

## II.

ACCOUNT OF THE EXCAVATION OF THE ROMAN STATION AT  
INCHTUTHIL, PERTSHIRE, UNDERTAKEN BY THE SOCIETY OF  
ANTIQUARIES OF SCOTLAND IN 1901.

## I. HISTORY OF THE SITE AND DESCRIPTION OF THE EXCAVATIONS.

By THE HON. JOHN ABERCROMBY, FOREIGN SECRETARY.

At the end of February last year, 1901, the Society of Antiquaries of Scotland began an extended series of excavations at the Roman camp on Inchtuthil, which lasted till the end of August. They were conducted under the immediate supervision of our experienced and indefatigable clerk of works, Mr Alexander Mackie. The Society was induced to undertake this important work, owing to the generous offer of Sir Alexander Muir Mackenzie of Delvine, on whose property the camp lies, to make no charge for any temporary damage that might accrue to the pasturage or the plantations in the course of the exploration. This proposition was all the more acceptable, for on other occasions the Society has had to pay very heavy damages for disturbance and breaking the surface of land under grass. The shooting tenant, Mr Shepherd, also made no objection whatever on the possible plea that his pheasants might be disturbed. Throughout the whole operations Sir Alexander showed the keenest interest in the work, and there were few days on which he did not visit the ground. The Society of Antiquaries is greatly indebted to his love for antiquarian research, and it is desirable that this should be placed on record.

I must preface my further remarks by observing that all the details of the excavations will be given by Mr Ross, who undertook the arduous task of surveying them and then of laying them down on paper. All I have to do is to give a general topographical description of the camp and its vicinity; to give a brief summary of what previous visitors have written about Inchtuthil in the past, and to make a few general observations that seem to be legitimate inferences from facts that are now brought to light. But I purposely abstain from even referring to any

of the far-reaching speculations that have often been indulged in, concerning the military operations of the Romans in these parts, because the excavations have unfortunately disclosed nothing that would permit any reliable opinion on such points, however interesting they may be. An archæological record in the first instance should be as objective as possible.

*Topographical Description.*

The Roman camp at Inchtuthil is situated in the parish of Caputh, Perthshire, on the left or north bank of the Tay, about 7 miles south-east of Dunkeld and some 15 miles by road from Perth in a northerly direction. It occupies a position on a flat gravelly plateau of somewhat triangular shape, with its apex to the north, and covering an area of about 210 imperial acres. As the plateau rises to a height of about 55 feet above the surrounding level, and its banks are everywhere very steep, save on the south side where it shelves in places, it stands up quite isolated from the surrounding country, and at one time has been, as its name implies, an island. The Tay, which is apt to change its course from time to time, sweeps at present past the south side at a distance of from 300 yards to 500 yards from the base of the plateau. The old bed of the river, which is distinctly visible, almost touched Inchtuthil on the south-east side, and that at a comparatively recent date. The low flat ground to the north and west is still liable to inundation when the Tay is in spate, and under such circumstances the plateau of Inchtuthil is transformed into a temporary island. If old maps can be trusted, the river at one time formed a loop along the whole west side of the Inch, and therefore more nearly surrounded it than at present. In the time of the Romans all this low ground must have been swampy in the extreme, and access in any direction must have been difficult on this account, except, perhaps, in the height of summer. From the apex of the plateau, where Delvine House stands, northwards across the low ground to the higher and hard ground traversed by the road to Dunkeld, is about half a mile. On the north-west side, near the head of the triangle, about 100 yards from the base of the plateau and parallel to it,

is a narrow sheet of water, nearly 500 yards long, known as Delinie Loch. A rivulet that issues from it flows along the northern, base, of the plateau, and eventually falls into the Tay. At present the plateau is under grass, with alignments and clumps of trees. The steep banks are everywhere thickly covered with fine timber. From this description it will be seen that, from whatever side it is regarded, Inchtuthil presents an ideal site for a fortified station.

Before proceeding to summarise the accounts of Inchtuthil, given by Maitland and others from a hundred to a hundred and fifty years ago, it will be better, I think, to give a very general description of the fortifications as they at present exist. In doing so, I shall take care not to trench on Mr Ross' ground.

The straightest and least broken side of the triangular plateau faces north-east, and perhaps on this account what I believe to have been the front of the camp was constructed parallel to the edge of its steep slope, almost on its brink. The camp was laid out as a square, each side measuring about 500 yards, with an area of over 55 acres, or nearly a fourth of the entire plateau. Unfortunately, the ramparts no longer present their original appearance. The whole of the front and a great part of the north-west side, facing Delvine House, have disappeared, while there are great gaps in the remaining sides, especially towards the south-east angle, where crofters had formerly established themselves. The widths of the rampart and ditch were each about 20 feet, and the depth of the latter was from 6 to 7 feet. These were single, except on the north-west face, where they were doubled at any rate in part.

According to General Roy's calculations, a camp of this area was adapted for 11,000 men, or one legion with an equal number of auxiliaries. A road, 20 feet wide, corresponding with the *via principalis*, divided the camp into two unequal parallelograms, the larger one being towards what I regard as the front. No signs of a protracted occupation were discovered inside the *vallum*, but fragments of querns, Roman pottery, iron spikes, nails, etc., were sure evidence that Romans had been there for more than a few nights. The prolongation of the *via principalis*

southeastwards leads to a slight gap, which descends the slope to the old bed of the river, where there may have been a ford. There is still a ford close by at Hooker's Point. The better to defend access to the camp in this direction, the Romans constructed a rectangular redoubt at a distance of about 150 yards from it, one side of the work being parallel to the north side of the road, where it passes down the gap, another being parallel to the edge of the steep slope. From north to south it is about 173 yards long and about 133 yards in width. The curious feature in connection with this redoubt is that no means of ingress is visible in the direction of the camp. The parapet is apparently everywhere continuous. But the entrance may have been on the east side, where the rampart is now destroyed, and where there is a slight gap and pathway in the face of the steep bank. In that case, the 'Redoubt' was perhaps not so much a defensive work as an enclosed space for parking baggage animals.

In the opposite direction the *via principalis*, after passing the *porta sinistra*, takes a more northerly bend in the direction of the present approach to Delvine House. My impression is that it followed on the whole the existing avenue, for it is the tendency of roads to keep as near as possible to old tracks that have been in use for time immemorial. At the centre of the south rampart there is an opening that corresponds with the position of the Decuman Gate, but no road could be traced outside it, nor indeed northwards towards the Prætorian Gate. The main traffic must have been conducted along the *via principalis*, as its prolongations in a northerly and easterly direction were the only roads by which access to the camp was practicable for animals. No traverses were found in front of any of the gateways.

The best evidence that the camp was not quite temporary, but intended to serve as a rallying point for a considerable time, is afforded by the almost accidental discovery of a Roman bath, or villa, provided with a double heating apparatus. It lay about 100 yards from the south-east angle of the camp, and had a frontage to the east of about 125 feet, its greatest width being 75 feet. Near it, on the north side, were vestiges

of what were probably two plank structures which might have served as stabling for the horses or as outhouses of some kind or other. The villa and these two outhouses were cut off from the camp by a ditch 5 feet deep. In plan the ditch presents four faces in form of a flatish bastion, with its salient angle directed towards the camp, but the ends of the flanks are open, and do not come as far as the edge of the steep slope of the plateau. Any rampart that may have existed has now been levelled, but it probably was never more than the contents of the ditch. My impression is that the ditch was only designed to fence off the villa and its appurtenances from the intrusion of the soldiery. Its open ends and two entrances, facing the camp, seem to show that it had no defensive significance. Outside the northern flank of the ditch, and nearer the camp, the foundations of structures, disposed in the form of a short street, also point to a Roman occupation of some duration. Near this corner, and on the outer face of the inner rampart, four large ovens were brought to light, and these are probably only a few out of many that were required for the use of the troops.

The camp and redoubt are not the only earthworks on the plateau. The south-west angle of it is cut off by the western *vallum*, which runs nearly north and south from one edge of the slope to the other, at a distance of about 150 yards from the south-west angle of the Roman camp. As the ditch is on the west side of the vallum it may well be of Roman construction. It cuts off a portion of the south bank where it is most shelving and easy of approach. Beyond this, at a distance of about 550 yards, the extreme south-west angle of the plateau has a slightly rounded end, about 90 yards long by 60 yards wide, which is defended on the east side by five ramparts and as many trenches, drawn across from edge to edge of the steep slope that nearly surrounds the point. The site of a hut or hearth, roughly paved with large stones, was found at an inconsiderable depth within the area of this fort, and nothing was discovered to indicate a Roman occupation. The probability is that the fort is of native construction, and dates from a time posterior to that of the Romans, for otherwise they would certainly have destroyed it.

Before concluding this section of the report, I ought to explain why the north-east face of the camp is to be considered the proper front, as two of my friends take quite a different view. One of them believes that the Inch was naturally so isolated by nature, and so strongly defended by the bends of the river and the marshy ground which surrounded the plateau, that an enemy could not attack it favourably in any direction. The camp was therefore like a modern fortress, fortified equally all round and fronting in every direction. But this view is negatived, I think, by the fact that the north-east side is stronger by nature than the other faces. And although the Inch was protected by the ancient bends of the Tay, and also by soft ground, we do not know for certain that the river in summer would have proved a great obstacle to lightly clad Caledonians. These necessarily could not be exposed to losses at long range, as would be the case nowadays, while the soft ground would protect them from attack by Roman cavalry. The western *vallum*, too, supposing it to be contemporary with the establishment of the camp, seems to show that a slight attack might even be expected from that direction.

My other friend maintains that the proper front faces the south-west or what I should term the rear. He does this on the ground that in the camps along the Roman *Limes*, between the Rhine and the Danube, where the *via principalis* also bisects each camp into two unequal parts, the smaller parallelogram is nearly always to the front and the larger to the rear. Therefore, at Inchtuthil, we must expect the same thing. But the exceptions show that this was only a rule, not a fixed law like the direction of the *via principalis*, which invariably ran parallel to the front and rear. This rule must therefore have depended on circumstances, and we do not know that the camp at Inchtuthil and the camps along the *Limes* were contemporary and therefore likely to be constructed on exactly similar lines. Besides, it must be observed that the front of these camps is always directed outwards and never inwards in the direction of the line of retreat.

The question of front, I take it, must be regarded from quite a

different point of view, and settled by reference to the laws that underlie all regular military operations. In regular warfare the direction of the strategic front of an invading army is fixed by the object intended to be effected by the campaign, and remains invariable during the whole operations, though, of course, that does not preclude tactical changes of front, either of the whole army or of fractions of it, for special purposes. These are mere incidents, for the original front and its correlative, the line of communications in rear, must always remain the same. Before reaching Inchtuthil the Romans had certainly established themselves securely along the isthmus between Camelon and the mouth of the Clyde. Using this as a base they advanced by way of Ardoch to Inchtuthil, which shows that their front lay, roughly speaking, to the north-east and their line of retreat to the south-west. The officer, who laid out the camp, might easily have placed it so that there was a free space all round, but he purposely placed the north-east face at the edge of the steep bank, and thus made it stronger than the other sides. This clearly shows from what point the Romans expected an attack. It was from the north-east or strategic front of the Roman invaders, for it was in that direction that the natives naturally massed themselves in order to repel the invasion of their country. Now, if the front of the camp lay to the south-west, it would mean that the Roman legion considered its front and its general line of retreat to lie in the same direction. From a military point of view this is impossible, and a contradiction in terms. Otherwise the expressions 'front and rear,' 'advance and retreat,' become equivalent, interchangeable terms, and Napoleon's disastrous retreat from Moscow was merely a disastrous advance upon Paris.

*Earlier mention of Inchtuthil.*

Writing in 1757 Maitland<sup>1</sup> makes mention of the mansion-house and village of Delvin as lying about 6 miles north-east of Perth, on the

<sup>1</sup>*History and Antiquities of Scotland*, by William Maitland, London, 1757, vol. i. p. 199.

north side of the Tay, and where there appeared plainly to have been a Roman station.

It seemed evident to him that the fortress of Delvin, as he terms it, must have been a town and not a camp, on account of a *balneum* or bath discovered there a few years before he visited the place. He did not, however, see it himself, as the ground was under crops at the time. A number of Roman bricks had been dug up, but he could not learn that any coins or inscribed stones had ever been found there. The station seemed to have been about 500 yards square, fortified with a double rampart and a broad deep ditch. The interior rampart was of stone and the outer one of earth, taken from the ditch. The entrance of the military way, which runs through the town, was defended at the ferry across the Tay by a strong fort about 150 yards in length and 120 in breadth. As an additional strength to this station he noted at the western extremity of the hill a very strong semicircular fort, fenced on the eastern side by five very high ramparts of earth and an equal number of very deep ditches. All the other sides were secured by the natural declivities of the hill. He estimated the slope at about 100 feet of almost perpendicular height, whereby it was rendered, as it were, impregnable.

The only interesting point in this narrative is the mention of a Roman bath, which, as you will presently understand, could not refer to the villa with two hypocausts recently brought to light. It was not unnatural for Maitland to believe that the interior rampart was built of stone, for, as a matter of fact, an inside core of stone runs all along as the foundation of the rampart, and over it the earth was heaped up. He probably saw a *bit of the rampart where the stone was exposed*. His statement that the ramparts were double everywhere is evidently an inference from observing this on one side. He evidently believed in the absolute uniformity of Roman camps.

The next writer is Pennant,<sup>1</sup> in 1772, who gives the plan that is reproduced here (fig. 1). He calls the place Inchstuthel,<sup>2</sup> or the

<sup>1</sup> *A tour in Scotland*, 1772, Part ii, pp. 67-70.

<sup>2</sup> At one period the sound of *sh* was sometimes spelt *sch* and *chs* by Scottish writers.



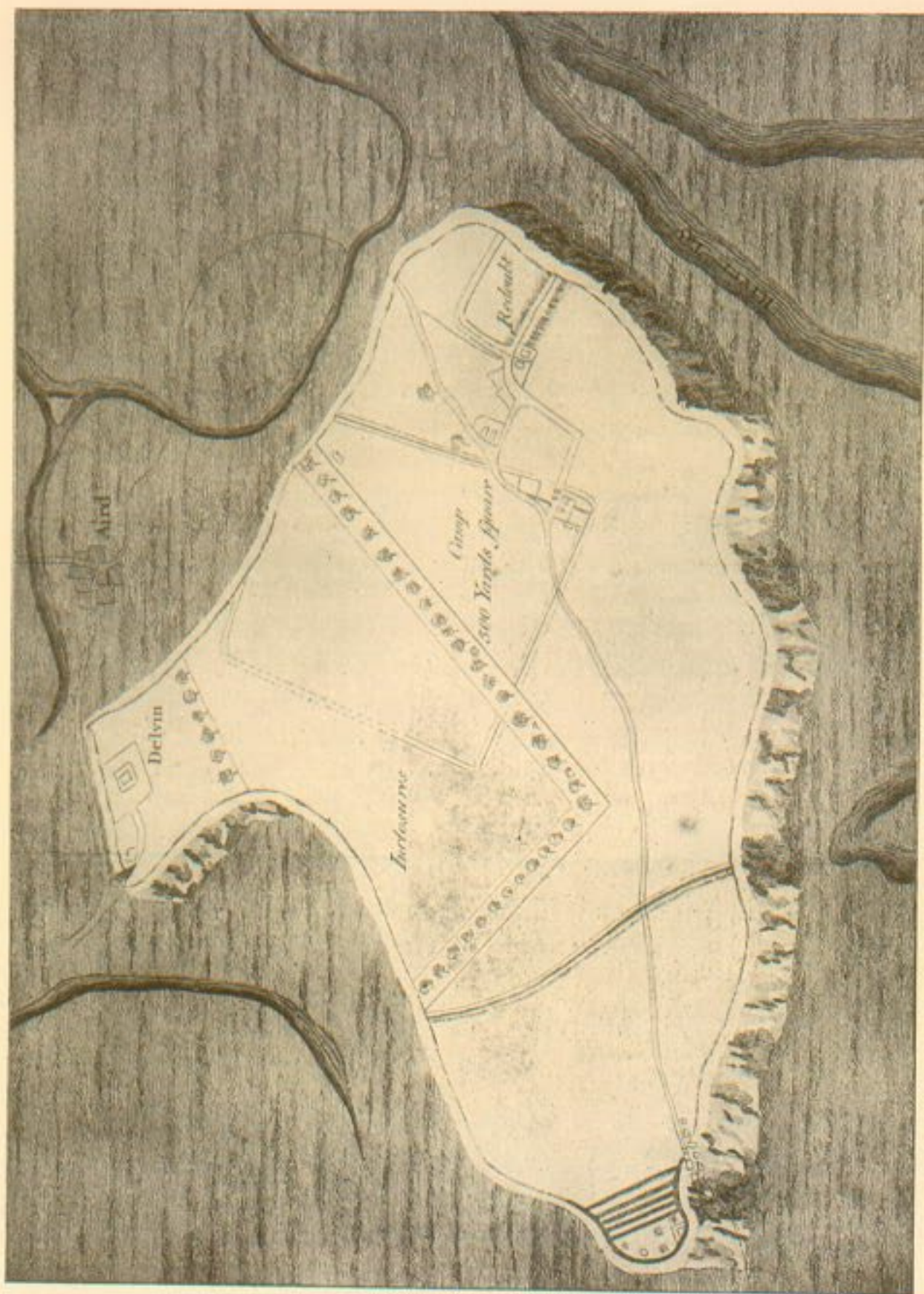


Fig. 1. Pennant's Plan of Inchtuthil, 1772.

Island of Tuthel, in which he is probably correct, though the proper spelling is Tuathal, gen. Tuathail, now Anglicised in Ireland in the form of Toole. Pennant remarks that the situation is of strange irregularity, on a flat of 154 acres Scots, steep on every side, in every part of equal height, about 60 feet above the plain on which it stands.

The Romans, he goes on to say, did not neglect so eligible a site for a station. Notwithstanding the great changes wrought by agriculture and plantations there are still vestiges of a station 500 yards square. The side next Delvin House is barely to be traced, and part of another borders on the margin of the bank. There is likewise a small square redoubt near the edge, facing the East Inch in the Tay, which covered the station on that side. The first station was once enclosed with a wall 14 feet thick, the foundations of which are remembered by two old farmers, aged about 70. They had frequently heard from their fathers and grandfathers that ashes, bricks, iron utensils, weapons, and large pieces of lead had repeatedly been found on the spot in the course of ploughing. About thirty years before his visit vestiges of a large building had been discovered to the west of the station, the whole ground being filled with bricks and mortar. A rectangular hollow made of brick was still entire, which he estimated to be from 10 to 12 feet long, 3 or 4 feet wide, and 5 or 6 feet deep.

Round the edge of the plateau he observed in some places a mound of stones and earth, in other parts it was less visible or entirely destroyed. He regarded this as showing a probability that the Picts had a town here, fortified all round with a dyke. The stones used were not found on the spot, but brought from a quarry two miles off. To the same people he seems to ascribe the fort or citadel, as he terms it, at the south-west angle of the plateau, and also the western vallum, which he regarded as their first line of defence. The citadel was cut off from the plateau by five great dykes and as many deep fosses in such a way that he considered it impregnable.

He adds that monuments of the dead are very frequent over the face of the plain. The tumuli are round, of no great height, and surrounded

by a foss. Many bones have been found in these barrows, neither lodged in stone chests nor deposited in urns.

Maitland's statement about the finding of a Roman bath or structure of some kind is confirmed, and Pennant makes it more precise by saying that it lay to the west of the camp. It is quite certain that this Roman *balneum* was not the same as the structure unearthed by our Society. The good condition of the plaster lining of the bath and the lead pipe, found in position in connection with it, amply disprove such a supposition. Pennant evidently depended a good deal on unsifted hearsay. The old farmers, who used the stone core of the ramparts as a convenient quarry, led him to believe that the camp had once been surrounded by a wall 14 feet thick. His belief that the plateau was once surrounded by an earthen rampart cannot now be verified, as time and new paths have changed or cut away the original margin of the plateau. But it is not impossible that the south-west corner cut off by the western vallum was so enclosed. And the north-east angles of the camp and redoubt may have been united by a vallum, as a small portion is still to be seen outside the above angle of the redoubt.

The next writer to be mentioned is Major-General William Roy,<sup>1</sup> who visited Inchtuthil in the last quarter of the eighteenth century. It is situated, he says, on the east side of the Tay, about 11 miles north of Perth. The name, and the old course of the river still distinctly to be seen, prove it to have been formerly an island, and in extraordinary floods it is so to this day. The general figure is a triangle, on the north point of which stands the house of Delvin. He fortunately gives a large plan of Inchtuthil, which is here reproduced (fig. 2). The old works remaining here consist of four parts.

*First*, a camp of about 500 yards square; *second*, part of a square redoubt, near the east point of the island, on the top of the bank overlooking the Tay; *third*, a long line to the westward of the camp, extending across from one bank to the top of the other; *fourth*, a strong entrenched post on the extreme point of the island towards the west. The contour

<sup>1</sup> *The Military Antiquities of the Romans in Britain*, London, 1793, p. 75.

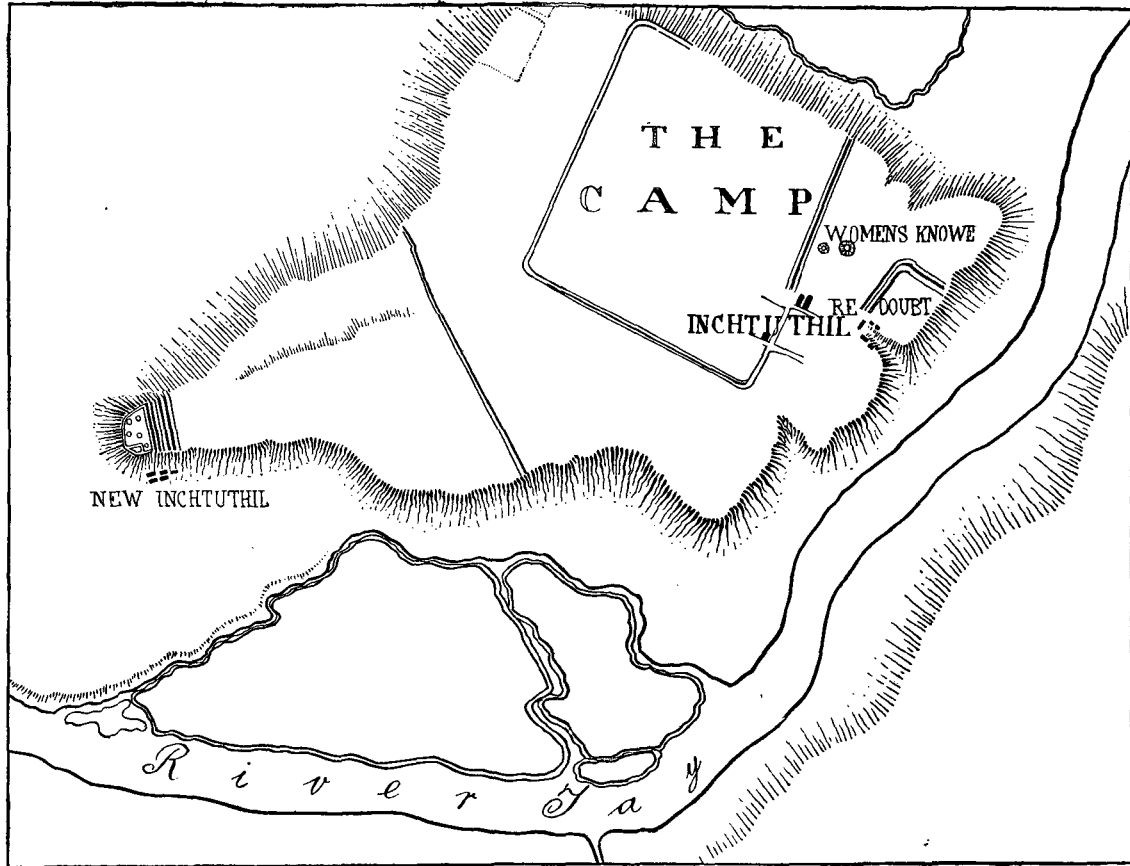


Fig. 2. General Roy's Plan of Inchtuthil.

of the camp could everywhere be traced, excepting part of the north side, which had suffered from the encroachments of the river, and also that angle of it near the village of Inchtuthil, which is ploughed down. What might have been the extent of the other works mentioned cannot now be determined, since all of them seem to have been in part washed away. This camp would contain about 11,000 men, that is to say, much about the same number with those of the smaller kind belonging to Agricola. But he goes on to argue that the works must have been thrown up at a later period than that of Agricola, as it wanted the gates which distinguished his camps, and its general form differed from that of Agricola's camps. He ascribes it to Lollius Urbicus.

The fort at the south-west angle he describes as of semicircular form, with an imperfect breastwork humouring the curvature of the bank; secured on the land side by five parallel intrenchments running across the point.

General Roy also mentions the tumuli, and thought they indicated a Pictish or Danish occupation after the departure of the Romans.

Bishop Pococke,<sup>1</sup> writing in 1760, has not much to say, and that little is quite unreliable. He avers that the old name of the place is Inchstrath-hill, which is said to be the ancient city of Cullen that consisted of many strong castles belonging to the Picts, who burnt it that the Romans might not get possession of it. This last piece of impossible news is taken from Hector Boece.

The author of the description of the parish of Caputh, in the Old Statistical Account, borrows partly from Pennant, but differs in the account of the walls of the great camp. These, he says, were  $9\frac{1}{2}$  feet thick, and strongly built of stones brought from a quarry 2 miles distant. The stones have been gradually removed, and the walls are now almost levelled by the plough. In the course of ploughing, fragments of weapons and some entire utensils were formerly found.

The Roman camp at Inchtuthil is also mentioned by James Knox<sup>2</sup> in

<sup>1</sup> *Tours in Scotland*, 1760, Scott. Hist. Soc. Publications, p. 225.

<sup>2</sup> *The Topography of the Basin of the Tay*, 1831, p. 59.

1831 and by Robert Stuart<sup>1</sup> in 1845, but as their accounts are brief, and offer nothing new, it is sufficient to refer to them without making any quotations.

*General Observations and Deductions.*

One of the first requisites of a good camping ground is an abundant supply of wood and water. There is no reason to doubt that wood was easily obtainable at Inchtuthil during the Roman occupation, as the earth of the banks is well suited to the growth of trees. Though there is no water on the surface of the plateau, there are springs on the banks, especially at the south-east side, while baggage animals would be easily and safely watered in the river itself.

In choosing Inchtuthil as the site for a station, it seems clear that the Romans acted with due circumspection. Before commencing operations they must have discovered a stone quarry at Gourdie, about two miles north of the camp, for stones from that locality were used as an inner core to the earthen ramparts. Another kind of stone employed, chiefly in the construction of the villa, must have been brought from Innernytie or from Cargill, one lying about  $2\frac{1}{2}$  miles to the south, the other at the same distance to the south-east of Inchtuthil, and both on the other side of the Tay. All this proves that the country had been reconnoitered with care, and the Romans knew beforehand where to obtain the most suitable building material. Limestone for making cement is to be found in the hills at no great distance to the north of the camp. The large red tiles used in the construction of the villa were probably brought from a distance, and perhaps by water, though nowadays there is an obstruction to the navigation of the Tay at Campsie Linn, 4 miles south of the camp as the crow flies.

I have already mentioned the position of the bath or villa as lying outside the south-east angle of the camp. The other Roman structure, whatever it was, mentioned by Maitland and Pennant, lay somewhere on

<sup>1</sup> *Caledonia Romana*, 2nd ed., revised by Robert Thomson, 1852, p. 210. The 1st edition published in 1845.

the west side, and very possibly, if we take into consideration the symmetry of Roman ground-plans, at a corresponding distance from the south-west angle of the station, where it would almost abut upon the western *vallum*. If so, both stone buildings were slightly in rear of the camp, and inferentially in the safest and least exposed positions. Any attack must therefore have been expected from the direction of the front or of that small part of the right flank that lay north of the redoubt. In other words, the Romans seem to have anticipated a hostile assault from the direction of Stormont and Coupar Angus rather than from the upper valley of the Tay and the interior of Perthshire. And if the Romans intended to advance it would naturally be in a north-easterly direction, so as to encounter their enemy, and not up the Tay in the direction of Atholl. As a military position it is well adapted, both to cover the rear of an army operating in a north-easterly direction, or to block, if necessary, the valley of the Tay, which forms, at any rate, a natural highway into the centre of Caledonia.

The question as to the probable date of this camp is one of the most interesting that can be raised. All that can be said in this respect is that an unworn, though highly oxidised, brass coin, most probably an early issue of Domitian, according to Mr Haverfield, was found during the course of the excavations. His reign extended from September A.D. 81 to September A.D. 96, and therefore coincided with the time when Agricola was campaigning in Caledonia. It is therefore possible that early issues of the new coinage might reach Britain before the last campaign in A.D. 86 was brought to a termination. So, in spite of Roy's adverse opinion, it is within the bounds of possibility that Inchtuthil was occupied by one of the legions of Agricola. An expert in Roman pottery may perhaps one day be able to tell us whether this possibility is confirmed or not by the few fragments of 'Samian ware' that have recently been unearthed. For the present the date of the camp must still be treated as an open question.

To account for the scarcity of Roman objects at the camp or station of Inchtuthil, Mr David MacRitchie, F.S.A. Scot., who is unfortunately

unable to be present and speak for himself, has sent me a very interesting communication. He refers to a paper read by him before our Society in 1899,<sup>1</sup> in which he describes an underground house at Pitcur, only 8 miles from Inchtuthil, near Coupar Angus, and figures a Samian bowl found in it. With it was a Roman coin, now unfortunately lost. In another earth-house at Pitcur, opened in 1863, were found fragments of Samian ware. And in a third underground dwelling at Tealing, 9 miles east of Pitcur, opened in 1871, the finding of a piece of Samian ware has been recorded.<sup>2</sup> Hence, in three underground houses within 18 miles of Inchtuthil 'Samian ware' has been discovered, and in one of them a Roman coin as well. Mr MacRitchie then directs our attention to the inherent possibility of this Roman ware having been obtained by the natives either from Inchtuthil or some other Roman station in the vicinity, the site of which has not yet been discovered. He also mentions that "the remains of a vase or urn of red, embossed Samian ware" were found in an underground house at Fithie, in the parish of Farnell, near Brechin, in 1868.<sup>3</sup> As in this instance, the distance from Inchtuthil is much greater—more than 30 miles to the north-east Mr MacRitchie suggests that possibly this 'Samian ware' came from a rectangular camp, supposed to be Roman, about 10 miles from Brechin.

EXPLORATION OF THE 'WOMEN'S KNOWE' INCHTUTHIL, PERTHSHIRE, IN AUGUST 1901. BY THE HON. JOHN ABERCROMBY.

The 'Women's Knowe' or 'Gallows Knowe' is marked on the Ordnance Survey map, and lies about 50 yards to the east of the outer rampart of the south-east side of the Roman camp at Inchtuthil, in the parish of Caputh, Perthshire. It has a diameter of 93 feet, and a height of 6 feet. Externally it presents the appearance of a small mound superimposed upon a larger one, the difference in size forming a berm round the upper mound. In reality this berm hides a small trench that surrounded the tumulus. The surface of the knoll is irregular, and is

<sup>1</sup> *P.S.A.S.*, xxxiv. pp. 202-214.

<sup>2</sup> *P.S.A.S.*, x. p. 288.

<sup>3</sup> *P.S.A.S.*, viii. pp. 473, 474.



planted with trees, of which twenty-seven are still standing ; another has fallen, and one or two stumps still remain in the ground.

Operations were begun in the forenoon of Tuesday, August 6th, and finished on the 8th. A trench, 4 feet wide, was first cut across the mound in a line running  $35^{\circ}$  east of north (magnetic). Below the turf was a capping of water-worn stones, about the size of one's fist, though some were four or five times as large. This layer of stones was from a foot and a half to two feet deep, and among the smooth pebbles were a few rough Gourdie stones that may have come directly from the quarry, 2 miles off, but were more probably taken from the Roman rampart which contains many Gourdie stones. The water-worn pebbles may have been carried up from the old bed of the Tay at the foot of the plateau. Only three foreign objects were found in this

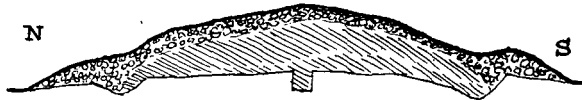


Fig. 3. Section across the Women's Knowe from north to south.  
(Scale 32 feet to an inch.)

outer casing of stones : a minute fragment of bright red brick, which lay nearly over the centre at a depth of 6 inches ; a minute piece of red pottery or brick at a depth of 18 inches from the surface, and 12 feet from the centre in the northern side of the cutting ; a small piece of bluish glass, with a slightly curved surface, at a depth of 20 inches, and 9 feet from the southern end of the cutting. Further, a large block of sandstone, with an artificial groove, 4 inches long and nearly  $\frac{1}{4}$  of an inch wide, made with a blunt tool and not by rubbing, was discovered about 6 inches from the upper surface and 6 feet from the centre in the northern half of the cutting.

The rest of the mound down to the natural level was composed of fine light coloured clayey loam, almost devoid of stones, and so compact that it must have been laid on wet and puddled. It was discovered

that under the berm was a ditch, and that probably the tumulus had been raised over a very slightly raised piece of ground.

On reaching the hard gravel of the natural surface below the centre, several largish stones were encountered. When the gravel was removed we saw what at first sight looked like a long cist of rough stones lying nearly east and west, paved with five large flattish ones, though these formed a very rough and irregular bottom, and without any capstones. This, however, was a delusion. On removing in succession the five stones that seemed to form the bottom, we discovered the remains of a skeleton lying at full length on its back, with the head to the west and the feet to the east, while the arms were stretched along the sides. The bones were in a very soft, decayed state, so that only some of them could be recovered. These included several vertebræ and ribs, the upper part of one femur, the *os sacrum* and part of the pelvis, a portion of the skull, and a number of teeth, none of which showed signs of wear. A good many pieces of decayed wood were found with the skeleton, and the sand which covered the bottom of the grave was much blackened by decayed animal or vegetable matter.

The cist measured 7 feet 6 inches by 1 foot 9 inches by 1 foot 3 inches deep, inside measurement. The sides were composed of irregular, rough stones not always quite in contact and not of uniform height. On the north side were eight stones in a row, of unequal height, so that in some places they were in two tiers. At the east end was a large roundish stone. It was not possible to count the exact number of stones on the south side, but some were in two tiers. The west end did not seem entirely closed, though a stone may have been unwittingly removed by the workmen before it was noticed that other stones lay in connection with it. As the cist lay athwart the cutting it was only by undercutting we were able to reach to the far end of it, and the backs of the stones were left embedded in the gravel. One of the stones overlying the skeleton was pentagonal; greatest length 1 foot 10 inches, greatest width 1 foot 7 inches. Another measured 1 foot 8 inches by 1 foot by 4 inches. In thickness the stones varied from 3 to 5 inches, and any one could easily

be lifted. The cist had been built up in an excavation 2 feet below the natural level, and had not been paved, though the bottom was strewn with fine sand.

Whether the body had been protected by a plank before the five stones were laid over it is uncertain, but it seemed nearly certain that the side ends of the capstones had never rested on the edges of the cist and then slipped off. They were too narrow for that. As the body decayed, the covering stones gradually sank, and thus caused a slight looseness of the loam at the centre, which at one time made us fear the primary interment had been previously disturbed.

A short cross-cut, about 6 feet long, was made at the centre to correspond with the easterly cross-cut occasioned by having to expose the east end of the cist. It was carried down to the natural level, but nothing was found. Whether the primary interment discovered by us is the only one in Knowe I am unable to say. Pennant (1772) mentions that there are many tumuli on the plateau of Inchtuthil; that they are round, not very high, and surrounded at their base by a foss. He adds "many bones have been found in these barrows neither lodged in stone chests nor deposited in urns." In the old Statistical Account mention is made of two tumuli on the south-east side of the camp. It states that a few years previously the largest or the 'Women's Knowe' was opened and found to consist "of a rich black mould, possibly composed of the ashes of the funeral pyres that had been consumed there." The loam we encountered was of light reddish-yellow colour, and contained no charcoal or traces of burnt earth.

As absolutely nothing was found with this interment it is impossible to state with certainty the age to which it belongs. But there are various indications that seem to point to a late date, so late as the post-Roman period.

1. Although interments of the Bronze Age are known in which the body was laid on its back at full length, they are extremely rare. Bateman mentions two examples from near Pickering in Yorkshire. In both instances the head was to the south, and the urns that accompanied the

interments seem not to be older than the middle of the Bronze Age.<sup>1</sup> At Net Lowe, Alsop Moor, he also found an extended skeleton as a central interment a little above the natural surface, with a large bronze dagger and two shale buttons.<sup>2</sup> Canon Greenwell only met with four examples of full-length interment, out of 301 burials of unburnt bodies found by him in Yorkshire. In three of these instances the interments were of young persons. In Scotland no full-length interments of the Bronze Age have been recorded, as far as I know. But in the flat cemetery near the 'Catstane,' Kirkliston, which almost certainly belongs to the period of iron, fifty-one cists were found in nine rows about 1 foot below the surface. The bodies were laid at full length, facing the east, *i.e.*, with the heads to the west. No urns or objects of any description accompanied these interments. Sir William Turner, who reported on four of the skulls, thought they were neither Saxon nor Scandinavian but Pictish. Dr Thurnam concurred in this opinion.<sup>3</sup>

2. Any Gourdie stones found on the plateau must have been brought there from a distance of two miles. It is hardly likely the few rough stones of this kind found among the water-worn pebbles can have been specially brought there from such a distance. It is more probable they were found lying about after the partial demolition of the Roman rampart, the centre of which contained a loose pile of Gourdie stones.

3. The structure of the cist differs considerably from that used in the Bronze period in Scotland, though in this instance it may be due to local conditions and the absence of suitable flag-stones.

#### *Small Tumulus on the Rampart.*

In the course of the exploration of the Roman camp a small tumulus, about a stone's throw west of the 'Women's Knowe,' was excavated by Mr A. Mackie, our experienced Clerk of Works. It lay on the top

<sup>1</sup> *Ten years' Digging*, etc., pp. 211, 212.

<sup>2</sup> *Vestiges*, etc., p. 68.

<sup>3</sup> *P.S.A.S.*, vi. pp. 184-198.

of the outer rampart, with a diameter of 35 and a height of  $4\frac{1}{2}$  feet. The body, though not found, had been laid probably at full length in a cavity excavated in the hard gravel of the natural surface to a depth of  $3\frac{1}{2}$  feet. The length of the cavity was 7 feet and its breadth 3 feet. Over this had been thrown a circular mound of loam, 3 feet deep. Then came a layer of gravel and finally a capping of boulders. The depth of the two casings amounted to 18 inches. In the recess, fragments of a stuff that resembled decayed wood was found.

This interment resembles in several particulars the one just described, and it probably belongs to the same period. Its position on the top of the rampart proves at any rate that it is more recent than the *vallum*. And this fact helps to support the supposition that the 'Women's Knowe' belongs to a post-Roman period.

#### *Exploration of a Tumulus at Ruffell.*

This tumulus is situated on a plateau about a mile north of the village of Spitalfield, and about 300 yards south of Glendelvine House. Near the base of it, on the east side, is a standing-stone  $5\frac{1}{2}$  feet high, 3 feet across, and from 16 to 20 inches thick. There is no tradition that it ever formed one of a circle of stones. Its height is  $6\frac{1}{2}$  feet and its diameter 73 feet. The mound is rather thickly planted with trees.

On the morning of the 9th of August operations were begun by cutting a trench 4 feet wide in a direction nearly east and west. The mound was everywhere of fine light rather sandy soil, much burrowed into by rabbits and almost devoid of stones.

At about the centre, at a depth of  $5\frac{1}{2}$  feet, charcoal was found in some quantity, and traces of fire were visible on the soil. A few inches to the west a cavity about 18 inches in diameter and 1 foot deep was encountered containing burnt ashes but no bones. At a depth of  $6\frac{1}{2}$  feet and about 3 feet from the centre was a nearly circular cavity, excavated into the natural gravel, measuring 2 feet 4 inches by 2 feet 3 inches and with a depth of 15 inches. It had been covered over with puddled

clay, which was very hard and firm. This hole was full of charcoal, discoloured earth, and a very few fragments of human bone. The body had been burnt *in situ*, for an inch or so above the cavity there was a thin layer of bright red burnt earth, thickly mixed with burnt wood, which covered a considerable area, though the limited extent of the cutting prevented our ascertaining its exact extent.

Though the contents of the hole were carefully searched, nothing was found; the cremated body had been deposited unaccompanied even by a cinerary urn. Neither was anything but charcoal discovered during the whole course of the excavation.