

EXCAVATIONS AT THE CABURN, 1938

BY A. E. WILSON, D.LITT., F.R.HIST.S.

At the end of the report on the 1937 excavations¹ it was announced that the Brighton and Hove Archaeological Society had decided to raise funds for a second season's work. With the generous support of private subscribers and the offer of help from numerous volunteer workers the sub-committee² was able to plan a fairly comprehensive excavation consisting of:

- (a) A series of cuttings near the gateway in the hope of dating more closely the stages of fortification.
- (b) An examination of the outer works to the northwest of the gateway.
- (c) The stripping of a small area near one of the pits excavated in 1925–6.
- (d) One long cutting through the southern defences.

The material obtained from these cuttings included such a large proportion of pottery differing from the normal Sussex Iron Age type that the committee decided to ask Mr. C. F. C. Hawkes, F.S.A., if he would review it in conjunction with the pottery found in 1925-6 and that recently recovered by Mr. Field from Castle Hill, Newhaven. Mr. Hawkes not only willingly assented, but carried his study even farther to produce the important papers which are printed elsewhere in this volume. For the zeal which he showed in this extensive call on his scanty leisure I welcome this opportunity of expressing to him my most sincere thanks and gratitude. It remains for me to describe as shortly as possible the actual excavations and to give the general conclusions which arise from his detailed study. The figures illustrating this article are numbered I to X; those illustrating his pottery report, from A to M. Whenever necessary I have given references to his figures as well as to those illustrating this article.

² Mr. G. P. Burstow, B.A., Dr. E. Cecil Curwen, F.S.A., and the writer.

¹ S.A.C. LXXIX. 193.

Before describing the various cuttings made in 1938 I propose to state the general conclusions derived from the detailed study of the pottery from those cuttings, and to point out the modifications of the provisional conclusions stated last year.¹

A. The hill was first occupied as an open village by inhabitants using two types of pottery—the local A 2 coarse ware and a finer ware described later as Caburn I ware.² This occupation certainly began about 300 B.C., but went on undisturbed until a date about 100 B.C.

B. Then (and not as previously suggested about 250 B.C.) the inner rampart and ditch and the first gateway were erected at a time when the neighbouring peoples of the Cissbury-Wealden 'AB' culture³ pressed down upon the site. From 100 B.C. to the time of the Roman Conquest of Britain the 'Cissbury-Wealden' culture people dominated the site and turned an open village into a defended town of some importance-the capital of the district.⁴ Moreover, they developed a new type of pottery under the various influences to which they were subjected in the last century B.C.—a type described later and named Caburn II ware.⁵

C. At the time of the Roman Invasion of Britain the inhabitants built the first phase of the outer rampart and the outer ditch across the north and north-western spurs and made some additions to the southern defences. These changes involved a new gateway also. For evidence of date apart from the pottery⁶ Mr. Hawkes has directed my attention to the forthcoming report of Mr. Ward Perkins on his excavations at Oldbury, Ightham.⁷ At this site there is a similar wide flatbottomed ditch built at the same date. The unusual width of these two ditches suggests that they were specially designed in an attempt to frustrate the Roman methods of attack by filling up the ditches with earth or brushwood under cover of a 'testudo' to form a path

⁴ See pp. 230 sqq. for arguments. ⁶ See p. 246.

⁷ Archaeologia Cantiana, 1939.

¹ S.A.C. LXXIX. 192–3.

² See pp. 217 sqq. and Figs. A, B, and C, pp. 218-20.

³ See p. 246. ⁵ See p. 243.

across which their troops could storm the rampart. That Caesar actually used this method in his raids on Britain a century earlier is evident from his description of storming a British Camp, possibly Bigberry: 'At milites legionis VII, testudine facta et aggere ad munitiones adiecto, locum ceperunt.'1

These extensive efforts at strengthening the defences proved vain, for there is no evidence of any occupation of the site in early Roman times. Moreover, there is distinct evidence of burning at this time at the gateway. Also, the chapes of two bronze scabbards and the binding of another, found in the ruins of the outer rampart, belong to the type illustrated and described by Mrs. Hencken in her report on Bredon.² There she points out that this type of chape is 'a derivative from Roman prototypes, and not in the La Tène development'. Her examples came from the 'massacre' area in the gateway in the last stage of fortification.³

D. After a break sufficiently lengthy for the outer rampart to fall into decay and to be covered with a thick turf-line, there was at least a partial rebuilding of the outer defences⁴ at some date intermediate between Roman and Norman times. Insufficient evidence was forthcoming to date this exactly, but there are slight hints of a date late in the Roman period.

E. Finally, after some mid-twelfth-century pottery had been left on a hearth to the north-west of the gateway on the top of the remains of Rampart 3, the site was fortified again as an adulterine castle in the civil wars of Stephen's reign. Though I have not yet been able to trace any exact reference to this event there exists every probability for some such happening. Stephen's son, William, had married the heiress to the Warennes' land and had himself become earl of Surrey. The Treaty of Winchester had guaranteed to William, as Stephen's only surviving son, the private estates of his father, and we know that, after his accession, Henry II

¹ Caesar, De Bello Gallico, v. 9.

² The Archaeological Journal, XCV, Pl. I,

³ Ibid., pp. 24–5.
⁴ Called Rampart 3 in Figs. III and IV.

confirmed him in the Pevensey lands; but the great support that the Warennes had given to Stephen through most of his reign gave ample opportunity for some local fighting.

DESCRIPTION OF THE EXCAVATIONS OF 1938 AND ADDITIONAL NOTES ON THE EXCAVATIONS OF 1937

Stage A. Open village before 100 B.C.

Evidence for this stage came from:

- (i) Hut-site B; comparable with Hut-site A, 1937.
- (ii) Cutting XIII.
- (iii) Beneath the inner rampart (Rampart 1) in cutting XIA, and especially from the postholes marked 1 and 2.

The Hut-site yielded:

- (a) Many sherds of Caburn I ware (Fig. C, p. 220).
- (b) Various small objects including two spindlewhorls, pieces of two whetstones (Fig. VIII, Nos. 36, 40, and 41, p. 208), parts of a quern, and, nearby, the Kimmeridge shale bangle (Fig. X, No. 44, p. 211).
- (c) A quantity of broken iron fittings.

Cutting XIII showed that the counterscarp bank had been built over an earlier 'low barrow' containing the fragmentary remains of two pots associated with an urn burial (see Fig. VII and Fig. B, p. 218). One of the pots is typical of Caburn I ware and the other shows its 'A 2' affinities.¹ Post-holes 1 and 2 in Cutting XI A obviously belonged to the pre-rampart period as they were sealed by a turf line before the rampart was built. The postholes and the turf line beneath the rampart proper yielded various forms of Caburn I pottery comparable to that found in 1937 beneath the same rampart (Rampart 1) in Cutting II. The pottery from these two cuttings through Rampart 1 led Mr. Hawkes to date the first fortification as late as 100 B.C.²

¹ See p. 218.

² See p. 249.

Stage B. Fortified 'Town': 100 B.C. to Roman times.

Cutting XI A confirmed the conclusion of 1937 that the inner rampart was of simple 'mound' construction without timber revetment. Fig. II A shows the line taken by the original rampart at the gateway. Later reconstruction removed the material of the rampart, but it was possible to trace its course by the line of the original ditch with its offset to flank the entrance and by the channels made to revet it when it turned in towards the original gate (G1 and G2). Traces of it could be seen beneath later material along the edge of the offset ditch on the north-west of the gateway. The pottery evidence¹ shows that the hill-town flourished from 100 B.C. to about A.D. 43 when there was a complete refortification against a danger which, immediately afterwards, caused the desertion of the site.

Stage C. Fortification at the time of the Roman Conquest.

The provisional conclusions of 1937 suggested that there was a partial refortification at the gateway about 50 B.C. followed by a complete refortification at the time of the Roman Conquest. The main reason for the second season's work was to test this conclusion as the evidence was not convincing. Much depended on the relationship of the tie-beams to the close-set palisade (Fig. II B). The digging of yet later post-holes into the rampart remains and the existence of a later pit² had so disturbed the soil that it was difficult to sort out the levels.

A comparison of the new cuttings (Cuttings XIB, XII B, XIV A and B, and XV) with those made in Cuttings I and II in 1937 brought out the following points:

(a) The tie-holes³ were in the material of the earliest stage of the building of Rampart 2 where it crossed the offset inner ditch and turned into the gateway.

¹ See pp. 249 sqq. ² S.A.C. LXVIII, ³ S.A.C. LXXIX, Pl. II, Sect. D–D¹, and E–E¹, p. 176. ² S.A.C. LXVIII, Pl. I, p. 1, pit 122.

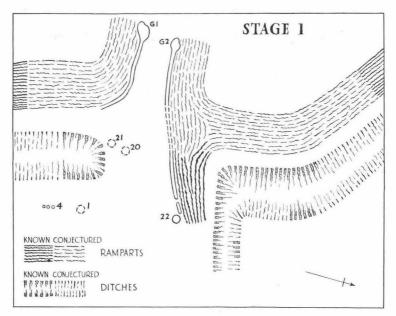


FIG. II A. GATEWAY OF CAMP ABOUT 100 B.C.

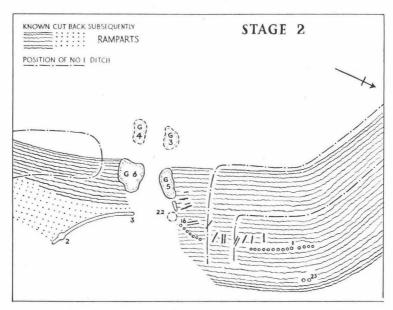


FIG. II B. GATEWAY AND RAMPARTS OF CAMP ABOUT A.D. 43.

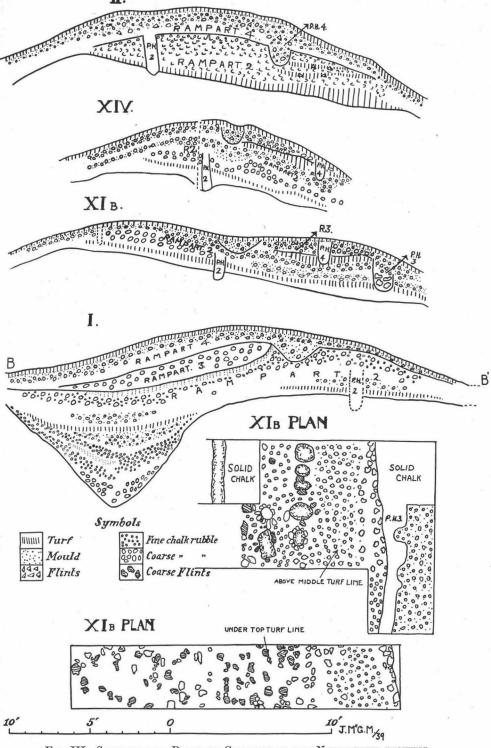


FIG. III. SECTIONS AND PLANS OF CUTTINGS TO THE NORTH-WEST SHOWING DIFFERENT STAGES OF REFORTIFICATION.

- (b) The remains of Rampart 2 reached, at least, up to the close-set palisade.¹ In this connexion Cutting XV, made as close as possible to Sect. B–B¹, of Cutting I (1937),² showed that the interpretation given there was wrong in marking the material in the right half of the section as Rampart 3. The corrected drawing is published in this year's report.³
- (c) Similarly in Cutting II (1937)⁴ the material marked as Rampart 3 should belong to Rampart 2 as shown in this report (Fig. III, Cutting II). The post-holes beneath the turf-line⁴ belonged to some pre-fortification feature.
- (d) Thus the tie-beams belong to the same period as the line of close-set posts. Mr. Hawkes gives conclusive arguments⁵ for dating this to the Roman Conquest.

If we now look at the construction of Rampart 2 we shall easily see its most prominent features:

- (a) A line of close-set posts runs from the gateway right along the northern defences as is shown in all the cuttings.⁶
- (b) Near the gateway most of the material of this rampart is inside this line of posts and was obtained by scooping away the ends of the inner rampart and depositing the soil partly over the silted-up inner ditch and partly on the solid ground outside that ditch (Figs. II B, III, and IV; Cutting XII B: Cutting I, Sect. B-B¹).
- (c) Across the northern defences, where the inner rampart is still in existence, the material came partly from the cleared-out inner ditch and partly from the new, wide, outer ditch. Here the main defences are outside the line of the close-set palisade. Their final form is best seen in Cuttings II and XI B and XIV, where they consist of (i) a

² Ibid.

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¹ S.A.C. LXXIX, Pl. II, Sect. E–E¹. p. 176.

 ³ Fig. III, Cutting I, Sect. B–B¹.
 ⁴ S.A.C. LXXIX, Pl. I, Sect. A–A¹.

⁵ See p. 259.

⁶ In Fig. III. These post-holes are marked '2' in each case, cf. Fig. I.

ramp on the inside of the line of posts, (ii) a forward 'wall' of rammed chalk or layers of turf, flint, and chalk, (iii) a chalk-rubble filling. Some of this chalk-rubble filling consists of humps of white, freshly quarried chalk from the new outer ditch, and some re-used grey, weathered chalk containing many sherds of earlier pottery.¹

Two points of interest arise in connexion with these defences. In lecturing to the Sussex Archaeological Society on the excavations I made a special point of the regularity of the interval between the posts in the close-set palisade. Both in Cutting II and Cutting XV and at the gateway, the distance spanned by any selected five posts measured almost exactly 66 in. Later Sir Charles Arden-Close sent Dr. Curwen a letter from which I quote: 'The only authority I can find for the length of the Belgic foot is Petrie. In the Proceedings of the Royal Society of Edinburgh, 1883-4. Petrie stated that the original old English mile was identical with the old French mile, which was based on the medieval foot of 13.22 inches. In the Encyclopaedia Britannica (9th ed., vol. XXIV, p. 484) it is stated, "When the Belgic tribes migrated to Britain, they brought the Belgic foot of the Tungri, which was one-eighth longer than the Roman foot, and was used until the fifteenth century. ... The average length of this foot was 13.22 ins."' This gives exactly the average distance from mid-stake to mid-stake of the close-set palisade.

The second point concerns the disposal of the material from the wide outer ditch. Only a part of it was required for the rampart; the rest seems to have been scattered to form a sort of platform between the counterscarp of the ditch and the edge of a coomb some distance to the north-west, seen on the left of the photograph.²

 $^{^1}$ Dr. E. Cecil Curwen suggests that the inhabitants originally intended to build a small counterscarp bank only, with the close-set palisade as a revetment. Then, feeling this was insufficient, they launched out on the more ambitious scheme.

² S.A.C. LXXIX, Fig. 1, p. 169.

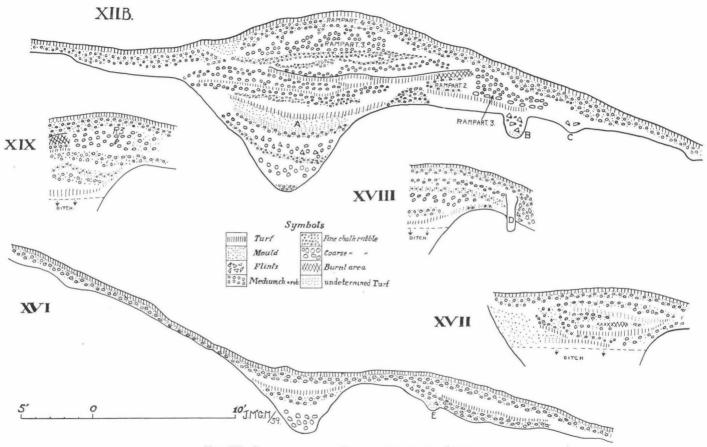


FIG. IV. SECTIONS TO THE SOUTH-EAST OF THE GATEWAY.

XII B shows four stages of fortification. A marks occupation layer containing pottery dating to the eve of the Roman Conquest; B, post-hole of pre-fortification period; C, channel for revetting Rampart 2.

XVII, XVIII, and XIX are sections showing relationship of new rampart to original ditch.

Stage D. Local reconstruction at an unknown date (probably Dark Ages).

Evidence for a partial reconstruction at some date intermediate between the Roman Conquest and Norman times comes from the gateway, from Cuttings XII B, XVIII, and XIX (Fig. IV), Cuttings I (Sect. B-B¹), XI B, and XIV (Fig. III). Either side of the gateway¹ and in Cutting XII B there are remains of additional white chalk above the turf line sealing Rampart 2. This material was placed in position after a good turf-line had formed and before the twelfthcentury cooking-pot had been placed above it. Cutting XII B shows how the remains of Rampart 2 were cut back when the new work was made. A tumble of large chalk blocks on the old turf-line suggests the existence of a wall associated with some large upright posts whose position could be traced in the remains of Rampart 2.

Away from the gateway the builders had dug trenches into Rampart 2 to take a line of posts, rammed in with large chalk blocks. In Fig. I, the general plan, these channels are marked A-B between Cuttings XVIII and XIX, and 7 in Cutting XIB; the photographs (Figs. VA and VB) show them after they were cleared out.

Stage E. Mid-twelfth-century fortification.

There yet remains one stage to be explained. Its date is fixed by the pottery found near the gateway, 2 ft. 6 in. below the existing surface on the 'Norman' hearth in Cutting I (Fig. I).² The material above that pottery forms a rampart with which a number of large post-holes were associated.³ Mr. Dunning, F.S.A., has called my attention to the fact that reports of traces of the timber-work in Norman castles are rare.

Cutting XIB brings out the sequence of building quite well. After Rampart 2 had fallen into decay the builders of Rampart 3 dug their channel and heightened

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S.A.C. LXXIX, Pl. II, p. 76, Sect. A–A¹, C–C¹, E–E¹, and F–F¹.
 See also S.A.C. LXXIX, Pl. II, Sect. С–С¹, p. 176.
 Ibid., Pl. II, P.H.s 23, 24, 26, 27, 28, 29; cf. Fig. I (this report).



FIG. V A. CHANNEL FOR POSTS OF RAMPART 3 NEAR CUTTING XVIII (FIG. IV, P.H. 'D').



FIG. V B. CHANNEL FOR POST-HOLES IN XI B. (See Fig. III, plan, P.H. 3.)

the rampart with some white chalk. The plan (Fig. III) made just beneath the top turf-line shows the distribution of flints and chalk. When the flints were removed,



FIG. VI. 12TH-CENTURY POST-HOLES, CUTTING XI B. (See FIG. III, plan.)

the bases of a row of post-holes were found. They are shown in the plan made above the middle turf-line.¹ As the section shows, these post-holes (P.H. 4) were cut down through the material of Rampart 3 down into the turf-line sealing Rampart 2. Associated with this last

¹ See photo Fig. VI, and Fig. III, 'Plan at Middle turf-line'.

stage (Rampart 4) are the flints behind the line of postholes and the scoop filled with a mixture of mould, flint, chalk, and pottery sherds, which has cut out the intermediate turf-line in Cuttings XI B and XIV. It is noticeable that flints and a dirty mixture of mould and chalk are always associated with these twelfth-century post-holes (Rampart 4), and that newly quarried white chalk always goes with the post-holes of Rampart 3.

Cutting XVI showed that there were practically no remains of the inner rampart on the steep south slope; but at the place where it probably ran there were traces of a second turf-line and quite a quantity of Caburn I ware. The new outer rampart here was not entirely over the old inner ditch as in Cutting III (1937), but was mainly forward of it, and there was a distinct channel for a palisade. Some distance farther down the hill a trial trench showed that chalk had been obtained by cutting a sort of terrace, and it is almost certain that this was the method of getting the chalk for the later rebuildings on this side of the hill.

Cutting XIII to the north-west of the gateway brought to light several interesting features. Some post-holes beneath the old turf-line belong to a feature earlier than the rampart built on the counterscarp bank. One of them was very close to some pottery and fragments of burnt bone which mark a burial. It looked as if the burial was later than the post-hole, but it was certainly earlier than the rampart. It is of particular interest because the main pottery belongs to Caburn I ware, discussed elsewhere.¹ With it were fragments of a small pot of A2 type. Unfortunately, it was impossible in the time at our disposal to test this rampart farther along to see if the channel for the post-holes continued in a direct line with the rampart. It seemed to be laid out too straight and the larger chalk blocks in this area did not continue through the rampart. Moreover, beneath the large chalk blocks and on the turf-line was a layer of broken flint forming a rough sort of pavement. Neither flints nor chalk blocks were present in the main

¹ See Fig. B, p. 218.

part of Cutting XIII. Further excavation is definitely necessary to clear up the relationship between these separate items.



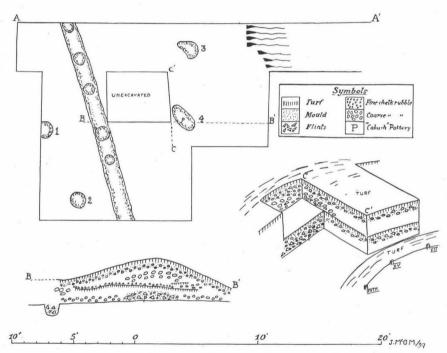


FIG. VII. PLAN, SECTIONS, AND ISOMETRIC DRAWING OF CUTTING XIII. 'P' marks the position of the broken burial-urn. (See FIG. B, p. 218.)

Hut-site B.

It was decided to strip an area near some of the pits excavated by Dr. Eliot Curwen and Dr. Cecil Curwen in 1926. At first there were practically no finds, but when the third side of the pit was reached many remains began to turn up, including two post-holes of a hut.

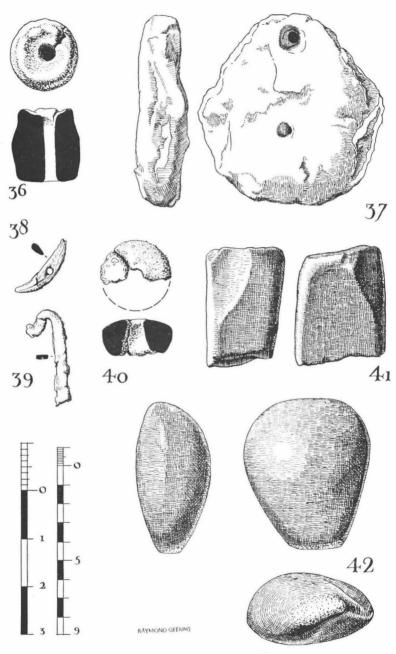


FIG. VIII. MISCELLANEOUS FINDS.

36 and 40, Clay spindle whorls; 37, Chalk loom weight; 38, Pierced tooth;
 39, Iron fitting; 41, Part of whetstone; 42, Hammerstone.

Marks on the ground running from one of them seemed to indicate the presence of some wall or partition. This site yielded a goodly quantity of Caburn I ware, two spindle whorls, parts of two whetstones, a Kimmeridge shale bangle, parts of a quern, and other small finds. The area uncovered showed how productive and informative an excavation might prove if carried out on the lines indicated by Dr. Bersu in his excavations at Woodbury for the Prehistoric Society. It is strange that the two hut-sites which were touched by the excavations of 1937 and 1938 and the burial under the counterscarp bank should produce such a predominant amount of Caburn I pottery. It does not figure to a marked extent in finds of 1926 beyond the well-known haematite bowl and the pottery from Pits 90, 106, and 137.

REPORT ON MEDIEVAL COOKING-POT FROM THE CABURN

BY G. C. DUNNING, F.S.A.

The fragments of pottery found on a hearth contemporary with Rampart 4 have been noted in S.A.C. LXXIX, p. 183, and the rim sherd illustrated on Fig. 14, 2, but merit a more detailed description. In addition to the fragment already published, there are several mended sherds of the side and base of the same pot, sufficient to allow of accurate reconstruction. The pot (Fig. IX) is of globular shape, $9\frac{1}{4}$ in. rim diameter and about 9 in. high; the rim is everted and the top has an outward slope, and the base of the pot is sagging. The ware is coarse and fired hard, grey in section with free admixture of flint and stone grit, with light reddish surface blackened below the shoulder by contact with a fire. The pot may be dated with some confidence to the middle of the twelfth century. The shape and gritty ware are closely matched by a cooking-pot of the early Norman period from Bramber Castle (S.A.C. LXVIII. 243), but the rim-section of the Caburn pot is one of the most characteristic and widespread forms of the twelfth century and occurs at several castle sites almost certainly built in Stephen's reign. Comparison may be made, for instance, with pottery from Lydney Castle, Glos.,¹ and Castle Neroche, Somerset.² Analogous cooking-pots were also found

¹ Antiq. Journ. x1. 258, Fig. 7, 15.

² Pottery in Taunton Castle Museum; the rims in question are not figured in *Proc. Somerset Arch. Soc.* XLIX.

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by Gen. Pitt-Rivers in the adulterine castle of Castle Hill, near Folkestone,¹ and the coarse ware of the Caburn pot agrees with his class 7. These analogies suffice to fix the date of the Caburn cookingpot at about the middle of the twelfth century and, together with the absence of documentary evidence for a Norman castle here,

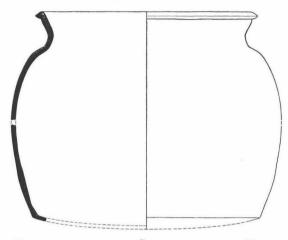


FIG. IX. MID-TWELFTH-CENTURY COOKING-POT FROM HEARTH BENEATH RAMPART 4 TO THE NORTH-WEST OF GATEWAY $(\frac{1}{4})$.

support the identification of Rampart 4 and the associated timberwork as an adulterine castle built in the reign of Stephen.

REPORTS ON BRONZE PIECES AND KIMMERIDGE SHALE ORNAMENT

BY C. F. C. HAWKES, F.S.A.

The bronze pieces are from the binding of a dagger-sheath (Fig. X, 43). The knob is the terminal or chape, and the portion directly adjoining it has got bent outwards. This type may be considered quite late in the Iron Age. Specimens were found last year by Mrs. Hencken and Mr. Ward Perkins at Bredon Hill Camp, Glos., in a context assignable to the pre-Roman portion of the first century A.D., and one very similar to this from the Caburn in the Glastonbury Lake-village, not earlier than first century B.C. (Bulleid and Gray, vol. I, p. 232, E. 247, and Fig. 43 (p. 190)). In the British Museum are examples from Hod Hill and Spettisbury Camp in Dorset, which should be of the same period, and the earliest possible association is that of the Wilsford Down specimen, north Wilts., found in one of a group of

¹ Archaeologia, XLVII. 438, Pl. XX, 44.

pits which also contained haematite-coated pottery resembling the latest from All Cannings Cross (*Devizes Mus. Cat.*, ed. 2, p. 155 (No. 806)). Such pottery, however, may be as late in Wiltshire

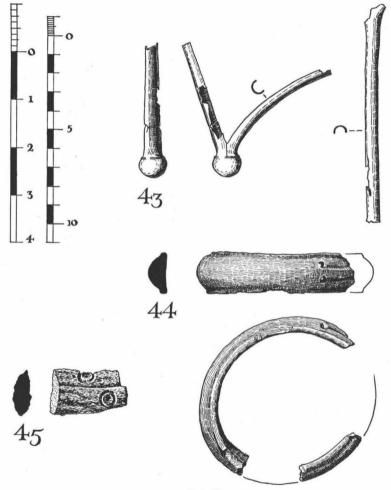


FIG. X.

43, Bronze chape and binding of dagger sheath; 44, Kimmeridge shale bangle; 45, Ring and dot ornament carved on a piece of antler.

probably as the second century B.C., and in any case the association cannot be treated as a sealed one.

The Kimmeridge shale bracelet (Fig. X, 44) is an excellent example of the ornamented type as found at Glastonbury (Bulleid and Gray,

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vol. I, pp. 254 ff. and Figs. 50–2), though its moulding is not identical with any specimen there. The prototype was probably the glass bracelet type of the La Tène II or La Tène C culture of the Continent, which had its centre of manufacture in the Upper Rhine-Black Forest area, at its height in the second century B.C. (see Déchelette, *Manuel*, IV, pp. 830–2; Viollier, *Sépultures du 2nd âge du fer*, p. 64, Pls. 33–5). One form of this foreign glass type is represented by a cobalt blue specimen found in the Iron Age site on Boxford Common, Berks. (*Trans. Newbury Dist. F. C.* VI, No. 4 (1933), pp. 210–17, with contribution by Dr. G. Kraft); the second century B.C. date (late in the life of the Boxford site) should give an upper limit of age for the shale renderings, which seem for the most part to be first century B.C. or A.D.

Acknowledgements.

Even more than in 1937 I feel that the success of the excavations arises from the unselfish help I received from so many people. I have already expressed my indebtedness to Mr. C. F. C. Hawkes, F.S.A., for the many hours of his time he has devoted to the pottery. Mr. G. C. Dunning, F.S.A., has made a number of most valued suggestions about the Norman period-some of which I should like further opportunity to follow up in greater detail. Dr. Zeuner of the Institute of Archaeology has analysed numerous samples of soil from the site. For Sussex Iron Age sites this approach by Geochronology is a new experiment of which the implications are not vet clear. On the site Messrs. G. P. Burstow, J. Holmes, O. G. Pickard, and A. C. Roper took charge of separate cuttings and relieved me of much detailed work. Messrs. Radford and Roper again supplied me with an excellent photographic record of the excavations. Dr. E. Cecil Curwen, though unable to spend much time on the site, was ever ready to give his advice and to relate work to the general history of Sussex in the Iron Age. Mr. King dealt with all the camp arrangements. Mr. Cox and Miss Casserley dealt with the financial appeal and much general correspondence. The real work, excavation under section leaders, fell upon those volunteers who so readily gave up so many days of their holidays: Misses Badrock, Cooper, Ellenband, Keeble, Lees, Lynam, Smee, and

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Wilson, Mrs. Roper, Mrs. Wilson, Messrs. Baker, Barnes, A. S. Bridle, V. C. Bridle, Butler, Cother, Cox, Gerard-Smith, Griffiths, Hitchings, Keech, Lidstone, Lynam, Mathieson, McMinn, Martin, Mason, Newton, Ridgewell, S. M. Smith, Spence, and Wright. After the death of Mr. Gurd I was fortunate enough to secure the services of Miss Webber, Mr. Geering, and Mr. Mathieson at very short notice to produce the very useful drawings which illustrate this report.