III.

NOTES ON FURTHER EXCAVATIONS AT BURGHEAD.

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While, in my former paper on excavations of the lower fort of Burghead, I had pleasure in recording the correctness of General Roy's plan of the fort, I regret to say that the first thing I noticed of importance about the upper fort was that Roy's plan of it was entirely wrong. The upper fort, at the north or sea end, was square, and, as far as can be now judged, had rounded corners. I wonder this has not been observed before, as, without any digging, it is quite apparent. The plan of the fort given by Pennant in the supplement to his Tour by Cordiner seems to be very accurate, and Pennant shows a cross rampart in the lower fort, which was there, but Roy does not show it. The upper fort then was an oblong square, except at the south-east end, where it is pretty correctly laid down by both Roy and Pennant. The width of the fort at the point of the promontory is 180 feet inside, but, allowing for rubbish, had likely been 200 feet when entire.[1] The seaward rampart had been of enormous size and width. No oak was got in it, but the facing-stones and fully half of the rampart has fallen a prey to the waves. Unless there was an area of land beyond it, as seems to have been the case, from Pennant showing a bit of it in his plan, I cannot see the use of so great a seaward wall.[2]

I cut the high rampart above the lower fort quite through, and down to the bottom in two places. The first cut was at the spot where the Elgin Literary and Scientific Association made a partial cutting some thirty years ago. This rampart had a foundation dug out of the pure white sand, on the edge of the hill, to a depth of $3\frac{1}{2}$ feet below the level

[1] I desire to record my debt to Captain Taylor, Burghead, under whose superintendence these excavations have been carried out in so highly intelligent and careful a manner.

[2] I have an old survey of Burghead, dated 1794, in which the fort is stated to have included $10\frac{1}{2}$ acres.

or floor of the fort. The bottom had been originally as pure sand as the side, but was perfectly blackened, to some depth, with decayed oak and vegetable matter. It appeared to me that the foundation of the rampart had been layers of oak logs laid on the sand. Only mere fragments of oak were got, but the depth of the black soil showed that the thickness of wood had been considerable. There was no foundation course of large stones (like a causeway) as in the lower fort, neither was there any wall standing.[1] There were some good facing-stones, but the centre was rolled pebbles, many of which were of large size. The rampart had apparently been greatly dependent on the oak in it, and the sand used in the packing had been washed out and down the hill as the oak decayed, leaving the stones behind. This washing out of the sand, and decay of the bottom and body of oak, had caused a complete collapse, and destroyed the facing-walls in the most thorough manner.

The height of the rubbish and stones was about 9 feet above the foundation, and the width of the rampart had been about 24 feet. When entire, it would be, perhaps, 16 feet high on the outer face, and 12 feet high on the inner. A good many small pieces of oak were got among the stones, but much decayed.

The facing-walls being destroyed, it was not easy to guess how the wood had been laid. I got here two planks, one of which was the most perfect plank I have found in the fort. It was quite flat on one side, but the other side had been slightly rounded. It was nearly 2 inches thick, after all its decay, about 4 feet long, and 8 to 10 inches wide. A good, squarish log was also got.

The next cut made through the wall was near the point of the promontory. This place had never been disturbed. The general features were the same, except the comparative absence of boulders. The whole mass of ruins was of freestone, with many very large and fine stones still remaining, for at this part the rampart had never been searched to extract stones for building purposes, as it had been where the last cut was made. The freestone used here was of a softer kind than any other I have seen in the fort. No marked or chiselled stones were

[1] The oak appears to have been through and through the whole wall, as in the Gaulish oppida.

observed, but most of the stones had rotted, and lost an inch or so of surface. The packing was of sand and freestone. The oak in this part was totally decayed,[1] but the black bottom, full of decayed wood, showed that it had been there. Facing-stones were found all through the mass, showing that the wall at this part had probably been sloped, and that the collapse had been complete.

There is another fact that goes far to show that the ramparts of Burghead had been in the same state of ruin as now in very early times. Two stone coffins of a rude type were dug up about thirty years ago—one, I am told, close to the flagstaff now standing, the other in the lower fort. One of these coffins was got on the top of the rampart, and at no great depth; whether it contained human remains I do not know. The coffin in the lower fort did contain human remains.[2] These stone coffins are now lost, but the lid of one, I think, I have recovered. Near this place I got two pieces of sculptured stones, with the key pattern of two different varieties; and it was not far from this place that I got, two years ago, an inscribed stone. One is tempted to ask, might not the earliest burial-place have been here? I have only found in the present churchyard part of a shaft of a cross, and it may have been carried there for use as a tombstone. I find no very old graves in the present churchyard, though doubtless a stone-built Celtic church stood there.

The next point of importance was the discovery that a paved roadway ran through the fort. I opened up this paved road from the point of the promontory down the fort all the way to Bath Street, where the street and houses obliterated it. Where cut by the houses it appeared

[1] I have lately examined much oak of the Roman period in different parts of England, and it is very fresh, as a rule, when compared with the Burghead oak, while the wood is much the same in quality, and in both cases is so hard that a saw will hardly cut it. At Ribchester many oak planks were found in the Roman wall 6 feet below the bottom of the old graveyard, where burials had taken place for hundreds of years. These planks are as fresh as possible, and similar in size and make to those of Burghead upper fort. At Silchester, too, the Roman oak planks, even in the lining of the two wells recently discovered, were perfectly sound and fresh, although, in such a situation, one would fancy that decay would soon set in.

[2] See Ordnance Survey map of Burghead.

to be going straight for the centre of the graveyard. This roadway was 16 feet wide, and paved with both square stones and boulders, some of large size and rammed hard.

Having completed my examination of the upper fort, I resolved to have the rock-cut cistern, or "Roman Well," as it is popularly called, fully examined. A paper on the subject by me appeared in the *Proceedings* for 1890, in which this curious structure is described under the title of a bath; but up to this time, from causes which I need not enter upon, it was impossible to have the water drained off. This was a serious task, as sixteen men had to be put on to pass up the buckets from hand to hand, and after many hours of this work the basin was cleared. It proved to be neither a bath nor anything else than a well—"the well of the fort." The construction, however, was of the most scientific character, and showed great engineering skill. The rounded corners were carried fully out in the bottom and all round the sides—very smooth and beautiful work. Many years ago water was very scarce at Burghead, and the people blasted the bottom of the well to increase the supply. The rock showed that many shots had been fired, and the bottom deepened from 6 to 18 inches. Six blast-holes I found were unfired; if they had been, the whole chamber would have been blown to pieces; but some friendly hand, fortunately for archæology, had interfered. As it was, the chamber had been much rent and cracked. Quite enough remains of the original bottom to show what like it had been. There is only one step (a ledge), some $2\frac{1}{2}$ feet from the bottom, carefully cut for the foot to rest on when drawing water. What were believed to be two more steps were only a huge square boulder and a broken ledge of rock. The supply comes from a porous rock of a pebbly nature, underlying the close-grained sandstone. The porous rock rises about a foot from the bottom, through which the water oozes so slowly that the basin took six days to refill.[1] The water was at first very sweet, but became brackish after a while. The curious hole in the corner, which has been so frequently referred to, was next washed out and examined. It is 13 inches in diameter, and the cup-shaped hollow in the centre is 5 inches diameter; the depth to the bottom of the

[1] This slow gathering of water explains the bath-like size of the well.

cup is 9 inches. When washed out, the cup appeared to have been the socket for a revolving pivot.

There is a Roman well at Chester, under the Rows, that has a feature of resemblance to the Burghead well, too great to be passed over. I visited it last March. This well is in a rock-cut chamber, partly built, and part of the public hypocaust. The chamber is large. The well is oblong, about 9 feet by 4 wide and 4½ deep. It was dry when I saw it, but fills in rainy weather. The water oozes through the rock. However, the point I wish to call attention to is a round hole in the west corner of the chamber. This hole is of a cup shape, like the cup in the hole at Burghead, about the same size. It had been a pivot-hole, and some round object had revolved in it, as the rock up the wall was worn into a semicircle for nearly 2 feet.

I made a small excavation in the lower fort of some importance. We cut a trench down to the floor of the lower fort, and from side to side, during which we came upon the foundation-stones of buildings of some kind placed in a row on each side of the fort. There had been a large open space in the middle. Only the foundations remained, as constant ploughing long ago had removed the walls. These walls were 3 feet wide, and I followed one of them some 30 feet, but was obliged to conclude work, and leave the matter over for a future period. Here we found innumerable bones of every kind and size.

I afterwards uncovered a refuse-heap, which lay at the foot of the inner side of the rampart; and as it was under 4 feet of rubbish, we did not examine it until a considerable portion had been laid bare. My friend Dr Gordon, of Birnie, brought with him, to see the bones, Mr William Taylor, an expert in anatomy, and who has acquired a name by his discoveries in the caves of Mexico and Texas.

The chief feature in this refuse-heap is the great quantity of bones, horn cores, and pieces of the skull of the *Bos longifrons*. Another feature is, that no bones of the dog have been got, and no gnawed bones have been found. The deposit has apparently been the refuse-heap of the dwellers in the row of stone buildings inside the fort, as it lay between them and the rampart. The skulls, which I supposed to be those of horse, were of very large red deer, and two kinds of deer were found.

The following is Mr Taylor's Report :—

I went carefully through all the bones in the office, but I did not separate out ribs and broken vertebræ and other small fragments. None of the long bones of the bos, &c., remained whole; all had been broken up; even the metacarpals were split longitudinally. They had been intentionally split. Fish bones and bird bones were scarcely represented, and I cannot identify them. I do not know how wild and domestic cats can be distinguished, and I am in the same difficulty with pig and wild-boar.

Bos.—Many fragments of skulls, jaws, separate teeth, ribs, vertebræ, fragments of femur, fragments of humerus, whole scapula and broken ones, and wonderfully fresh metacarpal and metatarsal bones, longitudinally split.

Sus.—Fragments of pigs' skulls, young and old, jaws and separate teeth, scapula and humerus.

Equus.—Only one small fragment of horse bone, distal end of metacarpal.

Ovis.—Fragments of sheep's skull, five pieces of jaws with teeth, three scapulæ, and two or three metatarsal bones and humerus. Some of the jaws were of young animals, and it is not easy for me to say if they are not goats.

Felis.—Hip bones and thigh bone (femur) of rather young cat.

Lepus.—Arm bone (humerus) of hare, and also humerus of rabbit.

At the bottom of the refuse-heap, under all the bones, we found an iron axe, a chisel, a blue bead of vitreous paste, a sharpening stone, &c.