

(illustrated)

189 **Water bottle or flask** formed from thin sheet. Flat faced, slightly concave sides. Neck missing. H: 165 mm; W: 130 mm; Depth: 45 mm. Sf 600, Mine area 2364. Phase 4 or 5. [ID 313]

190 **Oil can**, tall of square cross section with handle and filler cap on top. Fe. Ht: 250 mm; 150 mm x 150 mm square. Sf 967, Foxhill, Mine area 2380, Road 26 Set (61). Phase 6. [ID 536]

- 191 **Small hand held oil lamp**, comprising sheet metal saucer with sloping sides and holding low cylindrical oil reservoir with domed lid. The lamp has a sheet metal loop handle. Fe. D of saucer: 104 mm; L with handle: 124 mm; Ht: 30 mm. Sf 448, unlocated. Unphased. [ID 465]
- 192 **Small tinware benzolene lamp**, with simple loop handle. Domed reservoir/body with slight moulding. The central hole lacks its threaded collar. Slightly recessed base, joined to body with a soldered and rolled seam. Fragment of cloth (wick?) inside reservoir. L: 110 mm; D: 98 mm; H: 42 mm. Sf 281, Shaft Road Quarry Mine area 2372, Context 5000. Phase 6. [ID 138]
- 193 **Small tinware benzolene lamp**, with simple domed reservoir/body. It has a plain threaded copper alloy collar to secure the burner, which is absent. The base, which bulges down, is joined by a rolled and soldered seam. D: 100 mm; H: 40 mm. Sf 282, Shaft Road Quarry Mine area 2372, Context 5001. Phase 6. [ID 139]
- 194 **Pocket knife**, open, but poorly preserved and laminated. L: 151 mm; Extant blade L: 78 mm. Sf 534, Mine area 2202. Phase 5. [ID 272]
- 195 Possible **grill or trivet with handle**. The handle forms a T-bar, and has pierced loop at the end. The cross piece of the T is bent down and is pierced with 6 holes with long rods or tines attached. Each end of the cross-piece terminates in a leg with 2 splayed feet. Fe. L: 260 mm; W: 155 mm. Sf 504, K6 Stub. Unphased. [ID 252]
- (not illustrated)
- 196 **Small bucket**, squashed completely flat. D: 185 mm. Sf 879, Mine area 2378 Stub 010 set (21). Unphased. [ID 435]
- 197 **Jug?** Tapering cylindrical vessel shaped to form a spout, with a lining or top? D: 90 mm; H: 82 mm. Sf 451, Unlocated. Unphased. [ID 419]
- 198 **Small tinplate pan** with tapering tubular handle squashed flat. L: 269 mm; W: 170 mm. Sf 23, Firs Field u/s. Unphased. [ID 567]
- 199 **Rectangular tinder box in copper alloy**. The lid is 60 mm long, that is about 3/4 of the length of the box. It is hinged to a fixed portion of the top. L: 79 mm; W: 42 mm; H: 17 mm. Sf 410, Unlocated. Unphased. [ID 188]
- 200 **Small decorative tinder box** with sliding lid and knurled knob or wheel on one side. Embossed on bottom: HENRY SCHLOSS then in LH column: PATENT GREAT ALIE ST GOODMANFIELD LONDON; and in the RH column: BREVETE S.G. DUMENT RUE CHAPON PARIS. L: 72 mm; W: 28 mm; H: 10 mm. Sf 56, Byfield, post quarrying Context 132. Post-quarry. [ID 558]
- 201 **Poker** with rounded knob and eroded shaft. Possibly smith's poker. Fe. L extant: 238 mm. Sf 759, Freytings/Mt Pleasant Quarry, Mine area 2373. Phase 6. [ID 480]
- 202 **Small tinware benzolene lamp**, with plain domed reservoir/body, with plain threaded collar, and slightly recessed base. Simple soldered and folded joint between base and body. D: 105 mm; H: 45 mm. Sf 291, Shaft Road Quarry Mine area 2372. Phase 6. [ID 141]
- 203 **Small tinware benzolene lamp**. The collar is flat with a slight step, and a central depression and hole for the burner. D: 95 mm; H: 40 mm. Sf 295, Shaft Road Quarry Mine area 2372 Context 5008. Phase 6. [ID 142]
- 204 **Small tinware benzolene lamp**. Has plain threaded collar, lacks burner. Recessed base. D: 84 mm; H: 38 mm. Sf 305, Shaft Road Quarry Mine area 2372, Context 5023. Phase 6. [ID 213]

Table 10: Distribution of Benzolene Lamps by Phase

Phase	Total
Phase 6	11
post-quarry	1
unphased	1
unassigned	1
Total	14

- 205 **Pocket knife**, small. Fe. L: 65 mm. Sf 127, Mine area 508 tipping, Context 449. Unphased. [ID 66]
- 206 **Pocket knife**, complete. The handle plates are decorated with a chevron pattern. L: 79 mm. Sf 161, Mine area 508 tipping Context 4137 Context 454. Unphased. [ID 81]
- 207 **Shoe buckle**, fragmentary. 18th-century. L: 63 mm; W: 46 mm. Sf 386, Mine area 2366? Context 9019. Phase 4 or 5? [ID 211]
- 208 **Heel iron**. L: 65 mm; W: 73 mm. Sf 476, Mine area 2363 extraction or 2358 tipping Context 12003. Phase 4 or 5. [ID 239]
- 209 **Heel iron** with fullering. 2 visible nail holes. L: 83 mm; W: 78 mm. Sf 626, Mine area 2360 Stub 09 Context 12035. Phase 4 or 5. [ID 317]
- 210 **Heel iron**, with thin bar joining outer ends. 9 nail holes, 7 visible. Non-ferrous alloy. L: 60 mm; W: 67 mm. Sf 730, Context 189. Unphased. [ID 387]

References

- Pollard, D, 1994 *Historical and archaeological assessment of the underground quarries now known as Firs Mine and Byfield Mine*, Private publication, Corsham 1994r
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