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ON ANCIENT BRITISH WALLS.

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THE numerous camps and other ancient remains in our island afford abundant evidence of the character of the masonry attributed to the early Britons. The circuits of their camps, or fortified towns, designated by Cæsar as "*oppida*," were often very carefully built; and, though without mortar, the stones were so well put together, that in many places the substructions, and some other parts of the walls, have remained to this day in a very perfect condition, wherever the hand of man has not interfered to injure or disturb them.

When the stones were of small size, they have generally owed their preservation to the fall of the upper portion of the wall, which has buried them under a heap of fragments, and thus acted as a cover from the weather, and as a support to the masonry; and when, as in Devonshire and Cornwall, the granite blocks were of great size, their own weight has tended to keep them in their original position. But they have never entirely escaped the effect of human violence; the upper portions of the walls have always been thrown down, and the ruined mass lies in confusion below, frequently overgrown with turf. In many cases, however, much remains of the lower part, and the two or three tiers of stone left standing show the style of their construction, and the principle on which the walls were built. Those composed of stones of small dimensions were constructed

very like the dry walls of the present day in various parts of the country, the blocks being fitted together in such a way, that the fall of one did not entail that of all the others immediately above it, and the form of each was adapted as much as possible to that of its neighbours. The stones were of all sizes and shapes, as they came to hand, irregularly polygonal, rectangular, or abrupt, according to the fracture of the rock from which they were taken; but when this broke up into regular layers, or laminar courses, and rectangular blocks could be obtained by its natural cleavage, they were often placed in courses more or less horizontal; and, if they were not made exactly "to break joint" in the most skilful manner, this principle was generally carried out to a certain extent, by causing each stone to pass beyond the joint of the two below it, thus preventing a direct downfall of several successive courses of stones, which might have resulted from their being placed upon each other in a directly vertical position. Walls, however, built in horizontal courses occur more rarely than those composed of irregularly shaped materials, and are necessarily confined to localities where the fracture of the rocks lent itself to that more regular mode of construction; and we, therefore, find a near approach to the latter in the bee-hive huts of Brown Willy in Cornwall, built of a granite which there splits into large slabs, well suited to a rude kind of horizontal masonry, and to the formation of roofs with overlapping stones. (Plate 1, fig. 1). And, though these huts are of a later time than the pre-Roman camps, they may still be considered examples of British masonry; for, like some in Ireland which they resemble very closely, they are probably of early Christian time, and of about the same date as the "House of St. Finan Cam" and others described by Mr. Petrie,[1] which he ascribes to the "sixth and seventh centuries." Indeed, the influence exercised by materials on the masonry of particular localities is well known; and British walls differed as much in some places, as the round towers of Norfolk and Suffolk do from those of rectangular form, built of ashlar stone, in other counties.

In the old camps, a mixture of rectangular and irregularly shaped stones is frequently met with; and in the walls of the large town on Worle hill, above Weston-super-Mare, we

[1] Eccles. Archit. and Round Towers of Ireland, p. 131, etc.

Fig. 1.

Fig. 2.

Fig. 3.

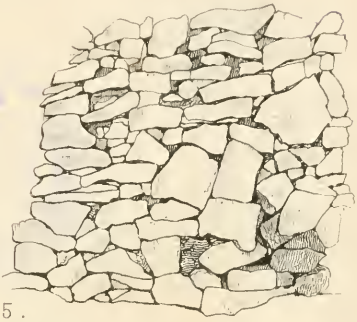

Fig. 4.

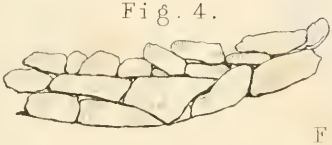

Fig. 5.

Fig. 6.

Fig. 7.

Fig. 8.

Fig. 9.

Fig. 10.

Fig. 11.

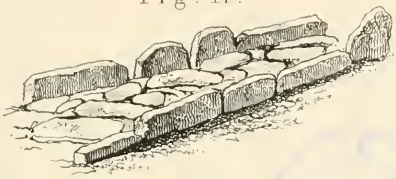

Fig. 12.

Fig. 13.

Fig. 14.

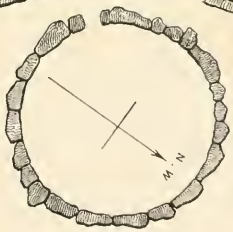

Fig. 15.

Fig. 16.

Fig. 17.

Fig. 18.

Fig. 19.

Fig. 20.

Fig. 21.

Fig. 22.

Fig. 23.

have the kind of construction given in figs. 2 and 3 ; where, though some of the blocks have been moved from their original position, the general character of the masonry may be determined. Another wall at the entrance-passage of the Carl's work, near Hathersage, in Derbyshire, is of similar construction (fig. 4), though with larger stones ; and is built in a curve, like the main entrance at Chûn Castle in Cornwall, at Worle, and some other places. The stones vary in size, and in another part of the same wall at the Carl's work is one measuring 14 feet 6 inches in length and 3 feet 4 inches in breadth.

The agger of a less carefully constructed camp is generally composed of rough stones and earth, or turf, in lieu of the wall of masonry ; and, in some, the outer walls are of rough stones and turf, while those forming the inner vallum are of blocks of larger size and more regular shape, varying from about 2 feet in length to 1 foot, with the interstices filled up with small angular fragments. Such are the inner walls at Dinas Castle near Penzance (fig. 5) ; a circular camp, with an outer and an inner (or main) wall ; the latter having the peculiarity of a lower wall close below and encircling it, which leaves a space, or passage, of about 5 feet in width between them (fig. 6).

Some few camps have a stone wall on one face, and an agger of stones and earth on the others ; and, in many of them, the lower part is faced with masonry, while the upper part is composed of a mass of broken stones, or of the latter mixed with earth. The broken stones so frequently strewn over the summit of walls in ancient British camps, and on the slope toward the ditch, seem to have been used for securing the palisades, to which those camps were so much indebted for their strength, and which, firmly imbedded in the stones heaped upon their bases toward the inner side of the wall, could not be readily forced out by the besiegers. The palisades were further strengthened by being wattled, or at least bound together by wythies or twigs of trees, and the mound of stones had the additional advantage of presenting to the besieged a commanding banquette from which to hurl missiles on the enemy. The forcible destruction, at a later time, of the palisades, and of the upper part of the vallum in which they were fixed, has caused the fall of that mass of stones, and accounts for the

quantity so often strewed upon the ground beneath the walls, as at Worle, Carn-Goch in Caermarthenshire, and other places; and the same downfall of the crest of the agger in all other camps explains its present rounded form, and the accumulation of earth and stone upon its now sloping, but formerly precipitous sides, as well as in the ditch below.

A revêtement of masonry, forming the lower part or scarp of the wall, and an upper mass of rough stones and earth, may be observed at Batt's Castle, near Dunster in Somersetshire; which, though called a Roman camp, is a British work, very possibly occupied at a subsequent period by the Romans, who added the mortar-built pillars at the western entrance. Nor is it surprising that we should find British camps so well fortified as they appear to have been when Cæsar speaks of them as defended "vallo atque fossa," and applies to that of Cassivelaunus the term "*egregie* natura atque opere munitum;" admitting that, in attacking them, the Romans were obliged to use the *testudo*, and to throw up a mound against the works ("*aggere ad munitiones adjecto*").

The walls varied in height; but some, even at the present day, are 15 to 35 feet high; though the ditches have been considerably filled up, and the whole of the upper part has been thrown down.

The counterscarp of the ditch was generally of earth and rough stones, like the small outer bank forming what may be called the glacis of the ditch, and was rarely of regular masonry; and the summit of the bank of each ditch was probably crowned, like the inner or main walls, with palisades embedded in the turf and stones; but a ditch was sometimes lined with masonry, when intended as a covert-way thrown out in a winding direction before the works, as at Wooston on Dartmoor, and a few other places.

The walls of Chûn Castle are built of much larger blocks than those used in the camps above mentioned; the rock in that granite district affording better materials for their construction, and they are built with considerable skill. Borlase thinks the inner wall was at least 15 feet high, its usual thickness is about 17 feet, and on each side of the gateway it is increased to 22 and 30 feet; Chûn also presents the best and most perfect specimen of two diverging walls, forming a projecting entrance-passage to the main

gate, and has the very usual arrangement of the outer and inner gateways, whereby they were placed diagonally to each other, in order to prevent the inner one being raked by an enemy, if he succeeded in forcing the outer entrance. This is common to many British camps (fig. 7). Sometimes each successive gateway is so placed that, on advancing to the next, the unshielded arm of the enemy was exposed to the missiles of the besieged; but this was not an established custom, as with the ancient Greeks.

The masonry of Chûn Castle is in parts very regular and strongly built, and the walls present a very smooth surface toward the ditch. Even the outer wall is constructed with well-fitting stones in nearly horizontal courses (plate 2, fig. 8), and its entrance-passage, which is 15 feet in depth, is of large granite blocks, one of which measures 4 feet 2 inches in length (fig. 9). The walls of towns on Dartmoor, as Grimspound and similar enclosures, are formed of massive stones; but Grimspound[1] is of far more importance than any others, having a diameter of 502 feet by 447 feet, and containing a village of twenty-five hut-circles. Its walls are 9 feet to 9 feet 4 inches thick, composed of large granite blocks, one of which measures 9 feet 9 inches long, by 4 feet 6 inches, and 1 foot 10 inches high, placed in the upper part of the wall, another is 8 feet 10 inches by 2 feet 3 inches, another 7 feet by 4 feet, and 1 foot 10 inches thick; and others are of various similar, and of smaller, dimensions. The position of these stones is sometimes horizontal, sometimes upright on their ends, sometimes on their edges or sides; and the general character of the masonry partakes, as usual in the old walls of towns and hut circles, of all the three arrangements (fig. 10). Sometimes too, the stones of the outer and inner surfaces of the walls at Grimspound are set parallel to each other, and other blocks are placed between them; but though frequently smaller in size, they are neither mere rubble, nor a mass of small fragments (fig. 11). The same style of construction is adopted in the walls of large hut-circles, on Dartmoor, when double; the lower stones being placed in the direction of the inner and outer faces; and some of the upper ones lying over them at right

[1] This name, which occurs again in Grim's-dyke, Grim's-ditch, etc., is derived from "Grima," the Saxon name of the Evil Being, and recalls our Devil's bridge, arrows, punch-bowl, etc. From "Grima" is also derived Grimalkin, the Devil's malkin or fairy.

angles across the wall (fig. 12); though this is not the universal practice; and they are mostly placed one over the other, in the same direction as the faces (fig. 18), with an occasional transverse one at intervals, until they reach the doorway (fig. 13), where two upright pillars of stone (*a*, *b*), and two more blocks placed upon their sides, or on their edges (*c*, *d*), form the doorposts and entrance-passage, supporting lintels which constitute the roof of this passage. Sometimes, though rarely, the walls of hut-circles are treble and are formed of the two outer faces and a line of central blocks, all three parallel to each other (fig. 14), with smaller stones between them; but many are single, being composed of one set of stones occupying the whole breadth of the wall, and placed horizontally, upright, or on their edges, or in all these various positions in the same wall (figs. 15, 16, and pl. 3, fig. 17). In some of the large hut-circles the stones are of very great size, and one at Teigncombe Tor, on Dartmoor, has in succession six granite blocks, measuring respectively 4 feet 11 inches, 6 feet, 5 feet 10 inches, 5 feet 8 inches by 2 feet 9 inches, 4 feet 11 inches, and 5 feet by 3 feet, and 3 feet in heighth (fig. 18). The boundary walls, which stretch for miles over hill and dale on Dartmoor, and which are found in Cornwall, Wales, and other parts of the island, are also built of stones of the same large dimensions; and are constructed in like manner of blocks placed upright, or on their edges, or flat on their sides, generally in a single row.

In many walls may be observed a principle of construction, which, having for its object to prevent any of the stones from slipping out of their places, is founded on experience and careful observation. For this purpose, several tall blocks are set upright at intervals in the ground, and the others, placed horizontally in the space between any two of these, are thereby secured within that fixed space, the upright blocks performing the office of binders to the whole structure (fig. 19); and this mode of building continued to be employed, to a late period, in the walls and houses of Devonshire and Cornwall. Of these walls some may now and then be seen on Dartmoor, forming the sides of old roads or fosse ways; and, in one place, I observed one with stones of the accompanying form and dimensions (fig. 20), from 4 feet 6 inches to 7 feet 6 inches in length, and averaging about 4 feet in height; and, as they are of

granite, the strength of the wall and the labour required for placing such stones in that position, give them a rank among Cyclopean works. They are, as usual, of rude natural form, unchanged and unfashioned by the hand of man, like the famous Cyclopean blocks in the walls of Tiryns in Greece, which, when placed upon each other, had their interstices filled up with smaller stones, and were not, as in polygonal work, cut to fit each other by the workman's pick, with the precision obtained from the leaden ruler they used, alluded to by Aristotle.

The British, like the old Pelasgic, builder was careful to introduce small stones only in places where a gap required them, after each large block had been fitted upon its neighbour; and did not commit the error of some modern masons, who think they imitate him, but who often make the block rest upon, and depend for support on, the small stones placed beneath it. The difference of the two systems of building may at once be perceived by the admirable arrangement in the old, and the defective arrangement in the later, method; in the first of which (fig. 21) the fall of any one, or all, of the small stones would not endanger the position of a single large block; while, in the other, it would impair the security, and perhaps cause the downfall of the whole superstructure.

In the original construction of the early British walls, horizontal courses were apparently unknown, except when the fracture of laminar rocks suggested their convenience. They were a later invention, and gradually introduced. The oldest method was to place the blocks upright on their ends, or on their edges; and the interiors of hut-circles long continued to be so constructed, even after horizontal masonry had been introduced (as may be seen in fig. 18); the circular form of these huts (which were generally about 23 feet in diameter internally) was intimately connected with the ortholithic arrangement of the stones; and, though the adoption of this mode of placing them in an upright position may not have given rise to the circular plan, it is evidently the one suited to a round, as horizontal courses are to a rectangular, building. Previous custom prevented the change from the round to the square plan, when horizontal courses were afterwards introduced; and it was thought preferable to adapt these last to the existing style, with an admixture of the older

arrangement. The same may be observed in the ortholithic structures of *Hagar Keem* in Malta, and of the *Torre dei Giganti* in Gozo; where horizontal courses of smaller stones have been added at a later time upon the large upright blocks of the old walls.

Custom still preserves that ancient mode of building in some parts of Devonshire and Cornwall; and in the neighbourhood of the Logan rock, and in the Land's End district, stables, pigstyes, and outhouses of various kinds are built of upright blocks of granite from 5 feet to 7 feet in height (fig. 23), in imitation of the walls of the old British inhabitants of the country. These outhouses, both in Cornwall and Wales, have handed down some of the principal features of their early British prototype; and the Welsh pigstye with its pointed stone or thatched roof, is said to retain the very form of the round British huts, showing that the term "tent," applied to them by Tacitus, was not altogether inappropriate. But I do not here propose to enter into the question of British houses; my object being merely to present a few observations on the walls and masonry of the ancient Britons.

ON ROMAN REMAINS AT BATH.

(*Continued from Journal, Dec.* 1857, vol. xiii, p. 273.)

BY THE REV. H. M. SCARTH, M.A.

In continuing my notice of the Roman remains found in Bath, the next altar which must be noticed is that found, according to Mr. Warner, in 1754, in the upper part of Stall-street. I would commence this notice by treating of this altar, because a very important error has been made in reading the inscription, which has been perpetuated from neglect of a close inspection of the stone. The inscription is as follows:—

PERIGRINVS
SECVNDI FIL
CIVIS TREVER
LOVCETIO
MARTI ET
NEMITONA.
V.S.L.M.