

III.—*An Examination into the character and probable origin of the Hill Forts of Sussex.* By Colonel AUGUSTUS HENRY LANE FOX, F.S.A.

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Read February 6th, 1868.

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In the month of September last whilst staying at Brighton I examined nearly the whole of the ancient earthworks which occupy the summits of the highest eminences of the Downs between Beachy Head on the east, and the neighbourhood of Chichester on the west.

The tract of country known as the South Downs, forms, as is well known, the south-eastern portion of that barrier of chalk hills which surrounds the great weald valley on its north, west, and south sides.<sup>a</sup>

The South Downs, properly speaking, extend no further westward than Shoreham, but the district referred to in this paper includes a continuation of these downs to the westward, and embraces, in all, a belt of hills running east and west for about fifty miles, and averaging five miles in width. It is bounded on the south and east by the precipitous sea cliffs, and the low ground in the neighbourhood of Eastbourne. From Brighton westward, the southern margin of the hills is separated from the sea by the low tract of tertiary formation which extends from that place to Chichester and Selsea Bill.

On the north it is bounded by the weald valley, in which in ancient times was situated the great impermeable forest of Anderida, and which, in consequence of the great width of the hedge-rows throughout the weald, still looks, when viewed from the heights, like a thick unbroken forest.

From this valley the downs which I am describing rise everywhere abruptly to a height, in some places, of 700 and 800 feet above the sea-level, and throughout the whole extent of the northern boundary of these hills from east to west it has everywhere the appearance of a sea-cliff overlooking and commanding an extensive view of the wooded valley to the north.

After passing to the southward of this line, the aspect of the country entirely changes, and instead of a wooded and comparatively flat surface the ground from this ridge falls, in conformity with the natural dip of the chalk strata, in a succession of round-topped hills and coombs, entirely devoid of tree or hedge-row, sloping gently towards the sea.

<sup>a</sup> See Ordnance Survey, sheets Nos. V. and IX. scale of one inch to a mile.

There is only a scanty supply of vegetable mould upon these hills, and the hard chalk rubble beneath the grass, undisturbed by cultivation until within the last few years, has preserved with wonderful distinctness every break on its surface which during past ages has been caused by the hand of man. So that the faintest trace of an earthwork may sometimes be seen for miles upon the green sward.

Indeed the whole aspect of the country, viewed as a panorama that presents itself to the spectator from most of the hill tops, must still convey to him very much the same appearance that it did to the ancient Briton, and on this account there is perhaps no part of England that will more quickly repay the pre-historic archæologist for the trouble of exploring it. The belt of hills above described is traversed in four places by rivers running through it from the weald valley in a southerly direction towards the sea. These are, commencing from the east, the Cuckmere, the Ouse, the Adur, and the Arun.

These rivers now wind their way from side to side in the flat bottoms of the valleys through which they pass, but all appear originally to have been arms of the sea. For, while the sea has everywhere encroached upon the cliff throughout this district, the rivers, on the contrary, have gradually become silted up, and several of the ports on this coast, which, even within the historic period, are known to have existed at the mouths of the rivers, have long since been destroyed.

Thus the Cuckmere derives its name from having been originally a mere or lake. At Excet bridge, the alluvium, bounded at various points by low chalk cliffs, shews the bed of an ancient estuary of considerable size,<sup>a</sup> and the haven at its mouth, for the use of which there is a local tradition, perhaps not very well founded, that the Dutch once offered our Government as much as a million sterling, has been choked up from time to time, and the outlet for the waters is now kept open only by the use of harbour ploughs for removing the shingle.

The Ouse appears to have been an estuary or marine lake for some distance above Lewes, at which place, in the neighbourhood of Eastport Lane, an anchor was dug up during the last century, and another at Landport, higher up to the west, shewing that these localities must have derived their names from a period when Lewes was a seaport. Similar evidence is also furnished by the alluvial deposit in the flats, which, according to Dr. Mantell,<sup>b</sup> is in part composed of silt

<sup>a</sup> "Rivers of Sussex," by Mark Antony Lower, M.A. F.S.A.—*Sussex Archæological Collections*, xv. 148—164.

<sup>b</sup> Mantell's *Fossils of the South Downs*, p. 286. *History and Antiquities of Lewes*. By the Rev. T. W. Horsfield, F.S.A. i. 59.

or blue clay varying from three to twenty-five feet in thickness containing marine shells in the lower, and fresh-water shells in the upper beds, the intermediate layer being composed of both kinds mixed indiscriminately, thus shewing evidence of a gradual transition from an estuary to an inland lake. The names of Lewes, Northese, and Southese upon the sides of the valley being all derived, as is supposed, like the word ouse itself, from the Celtic word *isca*, *ese*, or *ys*, signifying a piece of water,<sup>a</sup> also point to a time when these spots were situated on the water's edge. In the Roman age it has been conjectured from the level at which coins have been found, and the small amount of deposit that has accumulated above them, that the valley must have been marsh land,<sup>b</sup> subject perhaps to frequent inundations. Etymological evidence would also warrant us in concluding that the same features of land and water prevailed in the Saxon era. The hundred of Holmestrough, called in the Domesday Holmestrew, in the parish of Telscombe, on the western bank of the valley, derives its name from the British word *treu*, a town, and *holmes*, the Saxon word signifying watery lands. I examined the whole of this bank from Southese to Newhaven in the hopes of finding vestiges of lake-dwellings, of the former existence of which we may perhaps assume that some record is handed down to us by the name thus given to the locality. The lines of the ancient water-levels may be very distinctly traced on the western sides of the valley. The plot of ground on which the ancient church of Piddinghoe, with its curious round tower, now stands, has all the appearance, from its outline and position, of one of those *cranogues* that are found in the Irish and Scotch lakes. It consists of a circular hillock, jutting out into the level bottom that was formerly occupied by the water. On the inner or land side of the churchyard, which is nearly circular and conforms to the outline of the ground, two large blocks of Druid sandstone, about three feet high and the same distance apart, have been built into the wall. They have evidently been transported to the position in which they now stand, and may very possibly have marked the entrance to some heathen temple, the appropriation of which as a place of religious worship has been perpetuated by the erection of the present church.<sup>c</sup>

The history of the gradual closing of this river may be further traced during the historic period. Seaford, at which place the river formerly had its outlet, and

<sup>a</sup> Horsfield, *History of Lewes*, p. 10—14.

<sup>b</sup> *Ibid.*

<sup>c</sup> It may, perhaps, be considered in some degree confirmatory of this assumption, that the church in the adjoining village of Southese (which has a round tower exactly resembling that of Piddinghoe, and of the same date) was discovered, in 1851, to stand on the site of an ancient tumulus.—*Sussex Archaeological Collections*, v. 205.

from the good harbour of which ships of war formerly set forth, appears to have entirely lost its advantages as a seaport in the reign of Elizabeth; and at the present time no trace of the harbour remains. The bed of the river is now a cricket-ground; <sup>a</sup> and the river, gradually working its way westward, now has its *embouchure* at Newhaven. In like manner it has been proved by Dr. Mantell that the valleys of the Adur and the Arun were originally occupied by arms of the sea which were gradually silted up. Marine shells are to be found lying on the banks of ditches as high up in the Adur as Bramber Castle; <sup>b</sup> and the discovery of two ancient British canoes, composed of hollowed oak trees, on the banks of the Arun,—one, in 1857, at Warming Camp, a mile distant from South Stoke, the other, in 1834, at North Stoke, six feet below the soil, and 150 yards from the present river,—is sufficient to prove that a great expanse of water must have existed at those places at the time it was navigated by these vessels.<sup>c</sup>

From the evidence thus collected from various sources it will be seen that at the remote period to which I shall subsequently shew reason for believing that most of the earthworks on the downs must be attributed, the belt of hills on which they stand must have been divided into five groups, each separated from the other by an expanse of water and marshland, a circumstance worthy of being noted when discussing the facilities of communication which existed between these works, and the support they are supposed by some writers to have afforded to each other in the general defence of the coast.

Considering the swampy and impassable nature of the great forest on the north, these several groups must have been almost isolated; and the only means of communication between them, except by canoes, must have been along the northern slope of the downs, between the heads of the waters and the forest of Anderida.

Sufficient traces of an ancient roadway exist to the present day along this northern ridge of hills to prove that this must, in fact, have been the great thoroughfare of the inhabitants in ancient times. At every two or three hundred yards between Ditchling and Lewes the track of an ancient pathway may be seen running obliquely down the hill. In some places a line of road, running east and west, may be distinctly traced about halfway down the hill; and on the summit lines of deep furrows, running in and out of each other in the same general direction, show evident traces of the continued traffic of animals.

Turning our attention now to the intrenchments, we find several accounts of

<sup>a</sup> *Memorials of the Town, Parish, and Cinqueport of Seaford*, by Mark Antony Lower, M.A. F.S.A.

<sup>b</sup> Dixon's *Geology of Sussex*, p. 48. Bramber Castle is most likely the Portus Adurni of the Notitia. See *Archæologia*, xli. 439.

<sup>c</sup> Murray's *Handbook of Kent and Surrey*, p. 316.

them given in the Sussex Archæological Collections. In the first volume there is a paper on the Celtic antiquities near Chichester by the Rev. Leveson Vernon Harcourt, in which the learned author appears to consider the majority of the tumuli and earthworks in that neighbourhood to be places of religious worship. This is followed in the third volume by an admirable paper on the subject by the Rev. Edward Turner, read at the Brighton meeting, April 1849. Perhaps, however, the best account which has appeared of these camps is one by Mr. George Vere Irving in the Journal of the Archæological Association.

As I shall have occasion to refer to the opinions of these writers when describing the several camps which I have examined, it is unnecessary that I should here allude to them further than to remark that Mr. Irving's paper, which I had not seen at the time I was in Sussex, is particularly interesting to me from the fact of its being supported by excavations made by himself in the identical earthworks which I had examined, and which form the more particular subject of my present communication.

Although it will be found that I shall be compelled to differ from him in some of his conclusions, Mr. Irving's treatment of the subject has the merit of illustrating his views by the known principles of castrametation which have been handed down to us by Vegetius and other authors, and also of comparing these works with others of a similar nature in Lanarkshire, which he had before had an opportunity of examining. The advantage to be derived by applying to the study of ancient fortifications some knowledge of the general principles of military science, has been so well exemplified in the great work on the Military Antiquities of the Romans by General Roy, that I cannot, perhaps, do better than quote his remarks upon this point :

“That the principles of war,” he says, “are fixed and general, varying only with the local circumstances and situation of the country, we doubt not will be admitted; whence it follows that some knowledge of modern military operations seems necessary to enable us to trace with success the motions of a Roman army; and whoever has been accustomed to observe the one with most attention will in all likelihood not only find it easiest to trace the other, but at the same time will perceive a very great resemblance in the leading principles on which they respectively acted. With regard then to the military antiquities, it seems to have been a misfortune that few of the commentators who have treated on this subject, however well qualified in other respects, have been military men.”<sup>a</sup>

<sup>a</sup> *The Military Antiquities of the Romans in North Britain, &c.* by Major General Roy.—Prefatory Introduction, p. 5.

These remarks must serve as my apology for embarking in a subject which has already been so ably treated by former writers, and to which, upon antiquarian grounds alone, I could hardly hope to add much to the knowledge already in possession of this learned society.

There is, moreover, an additional motive for reconsidering at the present time former opinions relative to the origin of these works. I allude to the circumstance that the whole of the papers to which I have referred were written at a period anterior to that in which the Stone Age of mankind began to attract attention, and I trust I shall be able to show in the course of the present communication, that the whole subject requires to be reviewed by the light that has thus been thrown on pre-historic archæology during the last ten years.

I will now endeavour to describe by means of the accompanying rough sketches from measurements taken on the spot, either by pacing, or by means of a tape and a pocket level, the several earthworks which I have personally examined.

BELTOUT.—Commencing on the east, the first and only work that stands upon the group of hills which lie to the east of the Cuckmere, is Beltout, occupying the whole summit of the hill above Berling Gap, and within the area of which, on the verge of the cliff, the Beachy Head lighthouse now stands. Its form, like that of nearly all the other works on the downs, is determined by the outline of the hill, along the brow of which it winds round in such a manner as to overlook with the greatest advantage the slope and the valley beneath it.

It seems highly probable that this work formerly surrounded the hill, but the southern half of it has been eaten away by the encroachment of the sea. I had not time to take a section of the parapet of this work, but it is of small relief, and has a ditch on the outside. It has entire command of the surrounding country, and is in all respects well situated for defence, excepting only as regards the supply of water, for which the occupants must have been dependent on external sources.

I found the whole of the interior of the work, especially near the parapet, and part of the slope on the outside, strewed with flint flakes artificially fabricated; of these I collected as many as I could carry away as specimens.<sup>a</sup> I may here observe with respect to the surface flakes that I found upon the downs, here and elsewhere, in case the reader should be sceptical on the subject of their having been produced by the hand of man, that the points which I take to determine an artificial flake are as follows :—

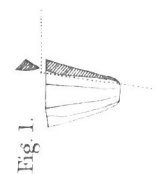
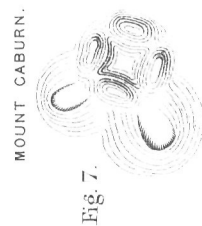
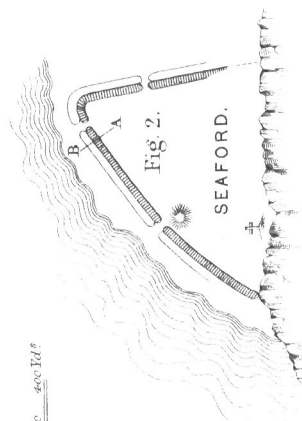
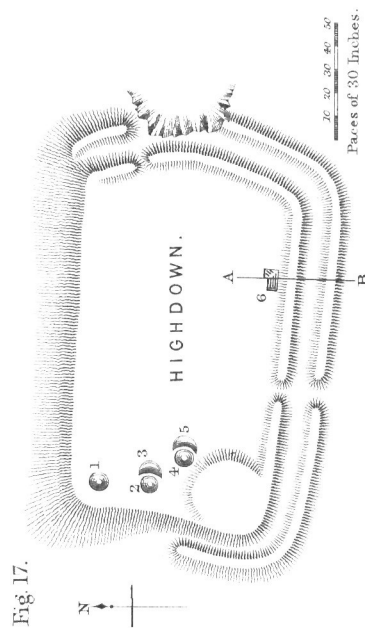
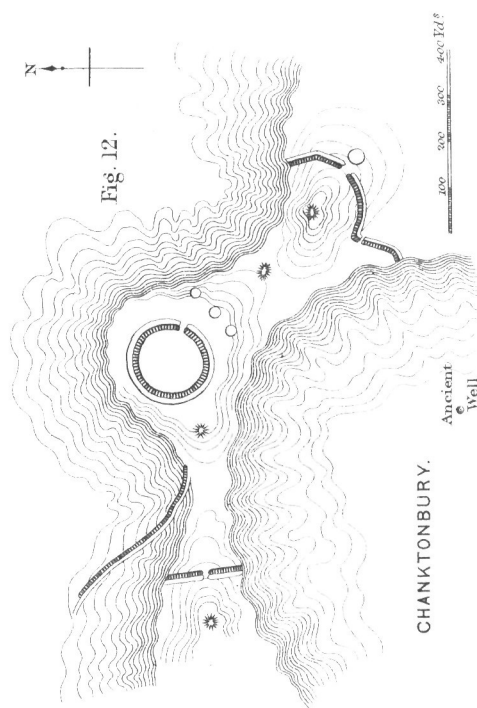
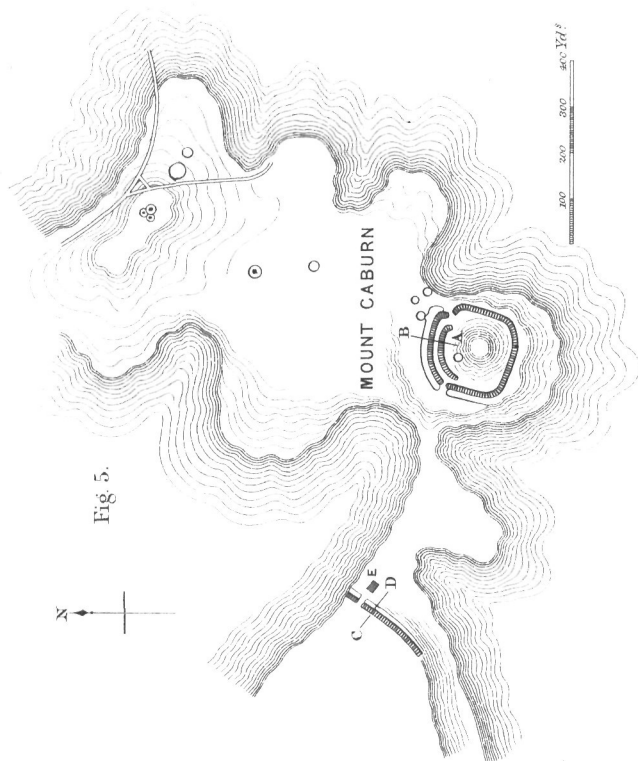
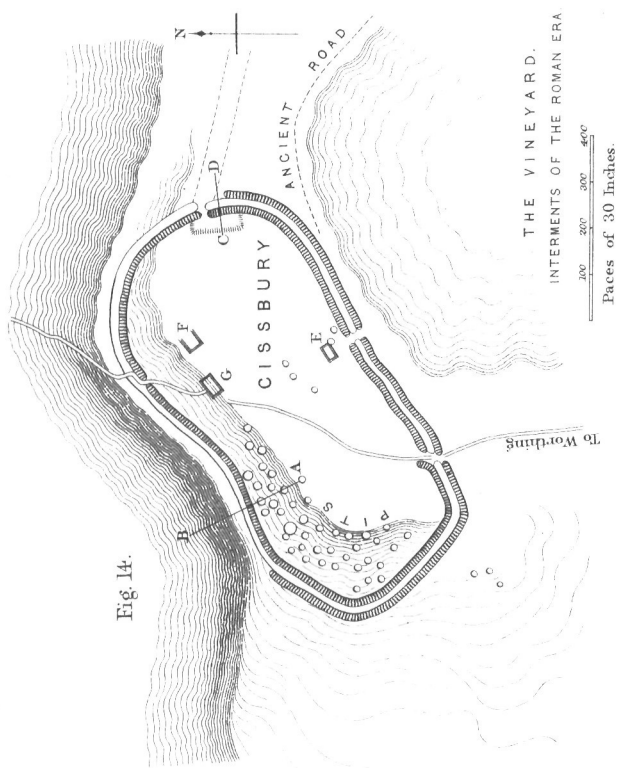
<sup>a</sup> These specimens were exhibited on the occasion of the reading of this paper.

Supposing the core from which the flake is struck off to be held upright, as represented in Plate VI. fig. 1, and the blow or pressure delivered vertically, the flake struck off, represented by the shaded portion of fig. 1, will usually have a flat surface on the top whence it received the blow. This is caused by the first stroke of the fabricator, who commenced operations by striking off one end of the flint core or nodule in order to produce a flat surface to receive the blows of the stone, or whatever other material he employed as a hammer. This top surface of the flake generally forms an obtuse angle with the inner surface that has been cleaved off from the core, as represented by the dotted line in the figure. The bulb of percussion caused by the conchoidal fracture of the flint will be on the inner or flat surface of the flake near the point where the top surface was struck by the hammer. The outside of the flake will have two or more longitudinal facets with a rib or ribs between, caused by the removal of previous flakes from the core, so that the cross section of the flake will usually be angular, as shown in the shaded cross section. These points will, I think, be admitted by all pre-historic archæologists to be sufficient to distinguish an artificial flake from one of natural formation; and, although these characteristics of the flint manufacture are pretty generally known to all who have given their attention to the subject, I have thought it necessary to describe them here, because, as they afford the only evidence of British origin that I have discovered in most of the forts it is necessary I should explain clearly what it is I mean when I speak of a flint flake.<sup>a</sup>

It may at first sight appear surprising that flakes struck off at so remote a period should still be found on the surface lying upon the grass, and not have been buried in the earth. But it must be remembered that on the tops of the hills upon the downs the vegetable mould is rarely more than from one to three inches in thickness, and in some places the chalk rubble is quite bare, so that a flake thrown down upon the surface in ancient times might remain for any number of ages uncovered. I examined some of them as they lay upon the ground, and found that the grass had not grown underneath them; others appeared to have been removed from their original position, and scattered upon the grass. The most usual situation for finding the flakes is in places where the turf has been removed. All the flakes have turned white to a depth of from an eighth to a quarter of an inch by decomposition of the surface after fabrication.

SEAFORD.—The next work to the west, forming the solitary occupant of the group of hills between the Cuckmere and the Ouse, is the camp above Seaford.

<sup>a</sup> See Proc. Soc. Antiq. 2 S. i. 73.





It consists of two faces, as represented in the plan and section (Plate VI. fig. 2, and Plate VII. fig. 3). That to the north-west is slightly curved, that to the east is straight. The ditch is on the outside. The sea, as at Beltout, has destroyed a portion of the work. The north-west face conforms to the outline of the hill, but the eastern face cuts straight across the plateau on that side. It has three entrances, one to the east, and two on the north-west face. One of these latter has a mound in rear, and a little on one side of the opening, which may possibly have been connected with the defence of the gateway. It is worthy of note that in the camp on Bodsbury Hill, figured in the paper by Mr. Irving in the tenth volume of the *Journal of the Archæological Association*, similar mounds are represented at each of the two gateways. Water for the supply of the camp must have been obtained from a spring at the bottom of the slope to the north, near which place traces of several rectangular inclosures probably mark the site of an ancient village. I found a few flints on the hill to the east of the fort, but none of artificial construction within the inclosure.<sup>a</sup> The earthwork at Beltout can be seen to the east, and that of Newhaven to the west. Local tradition assigns this camp to the Romans, and, although I am not aware that any actual evidence of Roman occupation has been discovered within the work, the rectangular outline of the portion of it which still remains, and the possible existence of some kind of traverse for the defence of the gateway, gives to this work more the appearance of a Roman entrenchment than any other I have seen on the downs. We also learn from Mr. Lower's work on the cinqueport of Seaford, that many traces of Roman occupation have been found in the vicinity.<sup>b</sup>

THE CASTLE, NEWHAVEN.—Three miles west of this fort, upon a commanding height, and, like the two just described, partly destroyed by the erosion of the cliff, stands the intrenchment known as the castle of Newhaven. The modern work now in process of erection for the defence of the port cuts through part of the ancient earthwork, and in the course of its construction the remains of a kitchen-midden, including specimens of worked flints, were brought to light in the interior of the old work, and have been described in the *Anthropological Journal*.<sup>c</sup>

<sup>a</sup> Since the above was written, Mr. John Evans, who spent a few weeks at Seaford during the autumn of 1867, and who had therefore greater opportunities of carefully examining this work, has informed me that he found a scraper and a few flakes within the fort.

<sup>b</sup> *Memorials of Seaford*, by Mark Antony Lower, M.A., F.S.A. p. 1.

<sup>c</sup> *Journal of the Anthropological Society*, No. 15, Oct. 1866, clxxxvii. The deposit included, besides flints, the evidence of the artificial workmanship of which appeared doubtful, fragments of pottery, supposed to be Roman, and bones of domesticated animals.

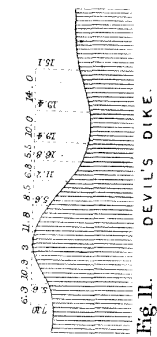


Fig. 11. DEVIL'S DIKE.

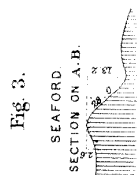


Fig. 12. SEAFORD.

SECTION ON A.B.

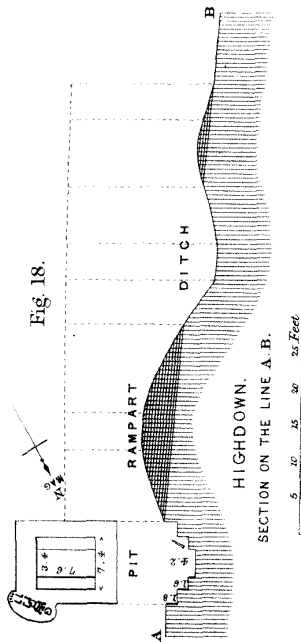


Fig. 13. CHANKTONBURY RING.

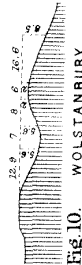


Fig. 14. WOLSTANBURY.

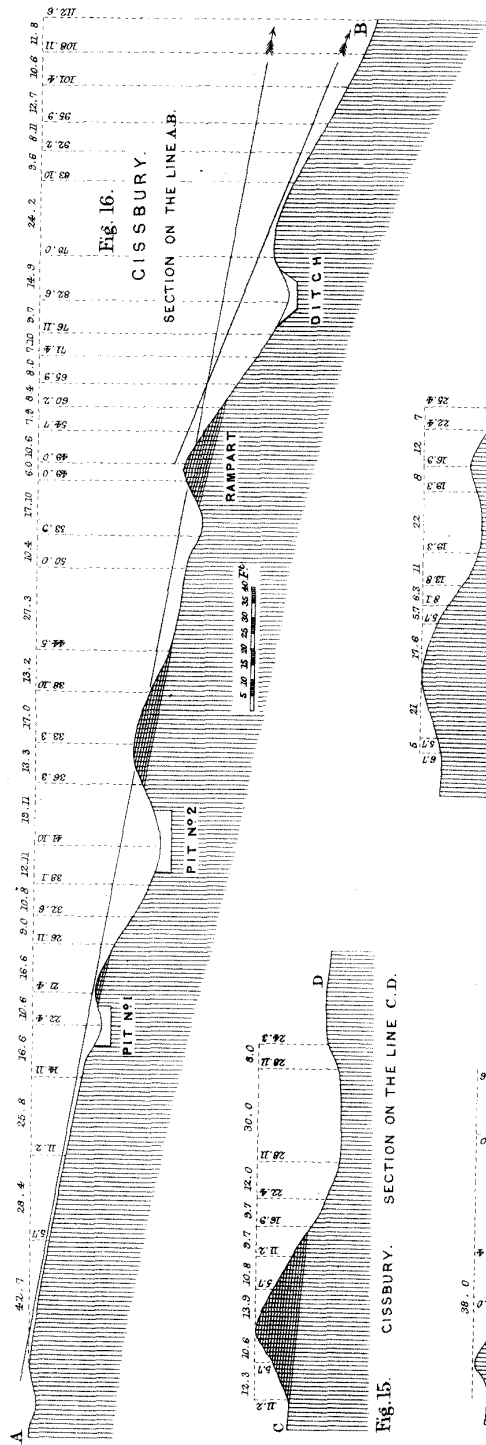


Fig. 15. CISSBURY.

SECTION ON THE LINE A.B.

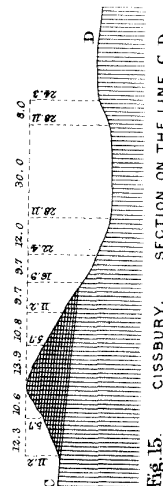


Fig. 16. MOUNT CABURN.

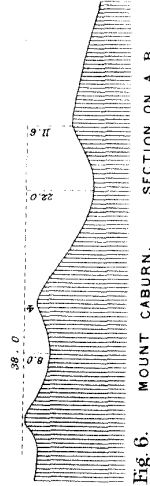


Fig. 17. MOUNT CABURN.

SECTION ON A.B.

Fig. 18. CASTLE, NEWHAVEN.

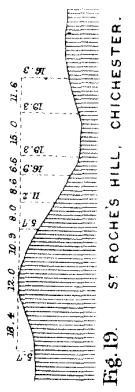


Fig. 19. ST ROCHE'S HILL, CHICHESTER.



Fig. 20. DITCHING.



Fig. 21. DITCHING.

About 1680 yards of the northern front still remain, and it appears to be arranged in a succession of re-entering curves and salient points, but the whole configuration of the surface has been so much altered by deep fissures, and by the decomposition and settlement of the plastic clay on which it stands, that it is difficult to judge of its original form. Enough however remains to show that this work, like that of Beltout, occupied the whole summit of the hill, and conformed to the outline of the brow. Advantage was probably taken of a natural terrace to give additional command to the rampart. Plate VII. fig. 4 is a section of the only portion of this work in which any trace of an external ditch is discernible. The fort commands the whole of the surrounding country, but the view is limited to the north-west.

MOUNT CABURN.—We now come to a series of works in the neighbourhood of Lewes. The cliff-hills to the north-east of the town form an outlying group of the downs, separated in former times from the main chain by the estuary of the Ouse, which extended from Glynd on the south-east of this group, to Hamsey and Barcombe on the west, and covered the whole of the level tract called Ox-settle Bottom to the south.<sup>a</sup>

Traces of a Roman ford have been discovered at Glynd; and upon the northern slope of the cliff-hills vestiges of an ancient roadway running from that direction to the west may be distinctly traced.

The group consists of a ridge of hills extending along its southern, eastern, and northern margin, and surrounding a deep valley which opens out westward in the direction of Lewes. On the south-eastern extremity of this ridge, which is the highest point, is situated the earthwork of Mount Caburn (Plate VI. fig. 5).

This work Mr. Turner, following Mr. Vernon Harcourt, considers to be a place of druidical worship. "It is constructed," says he, "of a double vallum, corresponding with a double row of stones at Stonehenge; and the mound of earth thrown up within the ramparts corresponds precisely with the Gorseddau or sacred hillocks, from which the Druids of the higher order were accustomed to pronounce their decrees, and to deliver their orations to the people. The name too of Caburn," or Cauburn, as he writes it, "is druidical, being a corruption of Carnbrauh, which, as Mr. Vernon Harcourt observes, is still the name of a hill in Caernarvonshire, and Carnbrea the designation of a hill in Cornwall, on both sides of which are situated undoubted druidical remains."

Notwithstanding this, a careful examination of the work has been sufficient to

<sup>a</sup> See a map of these ancient waters in Horsfield's *History of Lewes*.

convince me that from each of the points enumerated by Mr. Turner we may derive conclusive evidence that the entrenchment is not a druidical but a defensive work.

Its circular form is attributable to its following the outline of a circular hill, in conformity with the recognised principles of castrametation observable in all the other intrenchments of the neighbourhood. The supposed Gorsedd or sacred hillock does not appear to be an artificial but a natural formation. The double vallum which Mr. Turner supposes to correspond with the double row of stones at Stonehenge is double only on the northern or weak side of the hill, from which point alone, with the then existing features of the country, a hostile attack could have been anticipated, and on which side the slope of the ground outside is more gentle than on the southern half of the fort, where the hill runs steeply down towards what in those days must have been the water's edge, and on this side accordingly there is only a single parapet of very slight relief and scarcely any perceptible trace of ditch. This is in precise accordance with the principles of defence which I shall have occasion to point out in several other works upon the downs. It is also a noticeable feature in many other ancient works that I have examined elsewhere. I have frequently observed the same peculiarity in the dikes upon the Yorkshire Wolds, and it leads to the supposition that the ramparts of these intrenchments were intended not so much to give cover to the defenders or as an obstacle to the assailants, but rather to give the defenders a command over the outside of the work. It is probable that the defenders stood upon the tops of the banks and threw their darts and other missiles over a palisade or an *abatis* at the approaching enemy.

On those sides where the natural slope of the hill gave all the command that could be desired artificial banks of any great height were unnecessary, and the defence was probably limited to a stockade or an *abatis* on those sides. This is the only way of accounting for the total absence of earthworks in some points of a line of intrenchments, where a natural declivity presents itself and where the line of fortification could not certainly have been regarded as complete or inaccessible without some additional defence.

We may therefore assume from the fact of Mount Caburn having been guarded by a double rampart and deep ditch only on the accessible side,—a section of which is given in Plate VII. fig. 6; from the inner rampart having on that side a considerable command over the outer rampart, and from the fact that all trace of this inner rampart and deep ditch ceases at the precise spot where the steep slope on the exterior commences,—that this work was without doubt used as a fortification.

The name, moreover, which is usually written and pronounced *Caburn*, not *Cauburn*, appears, as Mr. Horsfield has suggested, to be derived from the words *Caer*, a fortress, and *burn*, a stream, like the adjoining Glyndburn; and its etymology might rather be compared to that of Caernarvon itself than of the hill of Carnbrauh.

Mount Caburn has two gateways leading in the direction of the two ridges of hill that run from it on the north-east and west. The gateway on the north-east is strengthened by the rampart being thrown back on each side of the opening in a re-entering angle so as to command and flank the passage across the ditch, which is over an embanked causeway.

Upon the outside of the opening, beyond the ditch, there are also distinct traces of three circles covering the opening, with intervals of about twenty paces between, through which intervals the defenders from the outside might be enabled to retreat towards the gateway, covered by the fire from these advanced posts, which were no doubt palisaded all round, or possibly the circles may merely mark the huts of an advanced guard stationed outside the gate; but whatever the detail of the arrangement may have been, the position of the circles in a triangle covering the gateway makes it impossible to doubt the intention as part of the defence of the work.

Seven hundred yards to the north-east, upon the summit of the ridge, in a position in every way suited for an advanced post, and commanding an extensive view to the north, is another circle of larger dimensions, a sketch of which is given in fig. 7. It consists of a circle, sixty-four feet in diameter, with banks thrown up about two feet, and a square pit in the centre, and having two attached chambers on the west side. Between this and Mount Caburn, in a direct line, are two other circles (marked on the sketch-plan fig. 5), which appear probably to have served as connecting links. To the east of this outwork, upon the shoulder of the hill on that side, and commanding the trackway leading to the ancient ford, are two other circles, one of which appears to have been opened, probably by Dr. Mantell; but I have not been able to ascertain the result of any excavations made there. These circles I imagine also to have been fortified posts; they certainly have no appearance of having been tumuli, of which there are several on these hills.

Five hundred yards to the west of Mount Caburn, on the summit of the other ridge which runs in that direction, is another work cutting across the hill, and apparently facing Caburn, with the ditch to the east, a section of which is given in Plate VII. fig. 8. The object of this work appears doubtful. It would be quite in conformity with the system of defence usually adopted that an outwork from

Mount Caburn should be erected at this place; and the fact of the ditch being on the inside of the rampart would not in itself be sufficient to disprove the supposition that this might have been an advanced work belonging to Caburn. But the southern end of the trench bends round to the west as if to cover the right flank of a force facing towards Caburn; and this makes it hardly possible to doubt that this work must either have been a line of rampart thrown up during an attack of that place, or that it may be the eastern face of another camp, the remaining sides of which have entirely perished. As however this work has been spoken of by former writers on the subject as a camp, I examined the whole hill in the endeavour to trace out the other faces of the work. The slope of the hill on the north side is so exceedingly steep that no intrenchment would probably be required on that side; in fact the eastern rampart has no appearance of having rounded the north corner, but ends abruptly on the hill side. On the extreme west slope of the hill however there are faint traces of an embankment in the cultivated ground, which makes it appear possible that the whole summit of the hill may have been inclosed by a rampart, in which case it must have been a work of considerable size.

Mr. Turner makes use of the existence of this fortification as an argument to prove that Mount Caburn was not a fortress; "for if it were so," he says, "why should another earthwork have been formed for similar purposes close to it?" But there is no absolute necessity for supposing that these two works were erected at the same time, and still less that they were occupied by the same people. The difficulty only arises from the fallacy of supposing a connected system of defence to have been established between the several intrenchments. It appears more probable that, as suggested by Mr. Horsfield,<sup>a</sup> the western earthwork may have been thrown up by a hostile force, possibly by the Romans during their occupation of Lewes, with the object of keeping in check the natives encamped in Mount Caburn.

The only other objects worthy of notice on this group of hills are the artificial terraces that exist upon the southern slopes, especially in the neighbourhood of that peculiar gully to the westward known to geologists as the Coomb. These terraces inclose oblong or square plots of ground, adjoining each other and sloping towards the south. They have very much the appearance of vineyards; similar terraced inclosures are found at Cissbury, near Ditchling, in the parish of Telscombe, Seaford, Lullington, and many other places upon the downs.

I found no flints in the interior of Mount Caburn, where the mould seems

<sup>a</sup> *History of Lewes*, p. 37.

thicker than in many parts of these hills, and the surface remains have probably been overgrown; but upon a patch of ground marked E in the plan (Plate VI. fig. 5), from which the turf had been removed, between the two intrenchments, and also on a similar patch to the west of the rampart, I picked up a great number of flakes, some specimens of which are now upon the table. Two similar patches to the north of the mount were searched without discovering a single flake, although thickly strewn with flints of natural formation.

I also found in two other places on the cliff-hills collections of artificial flakes strewn upon the surface of the ground. These must no doubt be the spots where the flint manufacture was carried on. As a general rule the flakes which are so abundant in the vicinity of some of the forts are wanting on the surface of the downs, and I sometimes walked for miles in the cultivated ground in search of them without finding a single flake. The interior of Mount Caburn has been thickly studded with small pits, probably the remains of huts; they are nearly obliterated, but are still discernible. I counted as many as fifty-two of them within the fort. One to the north of the central hillock is of much larger dimensions, and may possibly have served as a reservoir. I also found some pits at the north-west extremity of the hill to the west.

Passing over an intrenchment near the Lewes Beacon on the hill to the west of the town, which I had not time to examine with sufficient care to be able to form an opinion upon it, we next come to three intrenchments lying nearly in a meridian line across the downs to the north of Brighton. These are: White Hawk Hill, on the race-course near Brighton; Hollingbury, on an isolated hill two miles to the north; and Ditchling, which stands on the northern verge of the downs upon the highest point of the range, 858 feet above the sea-level.

In the Burrell MSS. these three works are attributed to the Romans, and are supposed to be the work of Vespasian when he reduced the Regni, who inhabited these parts. Mr. Horsfield follows in this opinion, but the evidence of Roman construction does not appear to be well founded.

HOLLINGBURY.--Mr. Horsfield considers Hollingbury to be Roman on account of its being square. Mr. Turner, on the other hand, attributes it to the Druids on account of its being "decidedly circular." From personal inspection I should pronounce it to be of an irregular square form, the corners being rounded, and the sides bulging. Such a configuration appears to have been the best adapted to the faces of the hill on which it stands. There are the remains of a bank

leading from the south-west corner of this work in the direction of Brighton. A block of Druid sandstone stands at the side of one of the gateways to the west, and another is on the parapet on the south side.<sup>a</sup>

WHITE HAWK HILL.—The work on White Hawk Hill has been partly destroyed in the formation of the race-course. It appears originally to have been an irregular circle occupying the summit of the hill, the east and west sides abutting upon the slopes, and the two other sides cutting across the ridge of the hill-top, which in this place runs north and south; it has a double vallum on the north side, the only part now remaining. The work does not command the slope of the hill to the south, and I think it very probable there may have been originally an outwork on that side which has been destroyed by the erection of buildings.

DITCHLING.—Ditchling, a section of the parapet of which is given in Plate VII. fig. 9, is of a somewhat quadrangular form, but does not appear to have the regularity of a Roman camp, the sides being slightly curved. The north side is secured by the declivity of the hill, which is very abrupt. A gentle slope falls from the other faces on every side. The approach to the fort up the hill-side to the north has been frequently noticed. The Rev. Thomas Hutchinson, M.A. Vicar of Ditchling, thus describes it:—<sup>b</sup>

“The original roadway exists to the west of the present comparatively modern road. It consists of a narrow fosse-way cut in the cliff to the depth of twelve or fourteen feet, so as to be a complete protection, and from it, about half way up the hill, the way branches off to the right for about 100 yards, running round a high mound of earth formed by the accumulation of the soil when the way was made, and returning nearly to the same point again.” [This is a mistake; it rejoins the line of the valley some 50 yards higher up, having diverged in the form of an angle, of which the sides are 100 and 113 paces respectively]. Mr. Hutchinson continues: “This was manifestly done for the purpose of observation, for it happens at a point of the downs the nearest to the adjacent coomb, so that when you reach this coomb, with which the way was evidently intended to communicate, a most extensive view of the weald of Sussex breaks in upon you. A more com-

<sup>a</sup> Since writing the above, my attention has been drawn by Mr. Boyd Dawkins to the evidence of an extensive flint manufacture which exists in the neighbourhood of Hollingbury, and which leaves little doubt on my mind that this work, like the others, was of British origin.

<sup>b</sup> *Sussex Archæological Collections*, xiii. 240.



plete point of western observation cannot well be conceived." Against this hypothesis, however, it may be said ; first, that it is very unlikely that a point of observation should have been constructed with so much labour half-way down the hill, when a far more extensive view could be obtained from any point upon the summit ; and next, that the mound round which the roadway winds is not thrown up, but its highest part is on the natural surface of the slope of the hill, and the road has been cut in a deep trench round it. The work appears to me to be nothing more than a zigzag of ascent up the hill, a piece of rather clumsy engineering perhaps, but by means of which a rise of several feet of road is effected in a comparatively short distance. The earth excavated from the trench has probably been used to construct the embankment of the roadway up the side of the hill. Finally, it may be remarked with reference to these three works that the discovery of Roman coins in their vicinity, though it certainly implies Roman occupation, does not necessarily prove them to be of Roman construction.

WOLSTANBURY.—The next important work three miles to the west is that of Wolstanbury, upon an outlying spur of the downs above Hurstpierpoint. In conformity with the outline of the commanding hill on which it stands, it is of circular form, about 250 yards in diameter. The ditch is everywhere on the inside of the parapet (Plate VII. fig. 10), and in those places to the north and east where the steep end of a ravine runs close up to the work there is no parapet at all, the defenders apparently trusting to the steepness of ascent for security in those places. The interior is completely filled with pits, evidently the remains of habitations, some of which open into each other so as to form a second and third chamber.\* To the south-east of the fort at about 300 yards from it a line of parapet with the ditch on the outside, viz : to the south-east, runs across the neck of hill which joins this spur to the main chain of the downs. This is evidently an outwork, situated on rising ground and commanding a gentle slope to the south-east. On the summit near the centre of the line, and close in rear of the trench, a cluster of pits marks probably the habitations of the outlying guard. This advanced trench ends abruptly on the brow of the hill on the north or left flank of the outwork, from which spot the hill slopes down abruptly, so as to secure that flank ; but on the south, where the slope inclines more gently, the trench runs for some distance down the hill. I found several flint flakes on the

\* Since writing the above I have ascertained that the interior of this work has been extensively dug for flints.

west slope of the fort, some of which appear to have been worked, and several more in the pits in the interior. It appears by a paper by R. W. Blencowe, Esq.<sup>a</sup> that flint and bronze celts and Roman coins have been found on Wolstanbury. Traces of a Roman road and villa have also been discovered near Hurstpierpoint in the meadows to the north, but the intrenchment must clearly be attributed to the Britons.

**DEVIL'S DIKE.**—Two miles to the south-west of Wolstanbury, and also on the northern margin of the downs, is the Devil's Dike. It is of oblong form, lying north-east and south-west, and about three furlongs in length. The intrenchment occupies a projecting portion of the hill jutting out obliquely into the weald, and separated from the main chain on its south-east side by a chasm of great depth and steepness, which from its most artificial appearance has obtained the name of the Devil's Dike, and is traditionally believed to be the work of that individual one night in an attempt to undermine and blow up the churches of the neighbourhood, an undertaking in which he was stopped short by an old lady holding a candle in a sieve, which the Devil mistook for the rising sun, and desisted from his midnight labour, thus leaving an unfinished work for the benefit of picnickers from Brighton.

On the north-west, north-east, and south-east sides the position is secured by the steep sides of the hill, and the intrenchment on these sides is accordingly of very low relief; but on the south-west side, where it cuts off the neck of hill which joins it to the main chain running from the extremity of the dike on the left, to the wealden slope on the right, the rampart has a considerable elevation, and a ditch of some depth on the outside, as shewn in the section (Plate VII. fig. 11). The position of the parapet is judiciously chosen all round, and runs, not along the top of the hill, but at a sufficient distance down the slope to enable the defenders behind it to command the approach to the work. Upon the whole the position is one of great strength and is most judiciously occupied. A good supply of water is now obtained from pumps within the inclosure. I picked up a solitary flint flake upon this entrenchment.

**CHANCTONBURY.**—The next work upon the northern margin of the downs is Chankbury or Chanctonbury, a sketch plan and section of which is given in Plate VI. fig. 12, and Plate VII. fig. 13. It is eight miles to the west of the Devil's Dike and on the opposite side of the Adur. Like Mount Caburn, it stands at the apex

<sup>a</sup> *Sussex Archæological Collections*, xiv. 176.

of an obtuse angle formed by the bend of a ridge of the downs. The intrenchment is circular, about 140 yards in diameter, conforming to the configuration of the ground, which slopes gently from it on all sides, except the north, where the declivity is very abrupt, and is not seen from the rampart. The view over the weald from this spot, which is 622 feet above the sea, is magnificent, and the clump of trees which now occupies the inclosure may be seen from the surrounding country for many miles. On both sides of the work, to the south-east and to the west, an outwork cuts across the neck of the hill. These works are equidistant from the central intrenchment at 380 yards from the ditch of that work. That to the west is thrown up about 100 yards short of the summit of the rise on that side, a position which appears to have been chosen on account of its being the narrowest part of the hill. The rise to its front is not sufficient to give it any material command over the work. The work to the south-east has an epaulment on the south end, where it joins the brow of the hill, and then runs north in a straight line till it comes to a plot of rising ground which it winds round in a semicircle, so as to command the slope to the east; its left rests on the steep slope to the north. In addition to these outworks, which it will be seen are analogous to those of Wolstanbury, the entrance to the main intrenchment on the east side is covered at fifty paces distance by three circles with slight depressions in the centres, resembling those outside the gateway at Mount Caburn. A similar circle covers the opening of the outwork on the east, and another, which after excavation I also believe to be an advanced post, covers at 100 yards distance the opening of the outwork on the west; the communication with the main work is also kept up by means of intermediate links consisting of mounds which have the external appearance of tumuli, which have been opened in the centre, but which, as they afforded no evidence of interments during the excavations that were subsequently made in them, I suppose from their situation to form part of the fortifications of the place.

We are thus enabled to recognize in these arrangements established principles in the castrametation of this part of the country. Whether these outworks formed part of the original design of the camp or were the subsequent additions of people occupying them in after times, is a point that it may now be difficult to determine. The fact of the outworks being of much smaller relief than the ring itself does not necessarily prove the former to be of later date, as the original constructors would naturally have devoted their chief attention to the principal work.

In the case of Chanctonbury the outworks may very possibly have been intended to cover the communication with the supply of water, for at the bottom of the

valley, on the south, there is a deep hole, now partly filled up, which can hardly have been dug for any other purpose than that of containing water; for, although it is unlikely it should ever have been a well from the great depth it would have been necessary to bore to obtain water, yet situated as it is at the junction of two coombs, it may very likely have been intended to collect the surface-drainage from the surrounding heights, and, being within command of the outworks on the summits, easy access could always be had to it from the fort.<sup>a</sup> I found a quantity of flint flakes within the inclosure; some of them have marks of secondary chipping.

CISSBURY.—To the south of Chanktonbury, and about half way between it and Worthing, upon the highest part of the hill in that neighbourhood, which in this place is only twenty feet lower than Chanktonbury ring, and commanding the whole of the country between it and the sea, is situated the ancient fortress of Cissbury, a work which, from the size of the inclosed area and the height of its intrenchments, must be regarded as the principal stronghold of Sussex. A more detailed account of this work will be given hereafter; but, in order to compare the principles of its construction with those of the intrenchments already described, it may be as well here to mention that the line of rampart conforms to the outline of the hill, so as to include the whole summit within its area, inclosing a space of about sixty acres, as represented in the rough plan-sketch (Plate VI. fig. 14). This extensive line of rampart varies in size according to the strength of the ground it traverses. Thus on the north side it is of small dimensions; but on the south-west, where it passes over a branch of the hill having a more gentle slope on the outside, the size of the rampart is increased in height and thickness, and another of smaller dimensions is added to the outside of the ditch. On the east, where the rampart cuts off the neck of hill which runs eastward in the direction of Lancing, the intrenchment is of considerable magnitude, as shown by the section on that side, represented in Plate VII. fig. 15.; and it forms

<sup>a</sup> After a second visit to this place, and from information kindly afforded me by Mr. Goring, on whose property the fort stands, I have come to the conclusion that this must be an ancient well, probably constructed by the Romans, coins of which people, of a late date, were found in great numbers when planting the inclosure. During the excavations I also found Roman tiles in the advanced circles. The water supply for the original British intrenchment was probably obtained from a good spring about a quarter of a mile distant, at the foot of the hill to the north-east, to which spot there is an ancient roadway, which, like that of Ditchling, has a rampart thrown up on the side of the valley. It runs obliquely down the hill from the fort to the spring.

a conspicuous feature in the outline of the hill known throughout the surrounding country as Cissbury Knot. A comparison of this section with that taken on the north or steep side of the hill (Plate VII. fig. 16), shows that, although the rampart at the latter place has an equally imposing appearance on the outside owing to the natural slope of the ground, the area excavated and thrown up, as marked by the shaded portion of the section, is considerably less. In this section (fig. 16) we may also admire the skill displayed by the constructors in selecting the position of their rampart. Had it been thrown up on the top of the hill, a considerable portion of the slope to the front of it would have been hidden by the intervening ground, but by throwing the line forward half way down the slope of the hill, the whole of the ground on the outside of the work is exposed to the fire of the defenders.

There are four entrances to the fort, one opening on to the neck of hill to the east, two on the south, the most western of which is through a slightly re-entering angle; the rampart here and on the east side rises some feet on each side of the entrance. On the north side there is another entrance, the pathway through which is not in a direct line through the rampart, but makes a return on the ditch, by means of which the outer opening in the counterscarp is enfiladed by the rampart behind. Whether this formed part of the original design, or is an accident of subsequent creation, it is difficult to determine.

The whole of the slope on the west side of the rampart is completely honey-combed with pits of various sizes, varying from twenty to seventy feet in diameter.

The object of these pits has been a subject of repeated controversy. As I shall have to give a detailed account of the excavations I made in them, I will not now enter into a description of them further than to state that the great number of flint flakes that I found scattered around them led me to think that it might be desirable to explore them; the excavations brought to light a large number of flint implements, specimens of which are exhibited, all of the chipped and unpolished description, and no trace of metal of any kind accompanied them. As I have already described similar pits in many other forts in the neighbourhood, we shall be prepared at once to believe with Cartwright, who mentions them in his *History of the Rape of Bramber*, that they may be the site of rude huts.

The foundations of three small quadrilateral earthworks, marked E, F, and G, Plate VI. fig. 14, the faces of which are from twenty to one hundred feet in length, are distinguishable within the inclosure. Of these one is about forty paces in rear of, and opposite to, the southern entrance; and the other two are upon the brow of the hill, near each other, and commanding the opening on the north side.

These rectangular buildings appear from their outline to be more recent than the fort itself, and from their position may perhaps have been intended to contain the guards of the several entrances. On the south side of the hill an ancient roadway leads from the central gateway down the eastern slope of the valley in the direction of Broadwater; and on the same side of the fort, terraces resembling those of the cliff-hills near Lewes can be distinctly traced, and are known locally under the appellation of The Vineyard.

The question of the water supply for this large encampment has been much discussed. The possibility of its having been obtained from wells in the immediate neighbourhood appears to be remote, as I am informed by Captain Wisden, the owner of the property, that the nearest well now existing, at a farm a mile and a quarter to the south, is 80 feet deep, while those of Warren House, 300 yards further, are 60 feet; the wells in Findon, in the valley to the west, are also of great depth.

It has been suggested by Cartwright, and Mr. Turner mentions the same opinion, that water was obtained from Aplesham, three miles distant to the east, and that from Aplesham to Cissbury a covered way existed for the purpose of securing this supply. It is of course impossible to deny that such a communication may have been in existence at the time that Cartwright's history was published, but after examining the ground, I confess I have been unable to discover any present trace of it, or at least of its communication with Cissbury. There is certainly a line of road with a bank on both sides upon Lancing Hill running in this direction, but it is no longer visible, if it ever existed, on the hill upon which Cissbury stands. That a people, moreover, so well skilled in the art of fortification as these are proved to have been, should have selected for the site of their camp a position three miles distant from water, when another equally commanding, and otherwise suitable for defence, presented itself upon "Steep Hill" in the direct line, and in the immediate vicinity of the springs at Aplesham, appears to me so very unlikely that we ought at once to reject such an assumption. If I am asked, whence then did the supply come, I should say, without doubt, from Broadwater, which place is full of springs, one of which, sufficient for the supply of an army, rises within a mile and a half of the camp, and in the direction of which an ancient roadway is distinctly traceable, leading from the southern entrance of the camp. This was probably the source of supply of the original constructors; but some years since, I am informed, that whilst making a well at Leechpool in the bottom, a mile to the east of Cissbury, the workmen came upon an ancient well, which was utilised, and which has afforded a constant

supply of water ever since. This I imagine may have been the work of the Romans, of whose occupation of Cissbury, though probably in small force, we have now sufficient evidence, as will be proved hereafter.

In considering the supply of water for these works, we ought not however to be guided solely by the existing state of the springs at the foot of the downs, for, as we have already seen, the waters in the valley formerly stood at a much higher level, a circumstance which could not fail to have considerable influence upon the springs of this neighbourhood. Even now, I am informed by a labouring man who has been constantly engaged in the construction of wells during the last fifty years, that whenever the river is flooded at Bramber, six weeks afterwards the water rises to a considerably higher level throughout this district. These considerations appear to afford strong confirmation of the opinion, that the supply of water must have been much more copious in ancient times.

HIGHDOWN.—Four miles to the south-west of Cissbury, a much smaller work, of a quadrilateral figure, was erected on Highdown (Plate VI. fig. 17, and Plate VII. fig. 18), an isolated hill of chalk formation in the low country between the hills and the sea. There are five pits in the interior of the work on the west side, and another was afterwards discovered in the rear of the southern rampart, which will be described hereafter.

With the exception of an intrenchment at Burpham on the left bank of the Arun, which I had not an opportunity of visiting, no other work of the same character exists until we come to ST. ROCHE'S HILL, four miles north of Chichester, upon the top of the highest ground in that neighbourhood, overlooking the Goodwood race-course. Like most of the intrenchments before described, this work occupies the whole summit of the hill, and surrounds the circular hill-top. It is about 300 yards in diameter. The rampart, a section of which is given in Plate VII. fig. 19, has a considerable elevation and a ditch on the outside. It has two entrances, on the north-east and south-west. Some way down the hill on the north side there is a much smaller trench, a section of which is given in Plate VII. fig. 20, running in a concentric semicircle round the fort. This possibly may be the work referred to by Mr. Turner when he speaks of a double vallum. It is however at some distance from the interior rampart, and the fact of the ditch of the exterior and smaller rampart being on the inside *towards* the fort, renders it problematical whether this may not have been a work of circumvallation investing the place. About a mile to the south of the fort, at the bottom of the hill, there are also

some ancient earthworks, which from their general outline and arrangement convey to my mind very much the idea of having been thrown up during an attack of the great work above it. The parapets are of small relief, and a line of intrenchment may be traced from this place over the hill to the south-west in the direction of the Broil,<sup>a</sup> which is an ancient work of great extent defending the north and east sides of the town of Chichester. May it not be possible that these works represent the attack of the Romans upon the British post on Roche's Hill, at the time they established themselves in the territory of the Regni? Three other works at Selsea Bill, Bow Hill, and Heyshot, which I had not time to examine, complete the camps of southern Sussex.

Taking a general view of the whole of the intrenchments that I have described, what are the principles of castrametation which may be regarded as characteristic of the people by whom they were erected?

First. The intrenchments occupy the whole summits of the eminences on which they stand. Both the *extent* and *outline* of the ramparts are regulated by the features of the ground, and they invariably command the whole slope of the ground in front, and within range of the projectiles then used. This is essentially at variance with the practice of the Romans, whose camps were laid out in conformity with the strength of the force intended to occupy them, and with a chief regard to considerations of discipline and interior economy. For although it may be true, as Mr. Irving has observed, when contending for the Roman origin of Cissbury, that their camps might be either square, semicircular, or triangular, according to the nature of the ground and other attendant circumstances, yet we know from the numerous undoubted examples of their camps which have been left to us, that their habit invariably was to arrange the several faces in straight lines, so as usually to form an inclosure of oblong or square form, and that they were not always in a position to take the best advantage of the undulations of the ground.

Moreover, the tactical arrangement of the outline of the camp is not one of the points chiefly insisted upon, even by Vegetius, whose authority Mr. Irving quotes in support of his argument.

If it is contended that the regular oblong outline was employed only in works of the largest size, intended to contain a legion of from six to seven thousand men, and that smaller posts were arranged in conformity with the outline of the ground, it must on the other hand be admitted that such a work as Cissbury and the

<sup>a</sup> There were earth-works at Somers Town called *The Brill*, which Stukeley considered to be Roman, though Lysons (*Environs of London*, iii. 343) very strongly opposes this opinion. The coincidence of the name is in any case worth remark.



larger intrenchment upon the cliff-hills near Lewes can only be regarded as camps of the greatest magnitude, and ought therefore according to the Roman system to be rectangular.

Taking the whole circuit of Cissbury Camp and allowing two men for every yard of parapet, and a third more as a reserve, the lowest computation according to modern notions of the number of men that would be necessary to defend such a work would fix the garrison at 5,000. And from the little that is known of Roman occupation of this part of the country, it seems unlikely they should themselves have erected a work of such magnitude, although they may doubtless have occupied it in small force in after years.

2ndly. Considerations of the supply of water and fuel are, in these camps, invariably sacrificed to the necessity the people appear to have been under of occupying the strongest features of the country. I did not meet with a single example in Sussex of a fort having a supply of water within the inclosure, and the majority, like Cissbury, are at a considerable distance from a spring. Nor could fuel have been obtainable anywhere in their immediate vicinity.

This, according to Vegetius, was a primary requisite in the selection of a Roman camp: "*Castra autem, praesertim hoste vicino, tuto semper facienda sunt loco, ubi et lignorum, et pabuli, et aquae suppetat copia.*"<sup>a</sup> Accordingly we find amongst those camps which are of undoubted Roman construction, many of which have been figured by General Roy, no instance of the neglect of these principles. The Roman camp, if it does not actually inclose a spring within its outline, is always in the immediate vicinity of water, and in some places the strength of the camp appears to have been sacrificed with a view to secure a supply of this necessary commodity; as for example in the Roman camp of Birrensworke Hill in Annandale, figured in plate xvi. of General Roy's work, where the rampart is completely commanded within 100 yards, but incloses a good spring.

3rdly. The strength of the ramparts in the Sussex forts corresponds inversely to the natural strength of the position. In some places where a steep declivity presents itself, there is no rampart, implying that the defence of those places must have been confined to an *abatis*, or a stockade. I am not aware of this being a recognised feature in Roman camps, although their ramparts were also strengthened by stockades.

4thly. The ditch, generally on the outside, was sometimes in the interior of the work.

<sup>a</sup> Vegetius, lib. i. c. xviii.

5thly. Outworks were thrown up upon commanding sites within 200 or 300 yards of the main work.

6thly. The ramparts at the gateways were increased in height, and were sometimes thrown back so as to form a re-entering angle, and thus obtain a cross fire upon the causeway over the ditch. This is not the characteristic of a Roman gateway.

7thly. The gateways were sometimes covered on the outside by circular erections having intervals between. Those of the Romans were covered either by a simple traverse, or a semicircular demilune. Notwithstanding this however, I am inclined to think, from fragments of Roman tiles which I discovered during excavations in the body of two of these circular outworks at Chanktonbury, that they may have been subsequent additions during the Roman era.

8thly. The inhabitants in the interior were located in pits. This was not the practice of the Romans, but is known to have been the custom of the ancient Britons.

9thly and chiefly. The interior surface of the majority of these forts is strewn with flint flakes of artificial manufacture, and the excavations which I have made in them, so far as they go, have resulted in bringing to light a large number of flint implements, all without exception of the chipped and unpolished kind and unaccompanied with any trace whatever of metal.

This is in itself sufficient to betoken a pre-Roman origin. As however the evidence connecting these implements with the erection of the intrenchments, and a more detailed account of the excavations in several of the works, will form the subject of a future paper, I think it better to postpone the consideration of this subject for the present.

One more point remains to be considered in regard to the connection which it has been supposed these works had with each other in the general defence of the country.

Mr. Turner, supposing that the several intrenchments formed a connected series for the protection of the hill district, divides the forts into three lines of defence. Those on the northern margin of the downs, including Heyshot, Chanktonbury, the Devil's Dike, Wolstanbury, Ditchling, and Mount Caburn, he considers to form the northern chain. The southern, or coast line, he considers to be formed by the Broil near Chichester, Burpham near Arundel, Highdown, Cissbury. White Hawk Hill near Brighton, Newhaven, Seaford, and Beltout; while the central or intermediate line, connecting the other two, he supposes to consist of Chilgrove, Bowhill, St. Roche's Hill, and Hollingbury.

The position of the gateways of these works he also seems to think affords evidence of connection for defensive purposes. "Those of the northern line are to the south, east, and west. Those of the southern line to the north, east, and west, while those of the intermediate line differ in all."

There does not however appear to me to be anything, either in the position of the gateways or of the works themselves, that is incompatible with the hypothesis of their having been isolated works, erected by several distinct tribes as a protection against the incursions of their neighbours. Such a state of society is more in accordance with what we find to be the early condition of savage life in every part of the world. We know that in the time of Cæsar the several tribes of the Gauls and Britons were always at war with each other until they united to repel his attacks; and the lower we descend in the scale of civilization the more invariably we find that races were split into tribes and families, living side by side in a condition of perpetual hostility.

The highest summits of the downs, as I have already mentioned, are those of the northern ridge; and here therefore we might naturally expect to find the strongholds of the several tribes of the early Britons, to whom a strong defensive position and an extensive view, giving timely notice of a hostile incursion, must have been an absolute necessity of existence. In like manner the line of the sea-coast would afford the best positions of defence for the inhabitants of the maritime district. Three out of four of the coast works have had their sea-faces destroyed, so as to render it now impossible to determine whether entrances formerly existed on those sides. It is however natural to suppose that, whether situated on the northern or southern margin of the downs, the entrances would be constructed on those sides which afforded the most easy access to the place. The flat ridges of the downs were the great thoroughfares in those days, and the gateways would therefore usually be placed in the direction of those ridges. This we find to be unmistakeably the case at Mount Caburn, Chanctonbury, and Cissbury.

The existence of large intervening estuaries which, as I have already noticed, formerly separated the groups of hills is also opposed to the notion of a connected system of defence. Each group of hills, it will be seen, had a stronghold of its own, intended, no doubt, to contain the inhabitants of the surrounding district, who dwelt in the valleys beneath, where fuel and water was obtainable, where traces of their cultivation still exist, and who, like the savages of Africa and many other parts of the world, resorted to their stronghold in times of danger, each man carrying with him fuel, water, and provisions sufficient to sustain him during the short duration of a predatory attack.

It is in this feature of isolation that the Sussex camps differ so materially from the intrenchments of the Yorkshire wolds, where we see unmistakeable traces of the landing and subsequent operations of a united people, extending for miles into the interior of the country.

The earthworks of the south of England on the contrary, though far superior in a military point of view to the Lis and Rath of the Irish, resemble them in the evidence they afford of numerous distinct and independent tribes, and lead us rather to infer the existence of frequent intestine wars, in which each section of the community fortified itself against the attacks of its immediate neighbours, than of any extensive and combined system of national defence.