NOTE ON THE USE OF TIMBER IN EARLY IRON AGE FORTIFICATIONS

We have seen that in spite of the resemblance of the burnt-out Entrance works to those of "vitrified forts" which can be shewn to have been of *murus gallicus* construction, this method of half-timber building is not exemplified at St. Catharine's Hill. Nor, indeed, has it been discovered anywhere in Britain,[1] in fact, the use of any kind of timberwork in Early Iron Age fortifications has in this country hardly been attested at all.

In view of the persistent assertion that timber palisading, etc., must have been employed in such works, which is often made in spite of the lack of evidence, it is perhaps worth while to review the matter at this point, reserving consideration of entrances for a further Note below.

In discussing Danebury near Stockbridge, Dr. Williams Freeman[2] suggests that palisading was set in the bottom of the ditch: Mr. Hadrian Allcroft in his *Earthwork of England* (p. 186) believes in palisades on the tops of ramparts, and gives two examples to be considered presently; while in so excellent a little book as the Quennells' *Everyday Life in the New Stone, Bronze, and Early Iron Ages* (p. 32) the tops of banks are said to have been palisaded, and the bottoms of ditches filled with sharpened stakes, and this is illustrated in two admirable drawings (figs. 28, 29).

The idea is in every way reasonable, and the purpose of the present note is not necessarily to discredit it in any way, but to consider the actual evidence.

Excavation seems to have revealed no evidence at all for stakes or palisading in the bottoms of ditches in Britain, though it exists abroad (see below). Were there any traces of this in excavated ditches, they would not be likely to escape notice, as in the hard rock or chalk in which such ditches are usually dug the holes for the timbers would be unmistakable.

Of palisading along the top of a rampart there appears to be only one instance recorded, and that not in detail. In Davis and Thurnam's *Crania Britannica*, Vol. II, p. 3 of letterpress to pl. 51, it is stated that Martin Atkins found traces of strong

1. There appears to be one possible but not at all certain instance in Scotland that of Castle Law, Forgandenny (Perth): see *P.S.A. Scot.* XXVII, p. 14 ff. This and Burghead (Elgin) are the only instances of any sort of timber-work in Scottish fortifications, according to Christison (*Early Fortifications in Scotland*, p. 155), though as has been seen, it may have been present in vitrified forts.

2. *Proc. H.F.C.* VI, p. 298.

palisading in the chalk rampart of Uffington Castle on the Berkshire Downs, but died before being able to publish it. Presumably the post-holes of a palisade running along the top of the rampart are meant. Further excavation on this site is very desirable; in any case, the rampart might be regarded as exceptional, in view of the retaining-wall of sarsen of which Mr. O. G. S. Crawford has noticed likely traces.[1] But for the present it may be regarded as a valid instance: it is so mentioned by Mr. Allcroft (see above)—but it is the only one, for in the other case he mentions, that of Bantham Camp near Thurleston, Devon, the timbers discovered seem only to have been piles in the adjacent marsh,[2] while Lane-Fox (Pitt-Rivers), who also cites Uffington Castle, was mistaken[3] in relying on the evidence of the *Visitors' Guide to Weston-super-Mare* for the presence of sockets for a palisade along the top of the dry stone rampart of Worlebury, Somerset, as was shewn by Dymond and Tomkins in 1886 (*Worlebury*, 1st Edn., pp. 29-33 and 58-60), who also scout certain other alleged parallels in ramparts of the same kind.

In his careful excavation of the fortifications at the Caburn, near Lewes,[4] Lane-Fox (Pitt-Rivers) discovered stake-holes aligned at irregular intervals along the upper rampart near its outer edge. They were 2 ft. below its surface, and ran nearly 3 ft. below the old turf-line under it. Five were found in all, but the line was not found to be continued further either way—this may have been due to disturbance. Three other stake-holes found in the lower rampart were attributed to a previous wattled hut, but there is no doubt about those in the upper rampart, which was held to be the earlier of the two, being prior to the finer quality pottery (*i.e.* later La Tène) and associated with the inferior quality, which may be compared with the coarse ware typical of St. Catharine's Hill. The section cut was some way from the entrance, which has not been excavated, but in their relation to the body of the earthwork these stake-holes present a certain analogy to the revetment-posts in the St. Catharine's Hill Entrance, so that it is interesting to note that the pottery shews the two earthworks to be in some degree contemporary. Lane-Fox considered the holes were too shallow

1. See p. 38 above. Mr. Stuart Pigott tells me that he has come across evidence that diggings for sarsen have been made in this rampart, which bears out Mr. Crawford's observation.
2. *V.C.H. Devon* I, p. 580.
3. *Arch.* 46, pt. 2, p. 460.
4. *Arch.* 46, pt. 2, pp. 452 ff, with pl. XXIII facing p. 426.

(the average depth was 2 ft. to 2 ft. 6 ins.) to have supported a revetment to the bank, and decided that as they were some little way back from its outer edge the posts that stood in them were carried up through it to support a "vallum" surmounting it. He based his opinion on the British War Office *Manual of Field Engineering*, 1877, which lays it down that holes must be 3 ft. to 4 ft. deep even to support the weight of a stockade alone. As the revetment-posts in the St. Catharine's Hill Entrance were on an average at least 3 ft. 6 ins. deep, his contention is perhaps justified, but if we conclude with him that the Caburn holes supported a "vallum" ('breastwork' would perhaps be a better word) surmounting the rampart, we must, from the position of the holes, understand by this one standing some way down its outer slope.

As we have conjectured above that the revetment in the St. Catharine's Hill Entrance was carried up to form a breastwork for defenders on the slope of the rampart behind, the analogy is still fairly close: the position of the breastworks relative to the body of the rampart is the same, and even if the Caburn posts may not be considered as a revetment proper like those at St. Catharine's Hill, they must have contributed something to the stability of the rampart, and to that extent have served the purpose of a revetment.

Timber-work in fortress entrances will be discussed under a separate head; meanwhile this concludes the scanty list of evidence for its presence along the line of the defences in British fortresses of the Early Iron Age. There are in fact only two cases: one (Uffington Castle) in which a palisade ran probably along the top of the rampart, the other (Caburn) in which it ran along the side, some way down the outer slope, and may be considered in some sense also as a revetment like that of the St. Catharine's Hill Entrance.

Certain holes, apparently of post-hole type, filled with clean chalk, were found under the rampart of Winkelbury Camp in one place by Pitt-Rivers,[1] but he seems not to have considered them worth describing, and they do not form a very weighty piece of evidence: the same may be said of three found in a similar position at Oliver's Camp, near Devizes,[2] two of which seem if anything to have something to do with the entrance, which they are very near.

1. *Excavations*, Vol. II, plate CXLV.
2. Cunnington in *W.A.M.* XXXV, p. 420, with fig. 3.

This paucity of evidence is curious in view of the innate likelihood that timber defences would be employed, and also of their advanced development in Neolithic times,[1] and their use on the Continent in the Hallstatt period as well as in the later (La Tène) period of the Early Iron Age.

In south-west Germany, timber remains have been found in the rampart of the Heunenburg near Riedlingen dating from the Hallstatt C period,[2] while the Hallstatt fortress at Koberstadt [3] had double ditches with rows of stakes along the bottom, and in addition to a wall, sometimes doubled, strong palisades of stakes set alternately for interlacing with a hurdling of thorns. In northern Germany, where the Late Bronze Age was contemporary with the Earlier Iron Age further south, the Römerschänze near Potsdam [4] provides a most remarkable example of Germanic earth and timber fortification: the solid earth rampart contained a continuous wooden framework carried up to form a breastwork above, making interesting comparison with the Celtic *murus gallicus* already described. How early this latter mode of construction was practised is not certain; it was, anyhow, prevalent throughout the Celtic area from the Early La Tène period, and is pre-eminently exemplified in La Tène III (1st century B.C.).[5]

The abundance of continental material in this regard is in fact too great to permit of detailed reference here, and it forms a striking contrast to the meagre British evidence. Even allowing for the immense number of British hill-forts partly or wholly unexplored, the extreme rarity of recorded traces is remarkable.

There is of course no reason whatever to suppose that timber was everywhere employed: it is often rare in the upland regions where hill-forts are commonest, and the excavated forts where no traces of it have been found may be paralleled by similar cases on the Continent.[6] Nevertheless, it is possible that in many cases it has existed but has disappeared.

1. Lehner, *Der Festungsbau der jüngeren Steinzeit: P.Z.* II (1910), pp. 1 ff; cf *Suss. Arch. Coll.* LXX, pp. 73-5.

2. Bersu in *Fundberichte aus Schwaben*, n.f. I (1922), pp. 46-60.

3. Kofler in *Archiv. für hessische Geschichte und Altertumskunde*, n.f. III (1902), p. 215 ff.

4. Schuchardt in *P.Z.* I (1909), pp. 209 ff.

5. Déchelette, *Manuel* IV, chapter 2, passim: Schumacher, *S.K.R.* I, pp. 131-144.

6. As in the Gard region of Southern France, which is sparsely wooded (Déchelette *Manuel* IV, p. 504). In dealing with the forts of the Taunus region, Thomas (*Mitteilungen des Vereins für Nassauische Altertumskunde und Geschichtsforschung*, XII (1909), No. 4, p. 103), seems to overstress the idea that timber-work must have been much more generally employed than modern discoveries warrant, as any dry stone wall would rapidly disintegrate without it, and atmospheric action might easily account for its disappearance. Neither argument seems very sound.

Palisades may have existed along the tops of some dry stone ramparts, but discovery of their traces is obviously hardly to be expected (this applies to the case of Worlebury mentioned above), but in earthworks any use of heavy timber-work is clearly rare in this country. However, it is allowable to guess that light palisading or fencing was sometimes erected along the crest of earth ramparts, and has vanished without a trace, as it would not require bedding deep enough to escape natural surface disintegration. This suggestion has already been made in considering the St. Catharine's Hill defences (see pp. 19, 28, and 39 above), and it gains in plausibility from the argument that it would commend itself under primitive conditions as being easily cut, easily replaceable, and probably as effective a protection as would be required before the days of anything like regular siege warfare. Clearly proof of this conjecture is impossible, but it may reasonably be entertained.

NOTE ON THE DEVELOPMENT OF EARLY IRON AGE HILL FORTS AND THEIR ENTRANCES

The regional survey of ancient fortified enclosures is now an institution of fairly long standing, and in the last twenty years or so the formation in several countries of special committees for the purpose has borne excellent fruit. A large mass of statistics has been accumulated, and plans and profiles as well as verbal descriptions are often available. However, as the pioneer of this work in France has pointed out,[1] fortification is an almost universal product of man when a certain stage of his evolution has been reached, and all that surface inspection can do is to record and classify according to type. To make the typology chronological is impossible without a great deal of excavation, and this stage in the study of the subject has not been widely reached. But two main points at least are clear in this regard: fortification begins in the Neolithic period, and is intensively employed in the Early Iron Age, especially towards its close. The former had a technique of its own, and can hardly concern us here: the latter has been generally recognised, and has in particular formed the subject of a stimulating essay by Dr. R. E. M. Wheeler concerning the hill forts of Wales and their relation to those elsewhere in Western Europe.[2] The 1st century B.C. (or La Tène III period) saw a great advance in town-life in Gaul. The Gallic *oppidum* was no mere "camp of refuge," but a regular fortified town, and naturally the contemporary art of fortification made great strides, especially in the practice of guarding entrances (inevitably the weakest points in defence) by inturning the rampart-ends to flank the approach on either side. Dr. Wheeler suggests that elaborate fortifications, usually having this peculiarity, were introduced into Southern Britain from Gaul in the 1st century B.C., and thence into Wales, where they became highly developed in the great fortresses known to have been occupied in the later Roman period. A comparative chart (*op. cit.*, p. 88, fig. 31) of examples of this type of entrance admirably illustrates the point.

Now many of the Welsh forts have been dated by excavation, and some of those in Southern Britain also, and this correlation of both with the big Gallic *oppida* of La Tène III is unimpeach-

1. A. Guébhard in *C.P.F.*, Vannes, 1906, p. 157. His pleasant if somewhat rhetorical address on "*Camps et Enceintes*" in *C.P.F.* Autun, 1907, pp. 997-1036, forms a stimulating introduction to the whole subject. F. Behn's article "*Festung*" in R.V. III is an indispensable summary, though severely dry.

2. *Roman and Native in Wales*, Honourable Society of Cymmrodorion, *Transactions*, 1920-21, p. 72 ff.

able. It is, in fact, the first attempt that has been made to connect the forts of Britain and the Continent by means of dated examples of a common type. But a review of the results of excavation, some of it subsequent to Dr. Wheeler's article, seems to show that the matter can now be carried further. The dating of forts by excavation is in fact just beginning to make some approach possible to a classification that shall be by chronology as well as by type, and though such an attainment is still very far off, it seems permissible to see what can be done in this direction, little as it is, in this Report, in view of the unexpectedly early date established for the St. Catharine's Hill earthwork and its inturned Entrance.

Of the Neolithic period, it is enough here to say that some fortified sites of this date continued in occupation even down to the Roman period,[1] while it is remarkable that in north-west Europe no such sites of exclusively Bronze Age date seem to be recorded—a serious reversal of the theory formerly prevalent at least in England, for which a reason has been suggested in the semi-nomadic life of most Bronze Age people. It is in fact in the Hallstatt period that fortifications begin to appear more widely in the regions under review. It is true that it was pre-eminently a time in Western Europe of open agricultural life, yet advance in organisation inevitably brought men to more warfare and the need for defences, while influence was more and more coming in from those Mediterranean lands where the art of fortifying had long been carried to great perfection.

Forts are very numerous on the mountains bounding the upper and middle Rhine, and of these at least one, the promontory fort of Rambach near Wiesbaden, has been dated to the 8th century B.C.[2] The date seems to rest to a large extent on association with a group of barrows: if correct, it is remarkably early, for the bulk of the German Hallstatt forts seem to be later, and this one is distinguished by having an inturned entrance clearly set intentionally askew, and is thus of a rather advanced type. However, its Hallstatt date is beyond question, and quite a number of German and French forts are reliably attributed to the 7th and 6th centuries, or Hallstatt II period.

1. *e.g.* the Camp de Chassey (Saône et Loire, France), Déchelette, *Manuel* III, p. 188, and Fort Harrouard (Eure et Loir), with vitrified rampart of Middle Neolithic date: *B.S.P.F.* XXV, p. 368 ff.

2. Thomas in *Annalen des Vereins für Nassauische Altertumskunde und Geschichtsforschung*, 42 (1913), p. 138 ff.

In Swabia, the Heunenburg near Riedlingen [1] has fortifications of two periods dating from these centuries, and pottery of the latter has been found at the Heuneburg near Upflamör [2] and in the earliest period at Lemberg near Feuerbach,[3] in the same region. The fortress at Koberstadt, already mentioned (see p. 70 above, with ref.), is of a similar age, and its entrance was flanked by inward returns of its outer palisade of thorn-hurdling.

At Neuhausel in the Westerwald [4] is another contemporary fortress, which had, as well as a smaller type of defended entrance, a large one with symmetrical timber defences of some complexity. The famous stronghold of the Steinsburg in Saxony [5] has an inner ring of rampart dated to the 7th century, while the earlier of the subsequent sets of defences may perhaps belong to the 6th. Entrances set askew and defended by a transverse inner wall are here recorded: the inturned type is not present in any way of these works, but in addition to Rambach, mentioned above, a quadrangular walled entrenchment has been excavated at Lipporn in the Taunus,[6] where the rampart-ends are inturned at right angles to flank the entrance for a good 25 ft., and while later material is also present, a fair proportion of Hallstatt pottery was found. In eastern France, inturned entrances seem to be later, but the vitrified Camp d'Affrique, Meurthe-et-Moselle,[7] may be noted as of Hallstatt date, and the same may be said of the Camp de Cora, Yonne; [8] at the Camp du Château, Jura, the original defences seem to be 6th century, if they may be correlated with the adjoining stratum containing Attic black-figure vases.[9] The vitrified fortress of l'Impernal has been mentioned above (p. 65, note 1): another late Hallstatt fortification is that of the important settlement of Haulzy in Champagne:[10] the entrance here was protected by an outer transverse rampart.

Though around the mouth of the Rhône the founding of Massilia seems to have stimulated the fortification of the neigh-

1. Bersu in *Fundberichte aus Schwaben*, n.f. I (1922), pp. 46-60.
2. Veeck *ibid.*, p. 45.
3. Goessler *ibid.* XVI (1908), pp. 34-41.
4. Soldan in *Nassauische Annalen* XXXII (1901), esp. taf. III - VI.
5. Götze in *P.Z.* XIII (1921), pp. 19-83.
6. Brenner in *Nassauische Heimatblätter* 17, ii (July 1913), p. 33 ff.
7. Beaupré in *B.S.P.F.* VI (1909), pp. 381-3: Déchelette, *Manuel* III, pp. 199, 200.
8. Déchelette, *Manuel* III, p. 188.
9. *Ibid.*, pp. 184-7.
10. Goury, *L'Enceinte d'Haulzy et sa Nécropole*, fig. 4 and cols. 7-15. For chronology see below, p. 153.

bouring Ligurian settlements in the 6th century,[1] it is clearly in the Celtic area of Western Europe that fort building was especially prevalent in the later Hallstatt period, and the examples here given are sufficient to show this and establish the fact that entrances, though more normally simple, may be specially defended, and are sometimes, anyhow in Germany, of the inturned type.

Schumacher's distribution-maps[2] show admirably how between the later Hallstatt and La Tène periods the distribution of hill-forts moved northward down the Rhine, and in fact this western Celtic area was now the scene of considerable shifting of population. Celts were established as far north as the lower Rhine, and in this region was felt the first pressure of the Germanic peoples advancing from the north and the east, where they were responsible for such earth and timber fortresses as the Römerschänze near Potsdam, mentioned above (see p. 70). Archaeology records an overlap of the two cultures on the lower Rhine, and it is with this and the rest of the north-western Celtic quarter that late Hallstatt immigration into Britain is to be connected, as will be suggested in a later section (see pp. 152-3 below). Whatever the exact course of events, immigrants at this time cannot fail to have been familiar with the practice of erecting hill-forts, though during the period of their gradual penetration and settlement in small bands they are not likely at first to have made much use of it. But a certain number of hill-forts belonging to what may be broadly termed the All Cannings Cross culture in Southern Britain are definitely attested.

They consist as a rule of a single main rampart and ditch, though the stone-built fort of Chastleton in the Cotswolds, now being excavated by Mr. E. T. Leeds, is ditchless. As with the Hallstatt forts which we have been considering on the Continent, their entrances are normally of simple type, consisting merely of a break in the earthworks, which figures as Type A in the left-hand column of Fig. 8, a comparative chart of the entrances of representative dated hill-forts in Britain. Here the top row (Nos. 1-3) are of the All Cannings Cross period, and the Type A Example (No. 1), Figsbury Rings, Wilts,[3] shows a simple entrance where even the outer ditch is not present on both sides, a " quarry ditch " inside the fort having apparently been

1. Déchelette, *Manuel* IV, p. 503.
2. *S.K.R.* I, taf. 8.
3. Cunnington in *W.A.M.* XLIII, pp. 48-58: *Wessex from the Air*, pp. 84-86.

used to get most of the material for the rampart—this is an unusual feature.

At Lidbury Camp, Wilts,[1] the entrance was originally a simple gap in the rampart and ditch, and the outline of the ditch at this period is shown by broken lines in No. 2. Subsequently, however, the plan was altered, and the earthworks were thrown forward on both sides, more especially on the east, where the rampart, running over the former ditch, makes a pronounced elbow with a faint curve inwards towards the entrance. Both periods of work belong to the same occupation, and the object of the alteration is clearly to get a better command of the approach. As thus remodelled, therefore, the Lidbury entrance makes the earliest British example of the type here called Type B, where the ramparts are gently incurved on either side of the passage (central column in fig. 8).

The third type of this classification occupies the right hand column in Fig. 8, and has the rampart-ends inturned at an angle approaching 90° to flank the passage. St. Catharine's Hill (No. 3) provides the earliest dated instance of this in Britain. It is further distinguished by the slight skewness of its axis, and by the small counterscarp bank, with splayed double ends, outside the ditch. It need not be repeated that it was stoutly revetted with timber, and at first provided with quadrangular guard-houses set in bays in the rampart on either side of the roadway.

The area of this fort (23 ac.) is also the largest among those known to belong to the same culture. Figsbury is about 15 acres, and the original fort on the northern spur of Hambledon Hill, Dorset, is not very much more. Precision is difficult about the defences of this fort, as it was subsequently enlarged, and it is not certain how much the original earthworks were altered. It is quite possible that they were mainly double from the first, being afterwards made treble: they have been largely formed by scarping the steep hillside. A cross rampart divides the area into two, but the significance of this is doubtful in the absence of excavation (for the earthwork has only been dated by chance finds of pottery in significant positions), and for the same reason it is unwise to discuss the mutilated northern entrance.[2]

1. Cunnington in *W.A.M.* XL, p. 12 ff.

2. The lucid essay by Mr. Eric Gardner in *Wessex from the Air*, pp. 44-55, makes it plain that careful excavation on this site would throw much light on the development of fortification and probably also of the sequence of cultures during the Early Iron Age of Southern Britain.

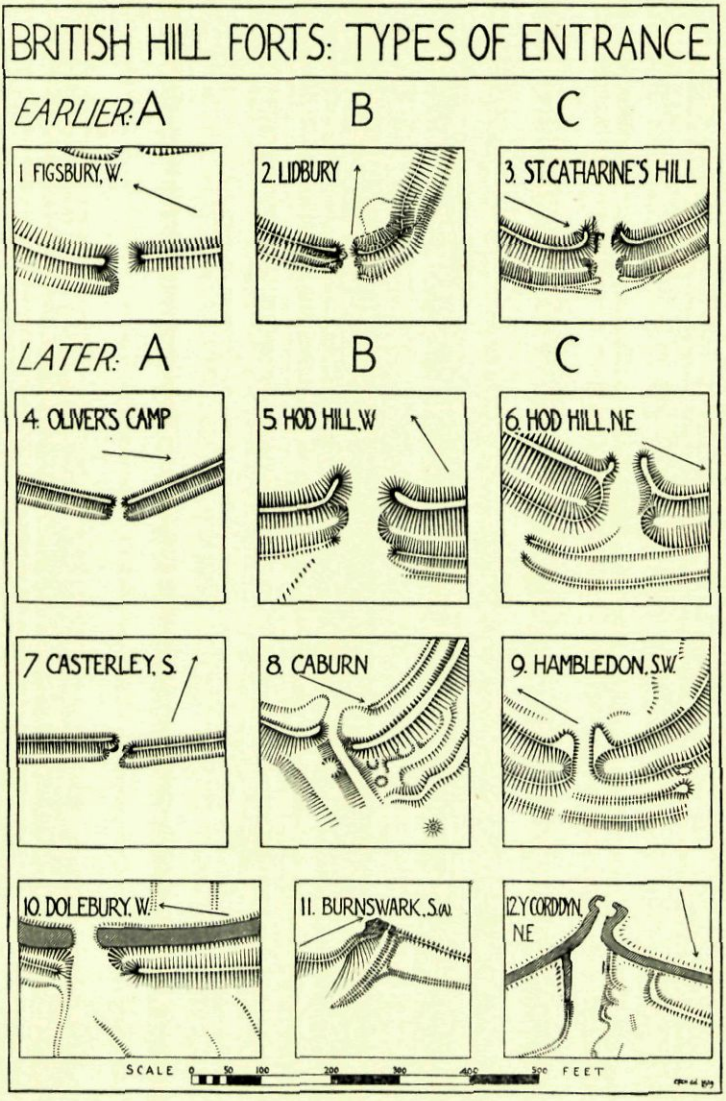

FIG. 8.

NOTE.—The drawings forming this comparative chart are based in every case on plans given by the primary authorities for each quoted in the text, to which further reference is recommended. The arrow marking True North is here in every case *inside* the fortified area.

On St. Roche's Hill, Goodwood, Sussex, the fort called The Trundle (12½ ac.) has defences closely resembling those of St. Catharine's Hill, in particular two sharply-inturned entrances. Though these have not themselves been dated, Dr. Curwen's recent excavations [1] have attested occupation from Hallstatt to La Tène II, and thus the fort is more than any other comparable to St. Catharine's Hill.

Pottery of All Cannings Cross type was found by Pitt-Rivers in Winkelbury Camp, S. Wilts, which has been compared with Hambledon, but hard black wheel-made pottery, evidently of late La Tène date, was also present, and as well as a fair quantity in the ditch, two pieces of it were found in the make-up of the rampart, which is thus seen to be later than the pit-dwellings containing All Cannings Cross pottery.[2] There are other instances of later La Tène fortifications appearing on the site of an undefended settlement of the All Cannings Cross culture (see p. 170 below).

The rest of the earthworks known to belong to the latter are a good deal smaller, and whether or no they occupy a hill-top site, have a noticeably angular outline, as indeed is almost the case at Lidbury.

Liddington Castle, Wilts,[3] is a small promontory fort of 8 acres, approaching quadrilateral form with pronounced corners, the entrance being simple: a quantity of All Cannings Cross pottery is recorded. It is possible that Hollingbury,[4] a squarish hill-top fort of 9.2 acres above Brighton, is of the same date, as within it a pit accidentally opened produced only similar pottery.

Air photography has revealed on Knighton Hill, Wilts, the quadrangular earthwork (about 2¾ ac.) mentioned in Saxon charters as Wududurh.[5] Dr. Clay's excavations produced All Cannings Cross types of pottery, and the earthwork is certainly a product of this culture, the Romano-British pottery found in the ditch being considerably nearer the surface. It is not a hill-fort, but belongs to the class of pastoral "valley-head enclosures" recognised by Mr. H. S. Toms in Sussex and Dorset. A link with the Rhineland is provided by the strong resemblance of these enclosures to the "Viereckschänze" well

1. *Suss. Arch. Coll.* LXX, p. 33 ff.
2. Pitt-Rivers, *Excavations* II, p. 233 ff., esp. p. 245. This point is overlooked by Gardner *loc. cit.* and Mrs. Cunnington, *All Cannings Cross*, pp. 196-7.
3. Passmore in *W.A.M.* XXXVIII, p. 576 ff.
4. Toms in *Brighton and Hove Archaeologist* I (1914), p. 12 ff.
5. Clay in *Wessex from the Air*, p. 131 ff.

known there, and usually found to be of La Tène date,[1] though, as we have seen, that at Lipporn in the Taunus, notable for its inturned entrance, may be Hallstatt. The "agrarian-military" character attributed to them by the Germans may be said to fit the corresponding British earthworks: the entrances of this common type are, as at Wuduburh, normally simple. A further point of interest is provided by the small square earthwork (about .3 ac.) just outside Wuduburh, and plainly contemporary, as this may be classed with those excavated by Pitt-Rivers at South Lodge (Rushmore Park), on Handley Hill, and on Martin Down, respectively ¾, ¼ and 2 acres.[2] These belong to the Barrel-urn culture of the late Bronze Age, which is at least fairly closely related to that of All Cannings Cross, and being evidently pastoral enclosures, are naturally without special entrance defences.

This concludes the description of the known fortifications and enclosures of the All Cannings Cross culture in southern Britain, which lasted well into the La Tène period: their scheme was normally simple, but additional defences and the device of the inturned entrance were not unknown.

No such early works have as yet been attributed to the Celts who appeared in Yorkshire probably near the end of La Tène I, and the next development must be looked for in the west.

In the report on his excavations at Chun Castle, Cornwall (*Archaeologia* 76, p. 205 ff.), Mr. E. T. Leeds has drawn attention to the close connexion, especially in La Tène times, between south-western Britain and northern Spain. He points out that the arrival of the Celts in north-west Spain can only have antedated by a short space their arrival in Britain,[3] and a further close link was provided by the important trade in tin. The hill-forts in this area and in northern Portugal, called *citanias* or *castros*, are of La Tène date: they are massive stone ring-works, often of polygonal masonry, with circular stone dwellings inside.

Briteiros, Sabroso, Sta. Tecla, and Pontevedra are the best-known examples,[4] and in these we may see the work of Celtic invaders who had here reached the Atlantic seaboard

1. Behn, *R.V.*, "*Festung*," Sect. 28.
2. *Excavations*, IV.
3. See pp. 153, 159 below. The two movements may in fact be considered practically contemporary.
4. Cartailhac, *Les Ages préhistoriques dans l'Espagne et dans le Portugal*, p. 272 ff.

by a south-westerly movement across France, and thus established their hold over the natives and over the exploitation especially of tin.

Now the stone hill-forts of the very similar tin-producing region of Cornwall are in general smaller, and it is in distribution rather than wholly in type that they correspond to those of north-west Spain, but the connexion between the two groups can hardly be doubted, in view anyhow of Mr. Leeds' further arguments, especially from brooches and from decorative design on pottery, and there is certainly a strong case for the Spanish origin of a Celtic invasion of Britain from the south-west, apparently at some date before the middle of the La Tène period. The fort at Chun is circular and, though small, of great strength: it has two concentric walls, and a double turn is necessary to pass from the outer entrance to the inner, which is of the inturned type. Forts such as this, Trencrom, and Carn Brea, are thickly distributed in the tin area of Cornwall, and from here the culture can be shewn to spread over Devon, Somerset and beyond. With its most interesting manifestations, the lake-villages of Meare and Glastonbury, we are not here concerned, but the pottery-types from them and, for instance, the cave of Wookey Hole are distinctive, and by this means the chronology and extent of the culture will no doubt in time be established. The big hill-forts of south-west Britain seem to be largely La Tène III, and during that period (1st century B.C.) there were fresh immigrations of Belgic peoples from Gaul all along the south of the island as far west as Somerset. It is possible that in the future evidence will be found on which to attribute many later La Tène fortresses to one or other group; but at present it is quite enough that the earlier work of the All Cannings Cross culture (Nos. 1-3: 'earlier' on Fig. 8) may be distinguished from all of them alike (Nos. 4-12: 'later' *ibid.*).

Before these latter can be further considered we must return to the Celtic area of France and Germany. La Tène hill-forts there, as indeed we should expect, are not by any means confined to La Tène III. The continuity in fort-building with the later Hallstatt period is unbroken. From the middle Rhine eastwards to Thuringia and Saxony, the marches of German and Celt are marked by many strongholds,[1] the greatest of which is the Steinsburg, where the Hallstatt defences already mentioned

1. Götze in *P.Z.* XIII (1921), pp. 25-6: Behn in *R.V.* "Festung," Sect. 27.

were superseded before the middle La Tène period was over by two successive sets of new and far larger fortifications, with improved entrance defences. The works at Altkönig in the Taunus, with inturned type of entrance and *murus gallicus* construction, date from La Tène I: those of Heiligenberg are also early, those of Odilienberg middle La Tène, as perhaps are those of Heidenlocher near Deidesheim. Long lists of examples are not required:[1] it is clear that largely under Germanic pressure Celtic fortification was here developing well beyond the point it had reached at the time of the appearance of the All Cannings Cross culture in Britain.

In France, the existence of many forts before La Tène III may be considered certain, but the invasion of the Cimbri and Teutones shortly before 100 B.C. seems to have given fortress-building a new stimulus.[2]

This brings us to the period of La Tène III, when it thus reached its climax throughout Celtic lands. Mediterranean influence intensified town life, and both old and new *oppida* were elaborately fortified. The multiplication of lines of defences and the protection of entrances with outworks are now typical, while the old device of the inturned entrance was brought into greater prominence. The great *oppidum* of Mont Beuvray gives a striking instance of this,[3] while other examples that may be cited are the Château de Murèt (Aisne),[4] and (in south-west Germany) Otzenhausen, Heidenlocher, Ringskopf, Wildenburg, Donnersberg, Finsterlohr, and the Heidetränksperre.[5] At Altehöfe in Nassau an inturned entrance was substituted for a simple one.[6]

It is the intensive work of this period in Western European fortification with which Dr. Wheeler rightly connects the contemporary and later work in Britain. But just as the former was preceded by some centuries of prior development, so the latter displays characteristics foreshadowed in the earlier period of the British Iron Age. In particular the inturned entrance

1. For Germany see further, besides *R.V.* "Festung," Sect. 21 ff., Schumacher *S.K.R.* I, p. 131 ff.

2. Déchelette, *Manuel* IV, p. 453. *cf.* Caesar, *B.G.* VII, 77, 12-14.

3. Bulliot's *Fouilles du Mont Beuvray* gives no plan of this: I am indebted to Dr. R. E. M. Wheeler for information, and a sketch-plan.

4. Vauvillé in *B.S.P.F.* IV (1907), pp. 450-1. For a list of representative La Tène III *oppida* in France, see Déchelette *Manuel* IV, pp. 452-75.

5. Behn's article "*Prähistorische Festungstore*" in *P.Z.* XI (1919), pp. 102-117, gives a good account of the entrance defences of German forts of this period in the course of a conspectus of development in this regard from Neolithic times to the Middle Ages.

6. Thomas in *Nassauische Annalen* XXXVI (1906): plan, taf. VI.

is not a new feature in La Tène III, though it is much commoner and more evolved. Rather it is increase in the size of fortifications generally, multiplication of lines of defence, and complexity of outworks, especially those defending entrances, that characterise more properly the work of this period. Allcroft's *Earthwork of England* (p. 187 ff.) and Christison's *Early Fortifications in Scotland* (p. 215 ff.) give general consideration to the variations of these complexities, mostly from surface inspection.

The later examples of defended entrances given in Fig. 8 (Nos. 4-12) are all dated in some degree by excavation, the latest being No. 12, and are grouped according to the same typology as that used for Nos. 1-3, to shew at once its continuance and its development. The left-hand column shews that the simple type A in no way died out: Oliver's Camp, near Devizes [1] and the large camp at Casterley, Wilts,[2] Nos. 4 and 7, are selected because excavation has revealed a system of post-holes in these entrances comparable to, though much less complex than, that at St. Catharine's Hill.

It is probable that careful digging would reveal something of the kind in all fort-entrances: gates were probably usual, and revetments, if not guard-house bays, might well be expected. There is every reason why the rule attested in the former Note of the rarity of heavy timberwork extending along the lines of fortification should not be true of entrances, and it is much to be hoped that future excavators will not neglect this important feature of hill-fort defences.

The more or less gently incurved type B is seen to persist in an improved form with the frequent addition of outworks: those at the west gate of Hod Hill, Dorset [3] (No. 5) are not much more complex than those at St. Catharine's Hill, but at the Caburn, near Lewes, Sussex (No. 8), they are a good deal more so. This fort has two lines of rampart, of which it has already been noted that Lane-Fox (Pitt-Rivers) considered the outer to be later than the inner, which is by itself apparently of the earlier period: anyhow the entrance in its complicated later form must be of La Tène III date.[4]

Fully inturned entrances of Type C are here represented by the north-east gate of Hod Hill (No. 6), where not only does a bank run right round the outer lip of the ditch, but a double

1. Cunnington in *W.A.M.* XXXV, p. 408 ff.
2. Cunnington *ibid.* XXXVIII, p. 53 ff.
3. Crawford, *Wessex from the Air*, p. 36 ff.
4. See above, p. 68, with ref. to Lane-Fox: Curwen in *Sussex Arch. Coll.* LXVIII, pl. I.

outer bank, in type a special development of the St. Catharine's Hill counterscarp bank, passes right across the approach to protect it and necessitate entering from the south and making a right-angle turn: the inturned ends of the main rampart have clearly been designed to conform with this plan. A similar scheme reversed is seen in the south-west gate of Hambledon Hill, Dorset (No. 9), which belongs to this fort's later period (see above, p. 76 with ref.): the cut across the protecting outer banks is modern, and the entrance to the proper lateral approach which they flank is narrowed by thickening them. The defences here are an improvement on those at Hod Hill in that an assailant would expose his shieldless right side to fire from the main rampart.

In conclusion, three examples are given from forts partly or wholly stone-built. Dolebury, Somerset,[1] (No. 10), shews an entrance through works of enormous size which is of simple type, though guarded by outworks, necessitating an inclined approach by a natural gully, the full extent of which cannot be seen on this small plan. Similar advantage of contours has been taken at the fortress of Burnswark, Dumfriesshire, in the approach to the southern gate called A by the excavators.[2] This example, though from rather far afield, is interesting as shewing analogous design in the Scottish Lowlands, and from the fact that the place was assailed, as is clear from the remains of their camps, by the Romans, and very probably by Agricola.[3] The main rampart, following the top of a steep natural bank, curves inwards to flank the narrow approach on one side, while on the other a double outwork runs along it. The gate itself, supported on the south-west by a big outcrop of rock, is stone-built, with shallow bays on either side of the passage (No. 11).

Lastly, on the other outer limit of the Roman power, the fortress of Pen-y-Corddyn,[4] North Wales, gives an example (No. 12) of the extreme development of the inturned type of entrance in the later Roman period. The general problem presented by the Welsh hill-forts of this date is discussed by Dr. Wheeler in the paper already quoted: their existence is probably due to a special adaptation of Roman frontier policy in dealing with the subject native. In the north-east Y Corddyn

1. Dymond in *J.B.A.A.* XXXVIII, pp. 404-5: Allcroft, *Earthwork of England*, p. 686, fig. 224: *V.C.H.* Somerset II, p. 488.
2. *P.S.A. Scot.* XXXIII, p. 232 ff.
3. Tacitus, *Agricola*, ed. Furneaux and Anderson (1922), pp. lii, lviii, with reff.
4. Willoughby Gardner in *Arch. Cambr.*, Dec. 1926, pp. 251, 271, 274 especially. The whole paper is invaluable for the Welsh forts generally.

entrance we have a great depth of outworks flanking an approach up a natural gully, and sharply inturned rampart-ends containing rectangular bays which, while they suggest an imitation of a Roman gate-plan, also recall the guard-house bays of the St. Catharine's Hill entrance.

The general conclusions of this Note may be summarized as follows :—

(1) The building of hill-forts, while not unknown previously, first became prevalent in Western Europe in the Hallstatt period. Pastoral enclosures also occur.

(2) Entrances of inturned type sometimes occur as early as this.

(3) Both (1) and (2) apply to the period of the All Cannings Cross culture in S. Britain, as is natural in view of its Continental origin.

(4) Development of the art of fortification continued on the Continent through the early and middle La Tène periods, and examples in S.W. Britain occur due perhaps to immigration from N. Spain.

(5) The growth of town-life on the one hand, and the increasing pressure of Germanic hostility on the other, gave a great impulse to fortification in the La Tène III period.

(6) This impulse was communicated to Britain.

(7) The characteristics of the work of this period are an increase and improvement in the use of the inturned type of entrance already known, an increase in the size and number of lines of defence, and an increase in the extent and complexity of outworks, especially those guarding entrances.

(8) Owing to special circumstances, an extreme development of such fortifications, especially of the inturned entrance, occurred in the later Roman period in Wales.

Forts situated on hill-tops have been the subject of this Note, but there are signs that woodland and valley settlements were on the increase towards the end of the La Tène period, anyhow in those areas of northern Gaul and southern Britain where the Belgic inhabitants were of mixed Celtic and Germanic stock. Discussion of this tendency will be found more relevant in a later part of this Report (see below, pp. 172 ff.).