

I.

ACCOUNT OF THE EXCAVATION OF THE CAMPS AND
EARTHWORKS AT BIRRENSWARK HILL, IN ANNAN-
DALE, UNDERTAKEN BY THE SOCIETY IN 1898.

I. GENERAL HISTORY OF THE PLACE. By D. CHRISTISON, M.D.,
SECRETARY.

In the spring of 1895, the Council of the Society of Antiquaries of Scotland obtained leave from Sir Robert Jardine, Baronet, of Castle-milk, to excavate the camps on his property at Birrenswark; but it was not found convenient to undertake the work till the summer of 1898. Arrangements were then made with Mr Young Irving, the tenant, and excavations, begun towards the end of June, were continued for three months under the charge of Mr James Barbour, F.S.A. Scot., Architect, Dumfries, with Mr Alexander Mackie, who had just finished for the Society the investigation of Abernethy Fort, as Clerk of Works.

The description of the excavations naturally falls to Mr Barbour, but in the first instance it will be convenient to give the history of the place, to assist in the understanding of which I have drawn up the sketch-plan (fig. 1), based on the work of the Ordnance Surveyors, with additions from the plan of General Roy, the steepness of the slopes being simply but clearly indicated by the contour lines of 700, 800, and 900 feet above the sea, within which nearly the whole ground occupied by the camps is contained.

The hill round and upon which the remains are clustered is known as

Burnswork, *Birrenswark*, or, according to Sir John Clerk and the author of the notice in the O.S.A., *Brunswork*. *Birrenswark* appears to have been first used by Roy, misled perhaps by his familiarity with the neighbouring *Birrens*. It is hardly necessary to do more than mention the singular opinion of Maitland,¹ supported by a strangely confused argument, that the name is a corruption of *Binnenswork*. The only attempt at a derivation of *Burnswork* was by Roger Gale, who supposed that it might have come from a burn which rises in the South Camp.

The position of the hill is 10 miles north of the western termination of the wall of Hadrian at Bowness, and 3 miles north of the Roman Station at Birrens. It is $3\frac{1}{2}$ miles S.W. of Lockerbie, and of the two considerable burns to which it gives rise one flows westward into the Water of Milk, and the other southward into the Mein Water near Ecclefechan. The river Annan runs $3\frac{1}{2}$ miles to the S.W. and $4\frac{1}{2}$ to the W. The hill is conspicuous from afar, owing to its remarkable isolation, the steepness of its slopes, and most of all perhaps from its singularly extensive and level top, characteristics which give it an almost artificial look.

The top measures about 550 by from 150 to 250 yards, and is not so level as it seems to be from a distance. It really consists of an eastern and a western summit, separated by a slightly constricted neck, well indicated by the inward bends in the 900 contour line (fig. 1), which line also pretty nearly marks the whole circuit of the top. But after all, these summits only rise respectively 20 and 39 feet above this line.

The fortifications consist of two separate sets, one upon the summit of the hill, the other round its foot.

Before our operations began, evidences of fortification round the western summit were distinct enough, but were so comparatively faint round the rest of the summit as to have almost escaped the notice of the Ordnance Surveyors. They represent, indeed, a small Fort F, at the extreme end of the eastern summit, but they do not give any fortifications connecting it with the western Fort E. Our excavations, however,

¹ *History of Scotland*, p. 192.

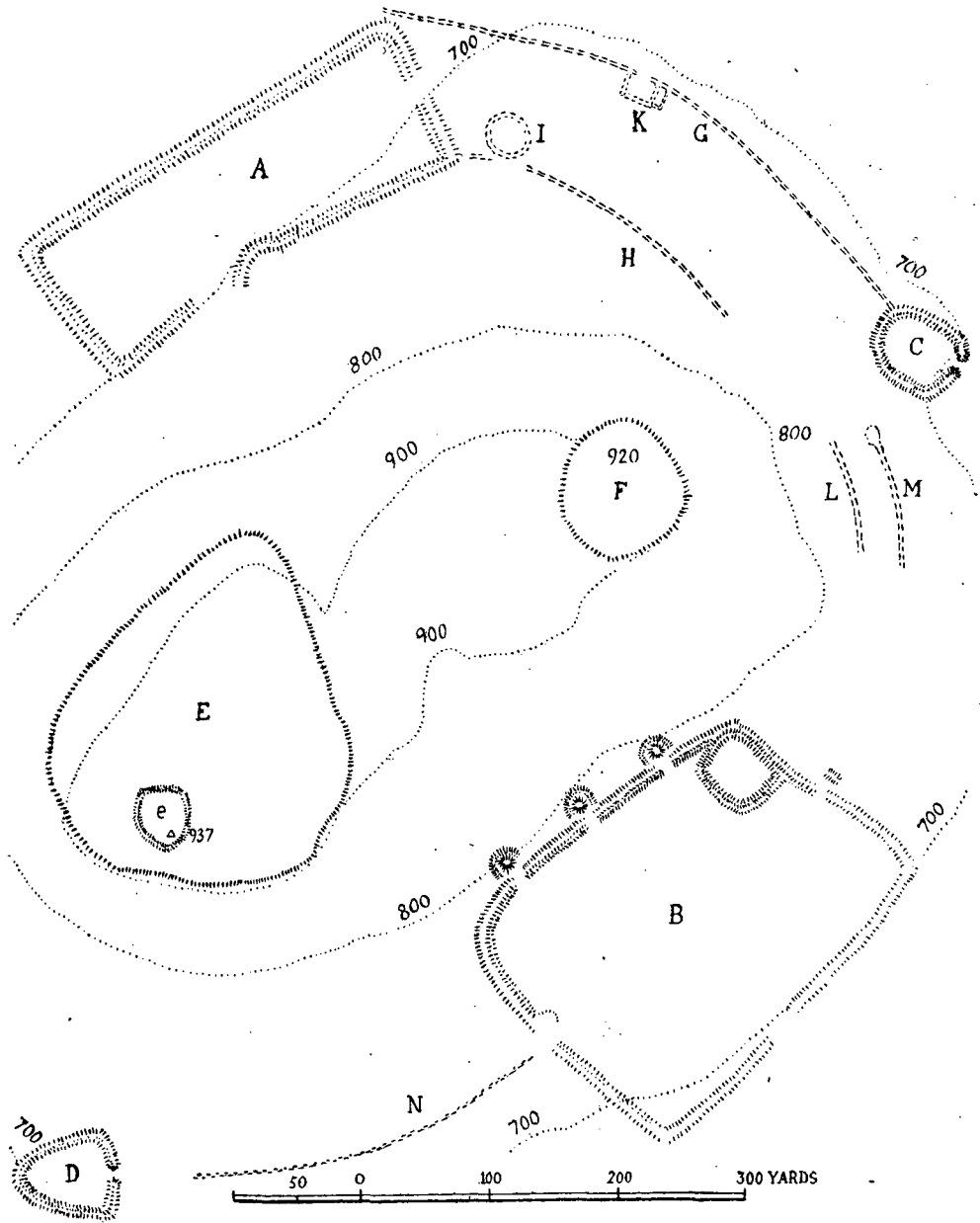


Fig. 1. Birrenswark, partly from the Ordnance Map and partly from Roy's Plan.

while showing that the Fort F had no existence, amply proved that an enceinte had girdled the whole circuit of the top (Plate III.).

The fortifications below the hill were generally much more distinct, and consisted of (1) an irregular rectangle, B, on the south side, measuring about 900 by 670 feet. (2) Another, A, on the north side, about 100 feet longer, but only, on an average, half as wide as B. (3) A broadly triangular and generally curvilinear work, D, nearly 300 by 200 feet,¹ under the west end of the hill. (4) Another,¹ C, irregularly and broadly oval, a little above 200 feet in length, under the east end of the hill. (5) Traces of lines, G H L M N, connecting some of these works.

All these works are about 200 feet below the edge of the flat top, and from 150 to 200 yards distant from it, except the larger rectangle B, which is pushed forward to within 100 yards, and consequently its north side is only 100 feet beneath the top, while the south side is nearly 100 feet lower.

On the surface little trace remained of the connecting lines, and of the smaller subsidiary works figured by Roy, but as they were identified in our excavations they have been introduced in the sketch-plan.

HISTORY.

Alexander Gordon was the first to notice Burnswark.² He declares that it is the most entire and best preserved camp he ever saw, and thus describes it:—"This encampment consists of two squares or divisions, one part of it lying to the south-east, the other to the north-west of that hill; the first has one single agger or rampart of stone and earth which surrounds a huge ditch, with another rampart lying on the inside of it, circumscribing the area. On the north side are three beautiful tumuli or turrets projecting out from the said camp, the total length of which is 834 feet or 167 paces, and the breadth 492 feet or 98 paces, which,

¹ I give the shape and dimensions of these two posts, as established by Mr Barbour.

² *Itinerarium septentrionale*, 1727, p. 16.

according to the allowance of ground made by Polybius for each footman, was capable of holding within its area 3166 men. From this camp there runs a huge rampart of stone and earth round by the end of the hill which joins it with the other square to the north-east, which likewise consists of two ramparts and a ditch in the middle with four other turrets, one projecting from each side of the area. The length of the camp is 922 feet, its breadth 395, and, according to the above-mentioned calculation, contained 2738 foot or 1095 horsemen. . . . The square ground where the prætorium or General's tent stood is still remaining."

In this description, Gordon ignores the fortifications on the top of the hill and all the works at the foot, except the two larger camps, the width of one of which he overstates as much as he understates that of the other. His plan (fig. 2) represents the camps conventionally placed side by side, and of a symmetrical shape, which is far from the truth. He supposes that they were made by Agricola, because of their resemblance to the camps of the time of Titus Vespasian as described by Josephus; but his quotation only serves to show that the differences were far more noticeable than the resemblances.

Sir John Clerk, in a letter to Roger Gale in 1730,¹ says: "The first place I went to see was a high hill with two Roman camps on it, called by the people Brunswork. I had seen this place before, but was resolved to consider it more particularly because I took it to be the *Castra exploratorum* from whence the second Iter of Antoninus begins. The hill is of this shape (referring to a sketch in his letter, not printed in *Surtees*), and may be seen twenty miles on the south side of Carlisle and thirty or forty miles on the north side of Solway Firth. The squares, A and B (in his sketch), are the two Roman camps which I need not describe, being to be seen in Mr Gordon's book, p. 16. These camps lye on the side of the hill, and not on the top of it, though even there we see some military marks. They lye about twelve miles from Carlisle, as they are stated in the *Itinerarium*, and the great highway of

¹ *Stukeley's Diaries and Letters*, iii. 264. (*The Surtees Society*, vol. 80.)

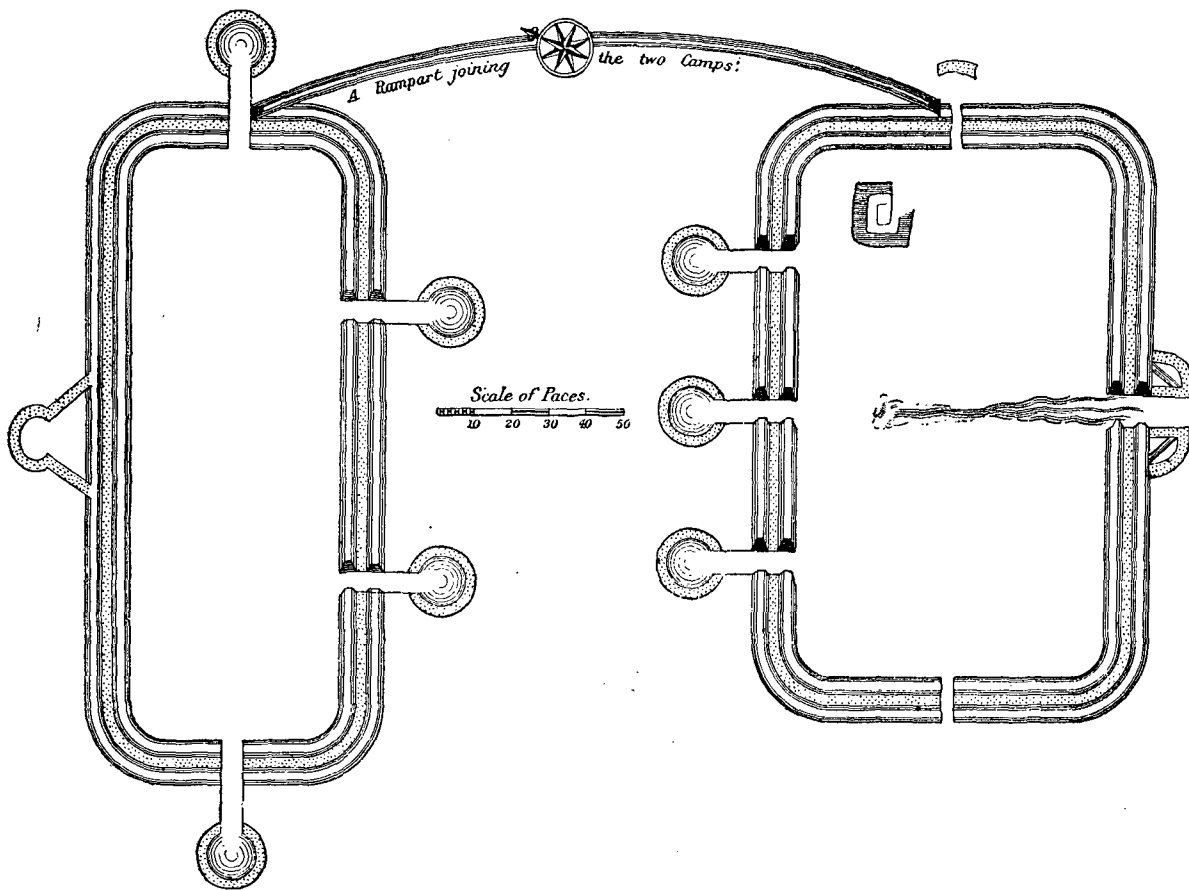


Fig. 2. Gordon's Plan of Birrenswark.

the Romans, between the Vallum Hadriani and Scotch Vallum Antonini Pii, runs by the west side of the hill, for I traced it distinctly." In a second letter to Roger Gale in 1734, Sir John Clerk again briefly notices the hill, but gives no additional information.

Roger Gale himself visited the place a few years later, and in a letter, dated August 26, 1739, to Dr Stukeley,¹ says: "We went a mile out of our way to view the two famous camps at Burnswork, so-called, I believe, from a fine spring or *Bourn* that rises in the southernmost of them." Gale, it may here be remarked, would have strengthened his case if he had noticed that the camps give rise to *two* considerable burns, as he would thus account for the plural form *Burnswork*.²

Pococke, Maitland, and Roy follow with visits all dating from about the middle of the eighteenth century, although Roy's account did not see the light till 1793, and Pococke's till 1887.

Bishop Pococke's visit³ was made during his second tour in Scotland in 1750, and he thus describes the hill and the remains of the fortification:—

"We then went on to that famous hill Burnswork, which appears at a distance with a square top like a cake: we ascended this hill, which commands a glorious view of the country round. . . . This hill has two summits, and though it is high, affords very good pasturage. There is a camp on the north side and another on the south side on the very foot of the hill. The people say that to the south was made by King Charles the First and his army under Duke Hamilton, and they certainly did encamp on it, but there is no doubt but that they are both Roman works; they are about half a mile long from east to west, and a quarter of a mile broad from north to south—that to the south has three entrances to the north, with ramparts before them to defend the entrance, there is one entrance to the west.

"To the other there are three entrances to the south, and I could discern a barrow only to the middle one. They are supposed to be the *Castra aestiva* of Blatum Bulgium, and some think they are *Castra exploratorum*, and it is probable they were encamped on the north or south side of the hill according as the weather favoured."

¹ *Op. cit.*, ii. p. 86.

² *Op. cit.*, i. p. 318.

³ *Tours in Scotland*, by Richard Pococke, Bishop of Meath. Scot. Hist. Soc. Publications, 1887.

This account is singularly inaccurate in the dimensions given, which are four or five times greater than the truth; the number of entrances assigned to the south side of the north camp is three instead of two, and all the works except the two large camps are ignored.

Maitland,¹ whose account appeared in 1757, says:—

“On this hill are the remains of two Roman camps to be seen, that on the southern side, which is 278 yards in length and 264 in breadth, is enclosed with a spacious ditch and double ramparts; without the latter, on the northern side, are three tumuli, but for what use I cannot ascertain. The camp on the northern side of the hill, which is united to the above-mentioned by a covered way that runs round the eastern end of the hill, is likewise fortified with a ditch and two ramparts, about 300 yards in length, and in breadth 131 of the same measure; it has also four tumuli on each side, but for what use erected is also unknown. But as Gordon imagined the said fortress to resemble a wall adorned with turrets he thought their artillery was placed between them! They did not appear so to me, for I saw not the least appearance of a turret, unless the tumuli aforesaid were reckoned as such; if they were, 'tis not in the least probable that the Roman artillery, the catapultæ and balistæ, were placed between them, for the first mentioned of the said tumuli being at the upper end of the camp, near the steep summit of the hill, was a position no ways proper to annoy an enemy from; but as the said tumuli are without the camp, they are more likely to have been sepulchral monuments than turrets.”

He then supposes the camps to be *castra æstiva* to the station at the *Binens*, which, he believes, was the correct name of *Birrens*. This description, like several others, only notices the two larger camps, exaggerating their dimensions, and the uniting “covered way.” The very liberal allowance of “four tumuli on each side” of the north camp arises probably from some confusion of language.

General Roy,² besides a plan characterised by his wonted accuracy (fig. 3), gives a fuller description of the fortifications than is usual in his classic work:—

“On the south skirt of the hill there is an oblong camp 300 yards in length by 200 in breadth; and on the north side another of half the extent of the first,

¹ *The History and Antiquities of Scotland*. William Maitland, 1757, p. 192.

² *The Military Antiquities of the Romans in Britain*. William Roy, 1793.

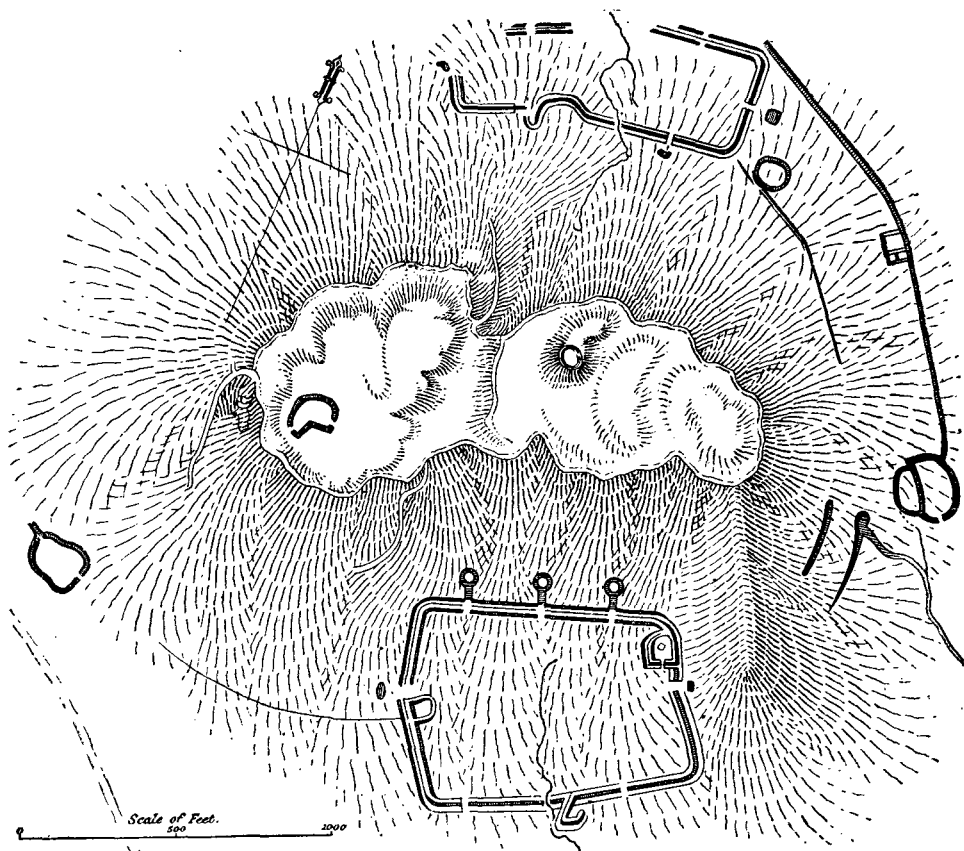


Fig. 3. General Roy's Plan of Birrenswark.

that is to say, 300 yards long and 100 broad. The large camp has three gates in that side which is nearest the hill, covered with tumuli, instead of straight traverses, with which we have seen all the camps of Agricola, excepting that of the ninth legion, are protected. The gate in the west end seems to have been secured in the same manner, as well as that in the east, though its cover is now levelled. The south entrenchment of the camp runs along lower ground, and is therefore more defaced than the rest, so as to render it difficult to say how its gates were finished. The prætorium exists in the greatest perfection, not in the usual situation, but in the north-east angle of the camp, being the highest ground within the lines. Within the west gate some faint appearances of another small post may be perceived. The camp on the north side of the hill seems to have had only two gates in each side, covered like those of the great camp. The communication between both hath been kept up by means of intermediate posts, one being situated under the east, and another under the west end of the hill. Besides these stronger works, some imperfect vestiges of two lines may be perceived surrounding the east end of the hill, and including between them two weaker posts, whereof one is square, and the other circular. One of these lines seems to have joined the large camp to the post at the west end of the hill. Between this last camp and the small camp nothing of the kind is now to be seen ; but as there is a deep morass on that side, perhaps any sort of fortification there was judged unnecessary. On the summit of the hill, towards the west, there is a post of the same nature, with regard to strength, as those are at the two extremities below. Near the middle of the hill there is another of the circular kind, and all around the edge, or summit, traces of something like the foundation of a breastwork may be perceived ; but this, as well as the lines of circumvallation, and smaller posts below, appear to have been prior to the camps and larger posts ; and possibly might even have existed before the arrival of the Romans. Three paths have led from the works below to the top of the hill : one from each of the large camps, and a third by the west of the hill."

The only doubtful work in this description is the circular post "near the middle of the hill," of which there is, at least, no trace to be seen now. Roy then argues that Birrenswark could not be one of Agricola's temporary camps, as the coverings of the gates differ from his, the prætorium is differently situated, the ramparts are of a considerably stronger construction, the camp at Torwood Moor is too near, and the two camps and smaller posts would only contain the main body of a Roman legion without its auxiliaries, or one-half the troops that the camp at Torwood Moor would contain.

He then remarks on the resemblance of the Birrenswark camps in size, profile of the entrenchments, number of gates and nature of their covers, to a camp on Kreiginthorpe Common, and another at Rey-cross, on Stanemoor, both on the Roman way between Carlisle and York, and enters into an argument, too long for introduction here, attributing them all to the sixth legion in the time of Hadrian.

Roy's description contains details not given by former observers, and, except in regard to the precise shape of some of the works, is as accurate as could be looked for, without the help of excavation.

Pennant,¹ who visited the hill in 1772, thus describes it:—"On the sides of one (hill) called *Burnswark*, about two miles from *Burrens*, are two beautiful camps, united to each other by a rampart that winds along the face of the hill; one camp being on the S.E., the other on the N.W.; one has the *prætorium* yet visible; and on the N. side are three *tumuli*, each joined to it by a dyke, projecting to some distance from the ramparts, as if to protect the gate in that quarter, for each of these mounts had its little fort; the other fort had two of these mounts on one side, and one on each end; but the vestiges of these are very faint. Both of these camps were surrounded with a deep ditch, and a strong rampart both on the outside and the inside of the fort; and on the very summit of the hill is a small irregular intrenchment, intended as exploratory, for the view from there is uninterrupted on every part." This account, so far as it goes, is tolerably accurate, but the phrase "each of these mounts has its little fort" would be more accurately expressed "each of these mounts is a little fort," and it is a mistake to say that they are united to the camp by dykes. *Pennant* concludes by stating positively that these camps were "the work of Agricola, and highly probable to be, as Mr Horsley imagines, the summer camp of that at *Burrens*."

The Old Statistical Account of Scotland. In the account of the parish of *Hoddam*, to which Birrenswark belongs, nothing of consequence occurs, but under *Tundergarth* is the following notice by "A friend to

¹ *A Tour in Scotland*, 1772, pub. 1776, ii. p. 103.

statistical inquiries":—"At its western border the parish almost touches the base of the famous hill of Brunswark. That hill owes its celebrity to the remains of two Roman encampments which appear on the eastern and on the western sides of its declivity. The remains of these encampments are still exceedingly distinct. It seems highly probable that they were at first formed by the Romans besieging a body of the ancient Britons, who had occupied the summit of the hill. It was so remarkable a station that it could not fail to be continually occupied in all subsequent wars among the inhabitants of these regions, whether contending among themselves or opposing stranger invaders. The Anglo-Saxons, the Scotch and English, in all their Border wars, naturally posted themselves often on the summit of Brunswark, as a place, by its elevation above the surrounding country, admirably fitted at once for an impregnable post and for a station of prospect."

The eighteenth century notices close with an anonymous paper in the *Archæologia Scotica*, 1792, i. 124, containing a remarkably good account of the fortifications, from which some extracts may be made. "Around (the western part of the summit) there are evident remains of a wall composed of earth and stones, and within that some confused marks of building. The traces of a wall may also be seen running from this enclosure around the eastern part, except in those places where the rock rendered it unnecessary." The southern camp "is formed of a rampart with a large ditch, so well preserved that the top of the rampart is still eight feet perpendicular above the bottom of the ditch. To the south of the northern camp, near the foot of the hill, there are some springs, one of which is large and appears to have been fortified." "The whole suggested to me the idea of a siege. The natives from the plains had conveyed their cattle and effects to the top of the hill, and increased their natural defence by walls. The Romans divided their forces into two bodies, and placed one on each side of the hill." The gates, he proceeds to say, are more numerous on the fronts towards the hill, "to enable them to form the troops more expeditiously near the enemy, and well fortified to protect them in case of a retreat." The

principal attack has been carried on by the camp on the south-east side ; there the hill is most accessible. "The principal well has been fortified and guarded," to prevent the natives from getting water.

The descriptions in the present century are too near our own time and too much derived from preceding accounts, to be of much value ; but two of the more important ones may be briefly noticed.

*Chalmers*¹ gives a somewhat novel account of the remains on the summit :—"The area on the summit of the hill was surrounded in prior times with a stone rampart, the remains whereof are still apparent, and evince that the rampart had been constructed without mortar ; and within this area there also appear some vestiges of buildings for the purpose of residence or shelter, which are similar to those in the British hill-forts. There also remain on this hill some other vestiges of the British people ; particularly on the east side, there are the remains of a line of circumvallation, which appears to have surrounded the hill at some distance below from the circuitous trench on its summit." *Chalmers'* account of the structure of the rampart, if it implies a dry-stone wall, was proved by our excavations to be quite erroneous, and there are no remains in the area suggestive of buildings found in British hill-forts.

*Stuart*² has nothing new in his description, but his opinions as to the origin and history of the place may be quoted. "Everything attests that the Selgovæ Gael had here established a place of strength, in the days of their independence," when "Roman interference was unknown." "Possibly enough the Legate of Vespasian may have here halted his forces, and destroyed at once the stronghold and the hopes of his barbarian opponent."

ORIGIN OF THE FORTIFICATIONS.

The suggestions as to the origin and purpose of the fortifications at Birrenswark, by most of the earlier authors, were vitiated by their failure

¹ *Caledonia*, i. 120.

² *Caledonia Romana*, 1352, p. 188.

to see anything but the two greater camps; which, of course, they had no hesitation in calling Roman. Even Roy, who saw everything, was so wedded to the notion that all Roman military works must be rectilinear, as to deny the Roman origin of the redoubts and connecting lines, which are so intimately associated with the two rectilinear camps. Thus he seems to have missed the idea that the works below were a connected whole, intended for the siege of those above, which was first suggested by the "Friend to statistical inquiry" in the *Old Statistical Account*, and maintained independently by the anonymous author of the paper read to the Society in 1785, published in *Archæologia Scotica*, 1792, who, in the scientific accuracy of his description and deductions, was far in advance of his time.

While all the early authorities agreed in attributing the two rectilinear camps to the Romans, several of them made other suggestions both as to these camps and the other works, ascribing to the latter, particularly, pre-Roman or post-Roman dates; but the only definite statement is by Bishop Pococke of a traditional encampment at Birrenswark of "Duke Hamilton's army," presumably during the civil wars of the seventeenth century. Passing by these vague suggestions, it appears to me that although there are difficulties in reconciling some of the details of the fortifications, yet on the whole the siege theory is probably correct, and for the following reasons:—

1. The most natural explanation of works of circumvallation at the foot of a hill, disconnected with, but surrounding, a fortification on the top, is that the former were intended for the siege of the latter.

2. The works seem to be skilfully disposed for the purpose. The large camps are planted opposite the easiest approaches, and the entrances to the fortress. They include and cut off the springs, with the exception of one, which was too near the fortress to be controlled by the siege works, and was apparently fortified by the besieged. The works in general are nearly 200 yards distant from the fortress, but the largest camp is pushed forward to within 100 yards of the most accessible side and the chief entrances, as if to press the siege closely there. On the side

next the fortress this camp has three wide entrances, as if to permit the simultaneous assault by large bodies of troops, whose advance or retreat was protected by unusually strong covering works. A redoubt is placed at the north-east angle of the camp, its highest point, and the part nearest to the fortress, requiring therefore most protection. A small but strong redoubt is placed opposite the west end of the fortress, where there is a sally-port. This redoubt also controls the chief road to the fortress. A corresponding work faces the east end, but is of weak profile, as the garrison had no exit in this direction.

Thus the general arrangement of the works seems to fit in fairly well with the theory of a siege: let us now see how far our excavations have revealed who may have been the builders,—a subject that may be dealt with under the heads of *Plan and Structure*, and *Finds*.

1. The supposed siege works are unique in Scotland, but their great extent and apparently scientific arrangement are certainly more suggestive of Roman power and method than of native effort. In the vast number of native fortifications that remain there is no hint of siege works, or of strength to undertake them. Then the prevalent rectilinear form, the traverses protecting the entrances, the tendency to stratification in the ramparts, the stone substratum, although only found in one section, the pavement in their rear, and the indication of streets in the larger camp, are all presumptions in favour of a Roman origin.

On the other hand, although the Romans, if they occupied such a site as the hilltop, might reasonably abandon their customary straight rampart and trench, and simply girdle the edge with a winding mound, yet there is no proved instance in Scotland of their having either occupied such a site or used such a style of fortification; whereas an isolated hilltop is the ordinary site of a native fort, and a winding rampart a recognised mode of its defence.

There is perhaps only one characteristic that appears to point to a common origin for both sets of works, and that is the stone "pitching"

of the surface of the rampart figured by Mr Barbour (Plate VI. figs. 1, 4, etc.). This, I believe, is an altogether new observation, and we cannot therefore say whether this mode of facing an earthen rampart was Roman or British. Possibly its occurrence in the upper as well as the lower works may have been due to the besiegers, after capturing the place, repairing or refortifying the defences on the top, rather than to an identity in race of the besiegers and besieged.

2. Even making allowance for the small proportion of the ground excavated, the Finds were few, and, as Dr Anderson's description shows, scarcely any can be pronounced to be distinctively Roman. Remarkable was the total absence of the pottery usually found in such abundance on undoubted Roman sites. This might be accounted for, at least in the siege works, by the improbability of an army in the field burdening itself with breakable articles, but it seems a strong proof that no part of Birrenswark was occupied by the Romans for any great length of time. It is a striking fact, also, and it shows how misleading it may be to found arguments upon Finds alone, that at this supposed Roman site the ordinary Roman relics were absent, whereas, in operations going on simultaneously with our own at a crannog in Lanarkshire, the characteristic Samian ware, Amphoræ, Mortaria, and even glass, were turned up in no inconsiderable quantity, considering the limited area of a crannog. Are we to conclude, then, that the Romans did not occupy Birrenswark, but did occupy, perhaps build, a crannog?

There was no difference in kind between the relics above and below, which may be accounted for either by a common origin or by a common occupation for at least a part of the time.

A unique discovery of sixty-seven *glandes* or leaden sling-bolts¹ deserves particular attention. They were coated with a thin yellowish-white layer

¹ Only one *glans* has hitherto been recorded in Britain. It was found during the recent excavations at Birdoswald, and is figured (*Trans. Cumb. and Westm. Arch. Soc.*, xv. 200) in the account of them by Mr F. Haverfield. But, as he has suggested to me, *glandes* may often have been unnoticed or passed over as unimportant in previous excavations.

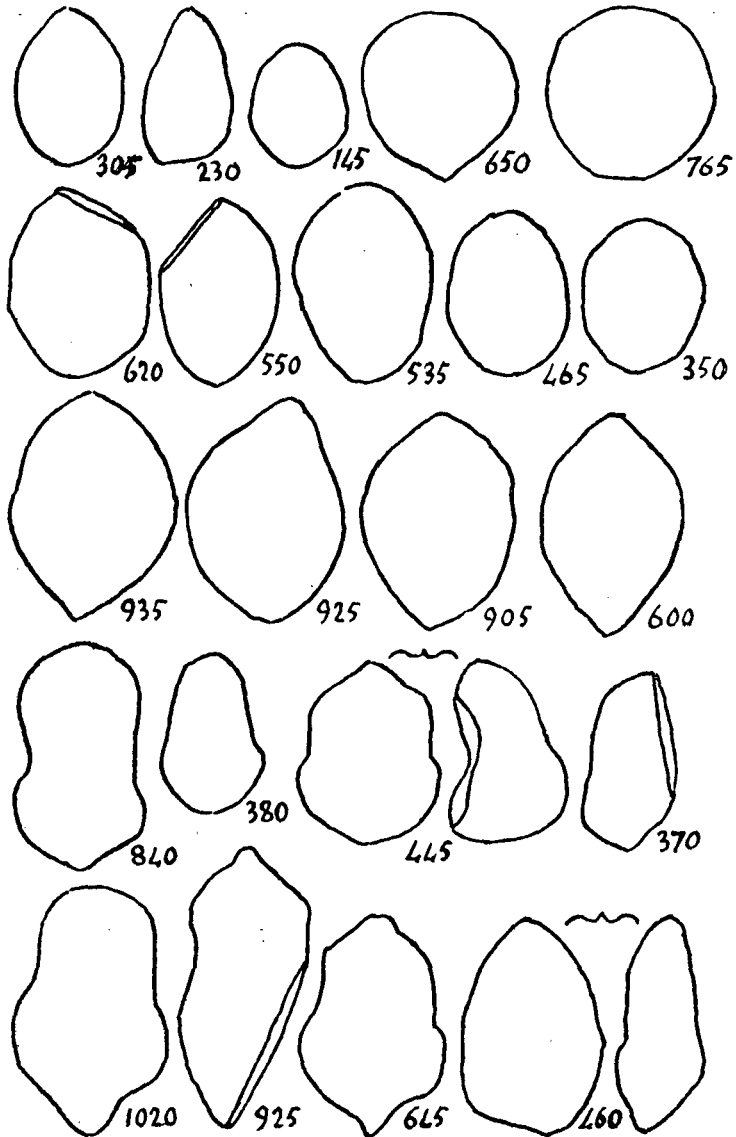


Fig. 4. Outlines of Leadens Glandes or Sling-bolts found at Birrenswark, with their weights in grains.

of carbonate of lead, which seems in most instances to have preserved their original smooth and regular form. Rejecting about a dozen that are small and somewhat rough, which were found together in one place in the South Camp, and two or three more of a rounded form, possibly musket balls, some twenty of the remaining fifty are shaped like acorns, or tend to that shape, and vary in weight from 305 to 1020 grains, averaging 660 grains; of the rest some are elliptical, others oval, rather squat in form, and average 550 grains in weight. The length in these two classes varies from $\frac{3}{10}$ of an inch to an inch and $\frac{7}{10}$. The smallest of the rejected twenty weighs only 145 grains, and is a much flattened oval. Twenty-three of these objects, illustrating all sizes and shapes, and with their weight in grains annexed, are outlined in fig. 4, and shaded drawings of four are given in fig. 3, p. 246. It may be added that where two or three were nearly of the same weight, the difference in form was so great that they could not have been cast in the same mould.

The question whether these bolts might give a key to the origin and date of the fortifications led me to a general inquiry into the use of the sling in war, and particularly with leaden bolts. It appears that the latter superseded stones about five centuries B.C., but that the Roman authors make no mention of their use after A.D. 70, and even in the rare instances in which the material is mentioned, beginning as early as the reign of Hadrian, some thirty years later, that it is stated to be stone. Mr Haverfield has, therefore, suggested¹ the probability that the use of lead *glandes* ceased about the end of the first century of our era, and that we may conjecturally attribute the Birrenswark *glandes* to some campaign of Agricola. But it might be rash to conclude that a change from lead to stone missiles took place rapidly and universally in the Roman armies. Indeed, although the rather scanty literary evidence is entirely in favour of this as a permanent change, it seems very unaccountable, and must be taken as a sign of degeneracy in the Roman armies, when we consider the superiority of lead—from the ease with which it

¹ "Quarterly Notes on Roman Britain," *The Antiquary*, March 1899.

can be cast of any required shape or weight, and its greater range¹—over the primitive pebble from the brook.

The presumption that these Birrenswark bolts were Roman is strong, because we know that the Roman armies did use leaden bolts, both of the acorn and oval forms, and we do not know that any other nation, except the Greeks, did so. At the same time the possibility of a native origin for them should not be overlooked. *Fas est ab hoste doceri*, and the natives of Caledonia, skilful casters in bronze long before the Romans arrived, would have no difficulty in imitating their leaden bolts, with plenty of the material at hand in the neighbouring Leadhills. That the natives of Britain were acquainted with the sling before the Roman arrival is evidenced by the occurrence at the lake village of Glastonbury of a large number of bolts in baked clay, of the same form and size as these oval lead bolts. Two clay bolts were also found last year in the prehistoric fort of Abernethy. The great variety in weight, shape, and size of the Birrenswark bolts, also, a variety so great that no two are alike, as if every slinger had his own mould, seems opposed to the methodical organisation of the Roman armies, which we might expect to be furnished with missiles of regulation shape and weight kept in store.

Lastly comes the question, may these bolts not be mediæval? On this point I have failed to get indubitable proof that the sling was used in mediæval warfare in Britain at all. Mr W. Hawkins, the only English author who seems to have treated of the sling in an express essay ("On the Use of the Sling as a Warlike Weapon among the Ancients," *Archæologia*, 1847, xxxii. 96), speaks of the mediæval period briefly, without references to authorities, and apparently takes much of his information from Strutt. This author (*Sports and Pastimes of the English People*, 72) states that the Saxons seem to have been skilful in the use of the sling, apparently on the strength of an illustration, which he gives

¹ A memorable example of this superiority is related by Xenophon, who, when his army was threatened with destruction by the Persian slingers, having ascertained that the Rhodians in his force were expert in the use of the sling, armed 200 of them with it, and provided leaden bolts, which carried twice as far as the stones of the enemy, and thus he was enabled to keep them off and save the army.

from an eighth century MS., of a slinger discharging his weapon at a bird on the wing. He also says (*Manners, Customs, and Arms of the English down to Henry VIII.*):—"We have sufficient testimony to prove that men armed with slings formed a part of the Anglo-Norman army;" but this assertion seems to rest on the questionable translation of *Balisterii*, when used by early writers, as *slingers*; and in his own quotation, from an account of the landing of Richard I. in Cyprus, to prove that the Anglo-Normans "always sent their archers *and slingers* first in landing on a hostile coast," there is no mention of slingers but only of archers! Neither does the sling appear in his list of early English weapons. It is also absent, except in the form of the staff-sling in one representation of a siege, in his numerous battle scenes, taken from ancient MSS., and in his plates of English weapons. I may add, it is not found in the Bayeux tapestry.

A very definite statement by Strutt, on the authority of Hoveden, that the English mingled archers *and slingers* with their cavalry at the battle of Northallerton, A.D. 1138, drove me to the original, where I found no mention of slingers, *virii vero sagittarie equitibus immixti*. Neither is Tytler happier in his assertion (*History of Scotland*, vol. i. p. 323) that Barbour describes Edward Second's first assault on Berwick as being covered by archers *and slingers*, as the original stands merely,—“To ilk kynele (crenel, or embrasure in the battlement) that was thar, *archares* to schut assignyt war.” Thus I have failed hitherto to find any explicit statement of the use of the ordinary sling in a battle or siege on British soil. And although Strutt asserts, on the authority of the ballad “Knyghthode and Batayle,” that it was used in English wars as late as the beginning of the fifteenth century, the passage he quotes seems to be merely a poet's advice to soldiers to practise with the sling, because it is easily carried and stones are plentiful. From all this it appears there is no reason to suppose that the Birrenswark sling-bolts could be mediæval, that they might possibly be early native imitations of Roman models, but that they are most probably Roman.

One point regarding them remains to be noticed. About twenty of

them are dented, and all of these were found near the gateways of the fortress on the hill, as if they had been discharged at the defenders from below, thus confirming the siege theory. Several of the dents are seen in the outlines (fig. 4).

The stone "ballista" balls are of too light weight to have been designed for battering, and must have been offensive missiles, a class of weapons used both in Roman and mediæval times.

One objection to the theory of a Roman siege seems to be the apparent inadequacy of the fortifications on the top to resist a formal attack by a people so well skilled in siege operations as the Romans. Accepting the stone pitching of the ramparts as an accurate observation, it must have prevented gradual degradation, so that the original profile must be fairly well preserved. But the height of the mound is so trifling that it merely somewhat increases the steepness of the hill slope, and apparently would prove but a slight impediment to a steady assault by heavy armed Roman troops. Perhaps some additional defence was superadded, but of such there is no sign.

The claim of the works on the hilltop, on the other hand, to be Caledonian may be challenged, on the ground that they are not paralleled at once in kind and size anywhere else in Scotland. But there is at least one fortress, Meldun, Peeblesshire, of rather more than half the area, and with ramparts—as far as can be judged without excavation—of much the same character; and Eildon, Roxburghshire, although apparently it had been fortified rather by palisaded terraces than by mounds, is of even greater size than the Birrenswark hill fort.

On the whole, it may be concluded that, if no single point is sufficient proof, the consensus of evidence is in favour of a Roman origin for the works at the foot of the hill, and a native origin for those on the top, although both may have undergone some modification subsequently.

By greatly extending our excavations, a more decisive result might have been obtained, but the area is so vast that anything like a complete investigation would have involved too great an expense, even if the result of our exploratory work had been more encouraging than it proved to be.