IV.—*Further Remarks on the Hill Forts of Sussex: being an Account of Excavations in the Forts at Cissbury and Highdown. By Colonel AUGUSTUS HENRY LANE FOX, F.S.A.*

Read March 5th, 1868.

IN a paper which I had the honour of reading to this Society on the 6th February 1868 I gave a general description of the ancient earthworks of the downs between Beachy Head and Chichester, and I concluded by expressing an opinion, derived chiefly from a consideration of the principles of castrametation, outline, and other indications observable on the surface, that these intrenchments belonged to the Ancient British period, and were not, as some writers have supposed, the work of the Roman invaders of this country.

I shall perhaps be excused if I very briefly recapitulate some of the leading points upon which I then based my conclusions. They were as follows:—

First. The size and outline of these intrenchments are regulated by the size and outline of the hills upon which they stand; that is to say, the whole hill top, or the whole available portion of it, appears to have been fortified by a line of rampart drawn along the brow, in the position best suited for defence, and with but slight regard to the amount of space inclosed within its circuit; whereas the Roman practice was to regulate the outline and arrangement of the camps in accordance with the strength of the force intended to occupy them, and with a chief regard to the considerations of discipline and interior economy.

2ndly. They occupy invariably the highest summits of the hills, in positions frequently remote from fuel and water, points which were considered of the first importance in selecting the site of a Roman camp.

3rdly. They are of greater extent, and in greater number, than would warrant us in attributing them to the Romans, judging from the little that is known of the Roman occupation of this part of the country.

4thly. The inhabitants in the interior of these works frequently dwelt in pits, which was not the Roman practice.

5thly. The defensive arrangements of the gateways are not in accordance with the Roman plan.

6thly. These intrenchments are in an especial manner associated with evidence of the manufacture of flint implements found scattered in great abundance upon the surface; and the very staunchest upholder of the hypothesis of Roman origin will be compelled at once to admit that the Romans did not employ that material in the construction of their tools and weapons.

As the nature of the relics discovered in a work of this kind appears to afford the most reliable source of evidence of the race and condition of the people by whom it was erected, I determined to make a series of excavations, in order to determine whether the indications of the stone age observable on the surface corresponded with those of the implements found in the soil; and if so, whether the positions in which these implements were found were such as to afford evidence of their having belonged to the people who constructed these forts.

Cissbury, on account of its magnitude, the existence of pits in the interior, the great quantity of flakes on the surface, and the notice which it has attracted in times past, appeared to me the best work upon which to commence operations; and I therefore applied for permission to dig, to Captain Wisden, the owner of the property, who not only afforded me every facility, and himself took much interest in the prosecution of the work, but also, with much liberality, placed at my disposal all the relics of antiquity that I found in the place, and who is therefore himself entitled to a considerable share of whatever credit may be due to the exploration of this interesting locality.

The first mention of Cissbury by any antiquary of note, is by Camden, in his *Britannia*.^a "Near it," he says, speaking of Offington, "is a military fortification, surrounded with a rude bank of earth, where the inhabitants believe Cæsar incamped; but its name Cissbury plainly bespeaks it the work of Cissa, second Saxon king of these parts, after his father Ella, when he landed with his brother Cimen, and a considerable body of Saxons at Cimen shore, so called from Cimen, which has now lost its name, but appears by King Cidwalla's grant of it to the church of Selsey to have been near Wittering." Rapin in his *History of England*^b

^a Camden, by Gough, 1789, i. 188.

^b Rapin's *History of England*, i. 59.

follows the opinion of Camden, attributing both this place and Chichester to Cissa, whose name they take.^a

A plan and section of this incampment is given in Cartwright's "Parochial Topography of the Rape of Bramber," vol. ii. part ii. with the following description of it: "At the northern extremity of the parish of Broadwater, on the Offington estate, is Cissbury, an ancient incampment, surrounded by a single vallum, following the course of the hill, and inclosing within its area sixty acres. The origin of this incampment must be referred to the remotest times, and is lost in impenetrable obscurity." The author continues—"That a situation, including the crown of a hill, and commanding an uninterrupted view over an open country, should have been occupied as a military station, in almost every successive period of our history, is highly probable. Within the area on the west side there are deep indentations, which have the appearance of the site of rude huts; this circumstance, and the appearance of burnt bones and fragments of vessels of unbaked clay, are considered as indications of British origin. The discovery of Roman coins is a sufficient evidence of its being used as a Roman station; and its occupancy by the Saxons may be presumed from the probability of its present name, *Cissbury*, having been derived from Cissa, a Saxon general."

The same views are expressed in "An Historical and Descriptive Account of the Coast of Sussex," by J. D. Parry, M.A.

In 1831 it is described by Mr. Mark Antony Lower, in his Historical and Topographical Description of Sussex, as "a remarkable hill three miles from Steyning, and four from the sea, on which is an ancient circular or oval earthwork defended by a double trench. Vulgar tradition derives its name from Cæsar, of whose camp they pretend to show the site; but it is without doubt a Saxon fortification, and this is proved by some of our oldest historians, who say that, after the battle fought at Mercreadesburn, in the year 472, they founded this place for their defence, giving it the name of Cissa's burg, from Cissa the son of Ella, afterwards king of Sussex, which name in the course of time became corrupted into Cissbury."

Mr. Turner^b enters at some length into the origin of Cissbury, and concludes

^a This is also in accordance with the opinion of Camden, who says, in the *Britannia*, i. 185—Gough's edition—"Chichester, in British, *Caer Cei*; in Saxon, *Cissan Ceaster*; in Latin, *Cicestria*; is a tolerably large city, walled round, built by, and named after, Cissa, the second Saxon prince of that province. Cissanceaster means nothing more than the City of Cissa." If, however, *Caer Cei* was the British name for this place, it does not appear quite evident why it should be necessary to introduce the name of Cissa in order to form Chichester.

^b *Sussex Archæological Collections*, vol. iii.

by assigning it to the Britons. He also discusses the object of the pits on the west side, and rejects the idea which at first sight suggests itself, that they were used as reservoirs, on account of their having been excavated in the chalk hill; but he comes to a conclusion, which I confess does not appear to me warranted by any evidence adduced, viz., that they were "dish barrows, holy consecrated recesses, formed for the especial purpose of forwarding the celebration of the religious ceremonies of the Britons during their sojourn in these hill forts."

Mr. Turner appears to have convinced himself of the subsequent presence of the Romans in this incampment, alleging in support of this opinion:—

First. That to the east it was *apparently* connected by a road, "a *considerable* portion of which is now to be seen," with the Roman Station discovered in the year 1828 upon Lancing Hill. But in the absence of a more detailed account of this way, we ought not, I think, to take it for granted that it originally communicated with Cissbury, especially as no present trace of such a connection exists, and the only roads which now lead from the east of Cissbury run, one possibly in the direction of the ancient well at Leech Pool, mentioned in my former paper, and the other certainly to the springs at Broadwater.

The second point adduced by Mr. Turner is the discovery of Roman pottery in the garden and paddock of Mr. Wyatt at the foot of Cissbury Hill, and also the existence of terraces on the slope to the south of the fort upon a spot traditionally called The Vineyard, and in a situation particularly well adapted for the cultivation of the vine, which the Romans are supposed to have been the first to introduce into this country. But the presence of Roman pottery in the neighbourhood of the fort, which is also undoubtedly the neighbourhood of a Roman villa, is no absolute proof of the Roman occupation of the fort itself; and the Vineyard is precisely similar in every respect to the terraced inclosures, which, as I have mentioned on a previous occasion, exist in many other places to the eastward, on the southern slopes of the downs.

If therefore the Roman occupation of Cissbury rested solely upon the evidence brought forward in the paper under consideration, however probable in itself such a circumstance may be regarded, it could not, I think, upon such evidence be considered as *proved*, nor I presume does the author himself think that it could.

Mr. Irving, whose paper, referred to in my former communication, was published in the Journal of the Archæological Association,* is the first who attributed the *construction* of Cissbury to the Romans, and, as his opinion is based

* Vol. xiii.

upon the evidence of excavations conducted by himself, it is on that account especially deserving of consideration. Mr. Irving, comparing the Cissbury group of forts with others that he had examined in Lanarkshire, believes them to form a connected system of defence, of which Cissbury is the central and principal work.

Chanktonbury on the north, Highdown on the south-west, and Lancing Hill on the east, he considers to have formed the outposts of Cissbury. But, at the very outset, much might be said against this assumption; for in the first place Chanktonbury, as mentioned in my former paper, has outposts of its own, thrown up partly in the direction of Cissbury. At Lancing, although there are traces of a Roman villa and of dikes upon the hill, I could see no evidence, during a certainly somewhat cursory examination that I made of the ground, of a military station having been established there; and the intrenchment at Highdown, I shall subsequently show reason for supposing, was of a different period from that of Cissbury, and belonged to the age of bronze weapons.

Mr. Irving opened four pits in Highdown, from which he obtained numerous articles of various ages, consisting chiefly of charcoal, bones, pottery, iron nails, tobacco pipes, and other remains, many of which were of modern date. He then excavated two pits near Offington Mill, about a mile to the south-west of Cissbury, from which he obtained implements of iron, with bones, and fragments of pottery; and he subsequently opened nine pits in the interior, and apparently to the south-east of Cissbury intrenchment, of the contents of which he gives the following account:—

“The opening of No. 1 was found to be exceedingly difficult, owing to its contents consisting almost entirely of a collection of large pebbles washed down from the sides; the operation moreover produced nothing but a halfpenny of William III.

“Nos. 5 and 6 presented the same character of soil, and were consecutively drawn blank. In No. 7 the soil was of a softer nature, and the excavation, as at Offington Mill, produced a trace of wood charcoal, a quantity of oyster-shells, and fragments of bones and pottery, but *no iron antiquities*.”

It would appear from Mr. Irving's paper, that, viewing the several intrenchments in this neighbourhood as part of a connected series, he submitted the various articles found in them for identification to Mr. Syer Cuming *en masse*, or at any rate it is evident from the report quoted in the paper and headed “Antiquities from Cissbury and Highdown Camps, Sussex,”^a that Mr. Cuming pronounced upon them collectively, and we are therefore unable to draw from the

^a *Journal of the Archæological Association*, xiii. 291.

opinion thus given, the distinctive differences of the several articles discovered in Cissbury, Offington, and Highdown, which it is important to keep in view. But from the account which Mr. Irving himself gives of the Cissbury excavation, we may derive conclusive evidence that no trace of metal was found there, and, with the exception of a few fragments of pottery found in only one of the pits, no vestige of anything that could by any possibility be attributed to Roman occupation.

The foregoing brief summary of the opinions of former writers comprehends, I believe, the whole of the information respecting Cissbury which can be collected up to the present time. And it certainly does, at first sight, appear remarkable, that in the mass of commentary and speculation to which I have adverted, not one syllable should have been said respecting the flint implements, of the existence of which in such great numbers, even on the surface of the ground, such abundant evidence is now upon the table before you,^a and from the presence of which we derive the most incontestable and undoubted proof of the ancient British origin of this intrenchment. The oversight must without doubt be attributed to their having been disregarded amongst the innumerable blocks and natural fragments of flint with which the soil and surface of the downs are everywhere covered throughout this district. The flint implements, at the time of their fabrication, were of course of the natural dark colour of the interior of a block of flint. But in the course of ages their surface has become whitened by decomposition, so as to resemble, to the unpractised eye, the outer coating of a flint nodule, and thus render it extremely probable that the distinctive differences between them should be overlooked by any one who was not especially on the watch for the traces of human workmanship in this material, and prepared by previous examination of worked flints from other localities to distinguish the artificial from the natural forms.

The truth of this observation showed itself very clearly during the course of the excavations, in the great difficulty which was at first experienced in getting the workmen to notice the artificially formed flints as they fell from the shovel, notwithstanding that all of them had passed their lives in digging in a chalk district; but after having been properly instructed, they became as quick as the most experienced amongst us in detecting these flints.

When we find, by a paper lately read to this Society by Dr. Thurnam, that so acute an observer as Sir Richard Colt Hoare habitually disregarded flint implements of the rudest kind, and that many undoubted specimens of flint manufac-

^a The present communication was accompanied by an exhibition of a number of flint implements from the localities in question, several of the most characteristic specimens of which will be found engraved in Plate VIII.

ture were found by Dr. Thurnam in tumuli that had been previously opened by this distinguished antiquary, we must not attribute it to negligence on the part of our predecessors, or to any remarkable perspicacity of our own, that we should discover what they have omitted to notice, but rather attribute the progress of discovery in these matters to those pre-historic archaeologists who during the last ten years have done so much to enlighten us on the subject of the stone age of mankind, and who by their publications have enabled us to apply to the study of these antiquities the knowledge of the period in which we live.

The pits to which I first turned my attention are about fifty in number, and situated, as mentioned in my former communication, on the western slope of the hill, within the rampart; they are of all sizes, hardly any two being of exactly the same dimensions. The smallest are only distinguishable by an almost imperceptible depression on the surface: the largest, situated chiefly on the northern extremity of the cluster, average 70 feet in diameter by about 12 feet in depth: one only is of much larger dimensions. The depth is always proportioned to the diameter. The earth obtained from the pits had been thrown up by the constructors to the west, *i. e.* towards the slope, of course the most convenient side for the excavators. Thirty pits in all were opened during the two visits that I paid to the spot—the first in September, 1867, and the latter in January of the present year. The first two pits opened are shown in the section (Plate VII. fig. 16), in which may be seen their position in reference to the rampart beneath.

The first pit (No. 1, fig. 16) was selected on account of the numerous flakes lying on the surface upon its margin, and it produced some of the best specimens of chipped celts discovered during the excavations. It was 22 feet in diameter, and 6 feet in depth to the bottom; in this bottom a trench 3 feet deep was dug in red clay, the only clay found anywhere in the place. A few fragments of charcoal and some burnt flint occurred at a depth of 2 feet; and the chalk floor, upon which lay a part of the shed antler of a red deer, was reached at 3 feet, and showed a concave bottom. Several well-chipped celts and some ruder implements were found in the clay. Eleven fragments of rude, imperfectly baked pottery, none of them exceeding an inch in length, lay with the charcoal at 2 feet from the surface in this pit.

No. 2, below No. 1, was then opened by means of a cutting 5 feet wide, and produced the following remains:—two lower molars of a small horse at 1 ft. 6 in.; a tooth and part of the horn core of a goat at 2 ft.; part of the tusk of a boar and a metacarpus of *Bos longifrons*; several oyster and snail shells,

a number of rudely worked flints of large size, and a quantity of flakes, none of which however showed traces of secondary chipping. The chalk floor was attained at from two to three feet from the surface, and, like the last pit, was of concave form.

No. 3, to the north-east of No. 2, was opened in the centre. At 1 ft. 6 in. a layer of about 150 snail shells was found; they were collected in one spot as if deposited in a heap and compressed by the weight of the superincumbent soil. The natural chalk bottom was attained at 3 feet, and, like the former, it was basin-shaped. No worked flints, charcoal, or pottery were found here, and, being unproductive, the pit was abandoned.

No. 4, a section of which was taken east and west, was the nearest pit to the east of No. 2 and south of No. 3. Ten small fragments of pottery were found in this pit at 1 ft. 6 in. from the surface; charcoal at 3 ft.; at 4 ft. a layer of burnt flints 3 ft. 8 in. in diameter, covered by a layer of charcoal, showed evident signs of having been a fire-place; above the charcoal were discovered several bones of animals, including part of the *humerus* of a ruminant, probably a small species of *Bos*, the metatarsus of *Bos longifrons*, and a portion of the *scapula* of a goat. One well-chipped celt, another approaching in form to the drift-type, being thick and rough at one end and pointed at the other (see fig. 10, Plate VIII.), and three rough and apparently unfinished implements were taken from this pit. In this pit was also found an artificially formed disc of chalk $3\frac{1}{2}$ inches in diameter, and from an inch to an inch and a quarter thick, the use of which I am unable to conjecture.

Passing for the present over Nos. 5 and 6, which were in another part of the intrenchment, No. 7 was opened to the east of No. 1, and produced two small fragments of pottery at 1 foot from the surface, three lower molars of the *Bos longifrons* and a fragment of pottery at 2 feet, a few fragments of charcoal, and the original chalk bottom at 3 feet. From this pit I took a flint flake showing marks of secondary chipping on the edge, the first of this description as yet found; but no implements of the larger kind.

No. 8 produced no relics of any kind.

No. 9, bearing West 20° North of No. 2, at 23 paces from the centre, was commenced in September 1867, and continued in January 1868. In it were found two good specimens of the long thin celt, well chipped (see fig. 18), and two hammers or pounders (see fig. 16, Plate VIII.), used and worked flakes, and several other implements, which will be described in detail hereafter. The stratification of the

FLINT IMPLEMENTS FROM CISSBURY AND BRONZE KNIFE FROM HIGHDOWN, SUSSEX.

deposit consisted of one foot of mould at top, 2 feet of chalk rubble, and the original basin-shaped chalk floor at 3 feet. A piece of red deer's horn was found at 2 feet, but no other bones, charcoal, or pottery.

No. 10 bore S. 20° W. of No. 9, and proved very productive. It was entirely dug out. It consisted, first, of about 6 or 8 inches of large flint nodules, collected on the surface in the centre of the pit. It was amongst these natural flint nodules that the greater part of the worked flints occurred in *all* the pits, showing that they must probably have been deposited originally on the margins of the pits with the other large stones, and have been washed or have fallen during subsequent ages into the bottoms. Beneath the layer of large flints there was about a foot of mould throughout the interior basin of the pit, mixed with natural and worked flints, and beneath this again a layer of chalk rubble full of small flakes, but containing few large stones and implements. This layer extended to the margins of the pits. The depth of the chalk floor beneath the present bottom averaged 3 feet in the larger pits, and was invariably basin-shaped, the superficial deposits above it tapering out on all sides towards the margins of the pits. The ridges between the pits were entirely denuded of soil, though often covered with small flakes. As a general rule the flakes were found near the sides of the interior hollow, the larger stones having fallen to the bottom.

It proved throughout the excavations that the worked flints almost invariably accompanied the unworked blocks, so that when searching for implements we ultimately became guided by this circumstance, and found it useless to dig in those places where no large flints met the pick within a short distance of the surface. This remark however applies chiefly to the flint implements of the larger and ruder kind, as some of the best specimens in my collection were discovered in pit No. 1 in a deposit of red clay, and in some of the shallower pits afterwards excavated. The evidence on this point is barely sufficient to build upon, but so far as it goes it might perhaps be taken to show that the more perfect specimens were taken away from the place of manufacture, and the *débris* only, consisting of unfinished tools or finished implements of the rougher kind, left on the place of fabrication. Upon this subject however I had rather not venture a decided opinion, as much might be said in favour of an opposite conclusion.

Besides the flints, several oyster-shells and fragments of charcoal were found in this pit at one foot in the mould, also the metatarsal bone of a *Bos longifrons* split lengthwise, the two halves lying together, fitting each other,—rather a singular circumstance, as the fracture is evidently of ancient date, and if split for the purpose of extracting the marrow, the motive usually ascribed to the

splitting of bones in this fashion, the halves would probably have lain apart from each other.

No. 11 was some distance to the west of No. 10, and very much resembled it in the character of its deposits, consisting of large flint stones and mould at the top containing several of the larger class of implements, beneath which was about three feet of blue and white marl, including a large number of unworked flakes, but none of the larger implements. Some of these flakes retained to a great extent their original dark blue colour, while the implements in the mould above them had been completely whitened by the decomposition of their surface. Fragments of charcoal were found at 4 feet, a piece of red deer's antler at the same depth, and the chalk bottom at 5 feet 7 inches; the deposits in this case being of greater thickness than in any of the other pits.

No. 13 was one of the shallow pits, the bottom being only depressed 3 feet beneath the margin. It produced charcoal at 4 feet, and at the same depth a quantity of very small shells (*Cyclostoma elegans*), heaped together with pieces of burnt flint and burnt chalk. Several large flat flints of a kind that might very probably have been used to form a fire-place were found together at this depth, much burnt and accompanied with charcoal. Very few worked flints were discovered in this pit.

The remaining pits presented but few characteristic differences from those already described. A large number of worked implements, including some very perfectly chipped celts were found, with a fragment of stag's horn, in No. 23, one of the shallow pits. I also excavated a piece of ground in a hollow, between two of the mounds formed by the materials from the pits, into which a quantity of flint stones appeared to have been rolled or washed down by the rain, but which did not appear to have ever been a pit. Amongst these were two implements of the celt type, thereby completing the evidence that these collections of implements with other stones had been formed in the course of ages succeeding the first formation of the hollows, by the accumulation of loose materials that had originally been strewed upon the surface of the basins in which they are found.

This completes the account of the excavations of the pits in the group represented on the plan, on the western slope of the hill within the Cissbury intrenchment.

It now remains to describe the excavations conducted in other parts of this work.

In rear of the southern entrance, and as if intended to command that opening, at 42 paces from it, is an oblong inclosure (E, Plate VI., fig. 14) 17 paces by 9, consisting of a small parapet not more than 2 feet high at present, with a small

ditch on the outside, and at the south-east corner a pit somewhat similar to those already described, but smaller. In this, a trench 10 feet square was dug to a depth of 7 feet without reaching the bottom. It produced remains of the horse, kid, and *Bos longifrons* in greater abundance than in any of the preceding pits. These animal remains were associated with oyster, cockle, and mussel shells, fragments of baked pottery, some of which were rudely scored in a cross pattern and marked with the impress of the fingers, and one piece of red tile scored in parallel zigzag lines, of undoubted Roman manufacture. This tile affords the first and solitary example of Roman handiwork found during the excavations in Cissbury. Not a trace of flint manufacture or flakes of any description was noticed in this pit, and the remains may therefore be regarded as affording some confirmation of a conjecture which from the outline and situation of this structure had already been formed respecting it, viz: that it is of later formation than the intrenchment and the other pits to the west end, and may very possibly belong to the Roman period.

The next cutting took place in a nearly similar work, marked F on the plan, placed, apparently with the same object, in rear of the northern entrance. Many small fragments of pottery were found on the surface in this place, which, although in such minute fragments as to make them difficult to identify, yet from their texture appeared to be Roman, and one piece was perforated with a number of small holes, as if forming part of a colander. No pottery however was found in the cutting, nor any trace of flints; and, as the chalk was reached immediately beneath the surface, the exploration of this place was abandoned, and the workmen sent to dig in the adjoining work, marked G.

This, like the two last-mentioned works, was of oblong form, consisting of a small parapet with a ditch on the outside, the sides being 44 and 23 paces respectively. The whole of the northern ditch of this work was cleared out, and found to be a foot and a half in depth; it produced several flint implements of the celt type. A slight depression in the interior of this inclosure was also excavated, and led to the discovery of one chipped implement and a fragment of a polished celt (fig. 15, Plate VIII.) at one foot from the surface; this being the only vestige of a *polished* tool discovered in Cissbury. No pottery was found in this place, which circumstance, coupled with the occurrence of flint implements, and its close proximity to the before-mentioned work F of the same form in which pottery was strewed upon the surface and no flints were found, leads to the supposition that the two works may not belong to the same period; and the question

at the same time arises whether the polished implement found in this place does not belong to a later day than those discovered in the pits.

The fabrication of polished implements has been held by Sir John Lubbock to distinguish what he terms the "Neolithic" from the Palæolithic age. But, as flint implements must have been chipped into form before they were polished, are we to consider the discovery of a single fragment of polished work as a sufficient indication that the whole belonged to the Neolithic age? or are we to regard this polished specimen, found one foot from the surface in a separate part of the fort and in a work of different form, as a proof that it belonged to a later date than those occurring in the pits? Are we to consider the whole as representing a transition period, passing from the Palæolithic to the Neolithic age? or, is the distinction of *chipped* and *polished* implements inapplicable as a test of age to the particular locality and district that we are considering?

Before approaching this question it will be necessary to describe the implements, to classify them according to the several uses for which they appear to have been formed, and thus if possible to determine whether they belong to an early or a late type.

In the five-and-twenty pits, the excavation of which I personally superintended, I procured, exclusive of flakes, 350 flints, the majority of a very rough description, but all showing unmistakeable signs of human workmanship. Including those which fell into other hands, I imagine that the pits must have produced in all from 550 to 600 worked flints of one sort or another, all *chipped* and without the slightest trace of *grinding* or *polish*, nor was any vestige of metal discovered in the place.^a

The flints may be first arranged under two principal heads, viz., flake forms and core forms; the first embracing those tools which were formed out of the flake chipped off from the core, and the second those fashioned out of the core itself.

Amongst the flake forms now upon the table we may distinguish—

1st. Outside flakes. The first flakes detached from the flint block.

^a One fragment of iron, 7 inches in length, $1\frac{1}{2}$ in width, and $\frac{1}{6}$ th of an inch thick, was found close to the surface of one of the pits. On submitting it to Dr. Percy for examination, he pronounced it to be charcoal iron, and, therefore, probably of ancient origin. Its position, however, within a foot of the surface, implies that it may probably have dropped into the pit in comparatively recent times, and may therefore be classed with the surface pottery, some of which was undoubtedly Roman. Considering the extent of the excavations, it is a matter of surprise that so little of recent origin should have turned up in the soil.

2ndly. Flakes with one mid-rib at the back. Some few of these resemble the flakes often found in Ireland and elsewhere, especially at Toome on Lough Neagh, discovered by Mr. John Evans, and described by him in the forty-first volume of the *Archæologia*, and which are there supposed to have been used as lance-heads; but the forms which might have served for such a purpose are extremely rare in Cissbury.

3rdly. Flakes with two or more ribs at the back. The process of forming all these three descriptions of flakes has been frequently described, and they are universal in all localities where traces of flint manufacture have been discovered.

4thly. Flakes *used*, but not *worked*. Marks of use as tools are shown by the worn and jagged edges. The simple unworked flake was the sharpest and one of the most effective instruments for many purposes that the savage possessed. In working bone they were used with a sawing or scraping motion.

5thly. Worked flints. These include several varieties. 1. Flakes chipped on one edge only, and apparently intended to be used as knives (fig. 3, Plate VIII.) 2. Flakes chipped to a point at one end to be used as picks or piercers of some kind, and the other end left rough to be held in the hand or inserted in a handle. Of these I obtained nine specimens, some of which were worked only on the outer or ribbed face, and others on both faces (fig. 8, Plate VIII.) 3. Scrapers, chipped to a bevel at the end opposite the bulb, and on the outer face only, the inner or flat surface being left untouched (fig. 2, Plate VIII.) These were extremely rare. I obtained only two decided scrapers, one from the surface: and I think that not more than four were found in all. I have however picked up such scrapers elsewhere on the surface of the Sussex downs; and Mr. Evans has been kind enough to give me several which he found upon the surface near Seaford. The small number discovered in the Cissbury pits is remarkable, as their use in the stone age appears to have been almost universal. Some few have been found in the drift, and they are common in the French caves of the reindeer period. They are the most abundant implements found on the Yorkshire wolds; and also occur, though less frequently, in Ireland, Denmark, Sweden, and Switzerland. They are still in use by the Esquimaux, who mount them in bone handles for dressing skins. 4. Flakes chipped to an edge at one end, slightly rounded, such as might very possibly have been used for skinning animals. Of these I obtained five specimens. They differ from the scrapers only in being bevelled to a more acute angle at the edge; some are slightly worked on the flat side as well. Nearly similar implements, but larger, are included amongst the core forms (see figs. 12

and 13, Plate VIII.)^a 5. Implements worked like the last at *both* ends, untouched, or nearly so, on the flat face, and bevelled all round on the other (fig. 6, Plate VIII.) I have two of this description of implement.

6thly. Drills, chipped to a long taper point at one end, and left flat at the other, so as to be held in the hand. Two drills, one a very perfect specimen, were found in the course of the diggings; but I was not fortunate enough to obtain a specimen of this class. Drills of the same kind are found upon the Yorkshire wolds.

7thly. Flakes worked on both faces. Of these the specimen given in fig. 19, Plate VIII. might possibly have been used as a spear-head, the upper part being adapted to fit into a handle. Fig. 20, Plate VIII., closely resembles some of the knives that are found in Denmark. The lower end of this implement is left rough, as if for insertion into a handle; the surface of one of the sides is much glazed.

Amongst the core forms I would draw particular attention—

1st. to a class of implement of very early type which has not, I believe, hitherto been noticed in any of the flint implements later than the caves of the reindeer period: they are chipped to an edge on one side only, the other being either left with the natural surface of the flint, or intentionally rounded to be held in the hand, (fig. 1, Plate VIII.) They so exactly resemble some of the flints found in the Le Moustier cave, in France, examples of which are in the Christy Collection, that I cannot do better than quote the description of these implements given in the *Reliquiæ Aquitanicæ* and apply it to those found in Cissbury; it is as follows:—"The specimens" (given in pl. v. of the *Reliquiæ Aquitanicæ*) "belong to a type of implements especially adapted to be held in the hand by the thick and naturally rounded margin, whilst the opposite margin, reduced to a sharp curved edge by careful chipping, can be used as a hatchet or chopper, and seem well fitted for smashing the marrow bones which are found amongst the hearth stuff in great profusion." Several of the edges of those found in Cissbury, like those of Le Moustier, were jagged and broken, (see fig. 7, which is a similar kind of implement,) showing that they had actually been in use for this or similar purposes, and that they must therefore be regarded as finished tools, and not as celts abandoned in the process of formation. One or two specimens more carefully formed than the others serve to show clearly the intention of the fabricators; but I obtained thirty-nine others, all of which fit the right hand precisely in the same way, and of these, eleven show by their blunted edges that

^a The other sides of the implements represented in figs. 12 and 13 are flat.

they have been in use, whilst the remainder found in the same deposits, and equally liable to abrasion, if the abrasion resulted from their having been knocked about in the pits, showed edges as clean as on the day they were fabricated.

2ndly. The next type resembles the former in having a natural surface left for the hand at one end, the other being chipped to a point or an edge. One very perfect specimen of this class is on the table (fig. 9, Plate VIII.): the edge has been formed by broad, shallow facets, taken off with great skill on either side, so as to produce an even-pointed blade five inches in length; and at one place, at the point, where the blade thus formed diverged to one side, following the conchoidal fracture of one of the facets, it has been brought back nearly into the right line by four minute and careful chips. Nothing can be more obvious than the intention of the fabricator in the construction of this implement, which, from the outline of the original flint, could never have been intended to have been formed into a celt, and must therefore be looked upon as a finished tool. From the fineness of the edge it must have been intended for work in some softer material than flint or bone.

3rdly. The next form to be discussed consists of implements chipped on all sides, broad and *thick* at one end, and chipped to a point or a narrow-rounded edge at the other (figs. 10 and 11, Plate VIII.). These closely resemble, if indeed they are not fac-similes of, some of the implements found in the drift. Some two or three of the specimens found here might pass in any collection of drift implements as belonging to that age. They pass by imperceptible gradations into—

4thly. The celt type, common in the surface period of this country, and in all parts of the world (figs. 17 and 18, Plate VIII.), broad and sharp at one end, and pointed at the other. Some of these were no doubt fabricated for use as axes, but others of an extremely pointed and narrow form (as, for example, fig. 18, Plate VIII.) may, I think, have been intended to be used with the pointed end, as spear-heads. Nothing else was found in Cissbury which could, with any degree of likelihood, be attributed to this purpose, and it seems very improbable that in an intrenchment of this kind, constructed obviously for warlike purposes, the spear-head form should have been totally unknown. Amongst the celt forms, one with a shoulder or knob upon one face near the middle (fig. 17, Plate VIII.) appears to be peculiar to Cissbury. Such a shoulder may have been intended as a stop to prevent the axe-head from splitting the handle. Another having a small shoulder all round was discovered during the excavations. It may, perhaps, be doubted whether these knobs do not represent merely the *residuum* of the flint core that had not yet been flaked off in the manufacture, but, upon the whole, I am inclined

to think they were intentional. A large proportion of the implements of the celt type are undoubtedly in an unfinished condition. Fig. 21, Plate VIII., is a variety of the celt type of unusual form, having nearly parallel sides and rounded ends.

5thly. A great number of the finished celts appear to have been broken in use, probably at the place where they fitted into the handle (fig. 14, Plate VIII.); one of these I found embedded in the roadway at one of the entrances to the fort. These may be distinguished by the fracture from wedges of nearly the same shape that appear to have been intentionally constructed in that form, and may have been used either as wedges, chisels, or for the purpose of skinning animals. Some of these I think were intended to be held in the hand, a rough end adapted to that purpose having been left on the opposite side (figs. 12 and 13, Plate VIII.).

Both the broken celts and the formed wedges occur in Denmark. They are also found in great numbers at Spienne near Mons; the general character of the flints from which place appears greatly to resemble the Cissbury type, as will appear from my specimens from Spienne. They differ however in one important particular. In many of the Spienne specimens, like those from Pressigny, in France, the cores appear to have received a preliminary dressing, for the purpose of obtaining long flakes, such as might be used as daggers or knives, but no such dressed cores or long flakes occur in Cissbury, where the cores appear all to have been themselves worked into the form of tools.

6thly. We now come to pounders (fig. 16, Plate VIII.); intended to be held in the hand on one side, and greatly bruised by use on the other. These may very probably have been used in the manufacture of the flints. Some are long, others nearly round. They pass gradually into

7thly. Flint balls (fig. 5, Plate VIII.), chipped all round, the object of which is obscure. It has been suggested they may have been used as sling or throw stones. Similar forms to these are found in Yorkshire, Ireland, Denmark, and elsewhere; specimens from which places are upon the table.*

All the foregoing types are represented in perfection by some two or three specimens of each, which, by the care bestowed on them, serve to show the intention of their constructors; but between these there are, as there always will be in any large collection of early implements, innumerable intermediate links, uniting the whole together, and making it impossible to draw any broad line of demarcation between them.

It will be seen that Cissbury has produced specimens of nearly every type

* All the flint implements figured in Plate VIII., with the exception of fig. 20, have been presented to the Christy Collection.

known to have been found amongst flint implements from the drift, and cave, up to the surface period.

I am aware that this assertion will meet with objectors: first, amongst some of those who, not having made flint implements their study, are not prepared to see, in the great majority of the rough implements now exhibited, any particular indications of purpose or design. And, secondly, it may perhaps be received with some doubt by others, deeply studied in such matters, who, without having sufficiently carefully examined the characteristic peculiarities of this particular find, have already decided in their own minds, from broad induction, that implements of the very early types here described are not to be found amongst the relics of the comparatively recent period to which Cissbury must be ascribed. But we must believe the evidence of our senses before we subscribe to theories, however plausible or however generally true.

That a large proportion of the flint forms found in this place consisted of refuse cores, half formed and abandoned in the process of manufacture, such as we might naturally expect to find in a great flint arsenal, which this appears to have been, is readily admitted. But this need not prevent us from distinguishing amongst them the several distinct types towards which the fabricators appear to have been working at the time these implements were abandoned, on account perhaps of some flaw in the flint, or a false stroke in the construction. The chipped *celt* (figs. 17 and 18, Plate VII.) we must at least allow to be, in so far as form is concerned, a finished tool. Numbers of these were found in the pits, mixed with implements of the other forms above described, and no one who examines the surfaces of some of them with an experienced eye can doubt for a moment that the care bestowed on them denotes as great a degree of perfection in the art of flint chipping as has ever been attained, at least in this country. Are we then to believe that the savages of this place had only one idea of a tool, and that all the rougher forms are celts, more or less brought to completion? and if not, why should we reject, as finished tools, those forms which show clear evidence of design, which closely resemble forms that in other places are admitted to be tools, and which, by the fracture of their edges, show that they have been in use after fabrication?

Nor can I admit that it is at all unlikely or contrary to the experience derived from a study of the habits of savages in other parts of the world, that in a large manufactory such as this, we should find amongst the implements in use many of those types which during prior ages have been employed by the races from whom the fabricators descended.

The subject of continuity of form in the implements of aborigines of different

countries is one to which I have devoted some attention during the last fifteen years, and a collection which I have formed of objects obtained from various parts of the world has been arranged expressly with the object of illustrating the universality of this principle.

It is a maxim capable of wide demonstration that what we recognise under the term *invention* is absolutely unknown to savages in a very early condition of art. The process of analogy which in the complex civilization of modern times enables us to apply to one branch of industry the discoveries which are made in another, and which contributes so materially to extend the steps of progress as almost to obliterate all trace of the continuity that would otherwise be seen, is totally beyond the reach of savages, who creep on from form to form by slow and almost imperceptible stages, extending over vast periods of time, guided only by the ever-varying forms of the materials of wood, stone, bone, or obsidian in which they work.

Further, it may be observed that, as in the palæontological record, so far as it has yet been determined, many ancient forms are retained during subsequent ages, and still survive amongst others that have sprung from them, so by a precisely similar process of *natural selection*, if we may apply that term, and I think we may, to the earlier stages of human art, many ancient types of tools and forms of ornament are in like manner retained by savages from habit, prejudice, and a variety of causes, long after they have been superseded by others of more modern origin; so that, at any given period of the history of an aboriginal race, the varieties of any particular class of implement actually in use, if fully collected and arranged, will within certain limits exhibit all the links of connection between present and past forms. Notwithstanding the great difficulty of collecting the necessary materials for displaying a connected series of such forms, a difficulty fully equal to that which the geologist experiences in arranging his palæontological sequence, this fundamental maxim is nevertheless capable of clear demonstration in any well-assorted collection of early and savage implements, and embodies, I believe, the pith and marrow of pretty nearly all that can be extracted from the study of pre-historic and comparative archaeology. It is more clearly observable in those nations which are lowest in the scale of art; it exists to a greater degree amongst the Australian than amongst the African and Polynesian races, and with these to a greater extent than amongst the Malays, who in their turn show a connection of form in the construction of their implements to a far greater degree than the more civilized nations of Europe and Asia; and yet I do not forget that long before I had begun to study this subject in connection with early races, my attention was drawn to the principle of con-

tinuity, whilst serving on the sub-committee of small arms in 1851, by observing the very slow gradations of progress that were taking place at that time in the military weapons of our own country.

So that I was not at all surprised to find amongst so large a collection of implements of the same period discovered in these pits, every link of connection between earlier and late types. It was precisely what I expected, and what I believe will always be found when a sufficient number of objects of the same age are brought together. And the reason of its not having been sufficiently insisted upon hitherto arises, I believe, from such collections having been so frequently dispersed, instead of being arranged together in a good typical series, and also from the fact that travellers and collectors not properly imbued with this principle have usually brought home, preserved for their museums, those specimens which fall in with a classification predetermined in their own minds, and which serve rather to exhibit well-marked *differences* of form, than those which by their *resemblance* contribute to show the almost imperceptible mutations which connect one form with another.

This, however, is not truly scientific, and I venture to think—at the same time being well aware of the difficulties that stand in the way of such a proposal—that no real progress will be made in pre-historic researches until in the arrangement of our museums, the analytical method has been superseded by one more synthetical, classification by continuity, and until the desire on the part of curators to obtain unique and remarkable specimens, and to arrange them in cases in such a manner as to produce symmetry and please the eye, has been replaced by an arrangement calculated to exhibit at a glance, side by side, in close proximity, all those varieties of the same class of implements, by means of which we shall be enabled to trace out the slow and uninterrupted flow of progress which has taken place in all the early stages of art.

What has been said hitherto relates chiefly to the position of these relics in the sequence of art. It remains to consider their period in order of time. The animal remains which Mr. William Davies of the British Museum has been so kind as to identify for me, consist of: *Cervus Elaphus*, *Bos longifrons*, *Capra hircus*, *Equus* (*sp.*?) and *Sus scrofa*; no trace of fallow deer. The shells are all of existing species;^a this would not carry the date back to a greater antiquity than the surface period.

Nothing which by any stretch of imagination could be looked upon as an arrow-

^a Mr. Brice Wright has been kind enough to name the shells found in Cissbury; they consist of the following species, viz.: *Littorina littorea*; *Cyclostoma elegans*; *Tapes decussata*, Linn.; *Helix nemoralis*, Linn.

head, such as are found in Yorkshire, Ireland, and Denmark, and which are sometimes associated with bronze weapons, was found in Cissbury. There were very few knives or scrapers; most of the implements were of large size. Although in other parts of Sussex polished stone implements have occasionally been discovered, the majority appear to have been chipped only. The flint implements found lately at Ore, near Hastings, by Dr. J. W. Smart, and figured in the nineteenth volume of the Sussex Archæological Collections, are all chipped, and very much resemble those found in Cissbury. The small collection in the Lewes Museum are mostly chipped celts. We may therefore suppose, either that the inhabitants of this district were much behind-hand in the construction of their implements, or that these implements belonged to a very early period: certainly to the true stone age. If we are to assume that Cissbury was the place in which the implements were worked from the rough flint up to the completion of the chipping progress, and that many of them were afterwards taken away to be polished elsewhere, the division of labour in this respect must certainly have been very complete, as no trace of sandstone, or of any material adapted to grinding purposes, was found in the place.

This being the condition of the works of industry discovered in Cissbury, the question arises, may they have belonged to the soil previous to the existence of the pits, have been turned up in the process of forming them, and subsequently washed back into the bottoms in after years? Such an hypothesis must be rejected, as there is evident trace of the manufacture of the flints on the tops of the mounds formed out of the material thrown up from the pits. In one place a collection of large flakes might be seen, where evidently the first rough outline of a flint implement had been formed. In another place, a quantity of small flakes showed where a celt had been brought to perfection by minute and careful chipping. All this took place on the tops of the mounds, and must therefore have been subsequent to the construction of the pits. Had the flints belonged to the soil, they would have been thrown up in the body of the mounds; but having dug some feet into one of them, I found no trace of flakes, although they were found on the surface of the same mound. They could not therefore have belonged to the soil. Having decided this question, the next point to consider is the object of the pits. That they were not reservoirs, is evident from the fact that no puddling or lining of any kind was found, without which the chalk would not hold water. The basin-shaped bottoms render it very unlikely that, as suggested by Mr. Irving, they were pounds for cattle. The discovery of charcoal in many of the pits, with animal bones and shells, the remains of two fire-places, the number of celts broken in use, and the number of flakes that appear to have been

in use, but which could not have been employed in the flint manufacture, makes it appear extremely probable that at some time or other the pits were used as habitations. But the remains of kitchen-middens are not in sufficient quantity to denote any very long continued occupation.

Besides which, had they been originally constructed as huts, what would have been the necessity for digging the larger ones so deep in the ground; shallow pits of the same diameter would have answered the purpose of habitation equally well. For what use then were they formed? I am inclined to think for the purpose of obtaining flints.

It is said that the flint material is more easily worked when it is first removed from the chalk, and before it becomes hardened by exposure. It would therefore be necessary they should quarry their flints somewhere, and what better position could be selected for such a purpose than on the slope of the hill in the interior of the intrenchment, which exposed position would be less well adapted for habitation than the flat ground above. This would account for the great depth to which some of the pits have been sunk, and I am much confirmed in this opinion by finding that Mr. Evans, from a description given him of the place, had arrived at precisely the same conclusion that I had formed on the spot. That they were afterwards used as habitations, or that the smaller pits were the habitations of flint workers, while they obtained their flints from the larger pits, appears to me to be extremely probable, both on account of the signs of occupation above-mentioned, and also from the evidence of their having employed such pits as habitations in other parts of this district, and indeed in other parts of this same work.

Finally we have to consider the still more interesting question whether the intrenchment was coeval or subsequent to the pits. As mentioned in my previous paper, the pits conform to the line of rampart winding round the hill, and are for the most part confined to the interior; but in one place, on the south side, a few pits of much smaller size are found beyond the ditch. It would therefore appear just possible, though not probable, that the pits might have existed on the hill before the intrenchment, and the rampart have been thrown round them in after years.

Had such been the case, we should probably find no flint implements in the *débris* of the ditch, as the majority of the flints would have been buried in the soil before the rampart was formed, and none would be turned up in the formation of it, except such as might chance to lay upon the place where the ditch was dug. But if the ditch existed before the flint work was carried on, specimens of this manufacture, especially such as may have been used in the defence of the place, would in all probability be found, upon excavation, on the original floor of the

ditch, and they would be confined to the floor of the ditch, because, as the rampart was not the place of manufacture, the surface in that part would not be strewn with flints to the same extent as the pits, and the superficial deposit which filled up the ditch in after years would not therefore contain worked flints to the same extent as that which filled up the pits. We should find in the ditch nothing but what was in use at the time, and that, upon the steep slope of the rampart, would fall down at once into the bottom. Whoever the constructors of the rampart may have been, we should expect to find some trace of their implements on the floor of the ditch.

I therefore caused a trench to be dug 33 feet long and four in width, in that part of the bottom of the ditch which was nearest to the pits. The original bottom was found at 3 feet from the surface; it was 7 feet wide, and had a sloping escarp and counterscarp cut in the solid chalk at a slope of about 45°, as represented in the section (fig. 16, Plate VII.) No trace of pottery or metal, or anything but a few bones, and about five or six flint flakes, were found in the superficial deposit; but on reaching the floor, a few large flint blocks, and amongst these, lying on the chalk bottom, were twelve worked flints, mostly of rough form, but including one of the best celts found in Cissbury. These then must have been the work of the original constructors, and, although it would no doubt have been desirable, had there been time, that a more extended exploration of the ditch should have been made before coming to a conclusion, yet the number of worked flints in so small a distance as 30 feet, and in the position described, appears to me to afford strong presumptive evidence that the intrenchment belongs to the stone age, or at any rate to the age of the flint manufacture.

As regards Roman occupation, a solitary piece of tile and a small fragment of charcoal iron, found close to the surface in one of the pits, are the only possible evidence of it that fell into my hands. Roman burials have however been discovered near the terraces on the south side of the hill, about half-a-mile from the intrenchment, and several good urns from this place and a coin of Antoninus Pius are in Captain Wisden's possession. It therefore appears probable the Romans may have occupied the place, though perhaps in very small force.

A very few words will be sufficient to dispose of the exploration at Highdown. During this excavation I was so fortunate to meet Mr. Ouvry our Treasurer, who visited the digging several times, and was kind enough to assist me by his advice and experience. Permission having been very liberally granted by Mr. Edwin Henty, the owner of the property, I first opened the pit marked No. 1 (Plate VI.

fig. 17), one of those numbered but not explored by Mr. Irving. This pit and No. 5 produced very much the same class of remains which he has described, and appeared to contain a mixture of the productions of all ages.

A slight depression at the foot of the interior slope of the southern rampart was then excavated, and resulted in the discovery of a work that proved of much greater interest. It consisted of an oblong pit, at the foot, and in line with the interior slope, 7 feet 6 inches in length by 3 feet 4 inches broad at the bottom, and 4 feet deep, cut in the solid chalk, with a perfectly smooth floor, and having steps down to it cut in the chalk on all sides, viz., one step on the east and west sides, and two on the north and south. The pit was filled with about one foot of mould at the top and the remainder with chalk rubble, amongst which were bones of all the animals found in Cissbury, and in addition those of the dog—*Canis familiaris*. Quantities of small fragments of British pottery of a coarse, badly-baked quality, but of a superior texture to that of Cissbury, with grains of white quartz in its composition, were also found in the pit, and one or two specimens of a finer texture scored with an angular pattern and lines of punctured dots, at two feet, with several iron nails, probably Roman or Anglo-Saxon; even a few fragments of yellow glazed pottery occurred near the surface.

Towards the south-east corner of the pit, in an upright position, with the point 2 feet 6 inches from the surface, the bronze socket knife or dagger (fig. 22, Plate VIII.) was discovered; and near it a piece of a bone pin. Near the dagger, and apparently resting on one of the steps at the south-east corner of the pit, were several large fragments of an urn, composed of coarse roughly-baked pottery, with grains of quartz in its composition. Some of the pieces were afterwards cemented together, and found to belong to the lower part of an urn, the bottom of which was $4\frac{1}{2}$ inches in diameter; the sides were $\frac{1}{3}$ inch thick; the urn increased in size towards the upper part; no trace of ornamentation was observed on any of the fragments; nor were there any vestiges of burnt bones in connection with the urn. Considering however the vicinity of the dagger and the point of a bone pin, there appears to be grounds for believing that this may have been a funereal deposit. At the north-west corner of the pit, a human skeleton lay extended in a north-west and south-easterly direction, the head being to the north-west; it was extended upon the back, with the head slightly raised and turned to the left, as if resting upon a pillow. The skull is of oval form, probably that of a female: the top of it was 1 foot 7 inches from the surface; the teeth are very much ground down; the hands were crossed upon the pelvis; the thigh bone was 1 foot 6 inches in length; the whole skeleton, from the crown of the head to the

end of the tibia, was 4 feet 11 inches in length. As the grave in which the skeleton lay cut into the sides of the pit, and the skeleton was not extended in a line with the pit, but across one corner of it, I think it quite *possible* it may have been a subsequent interment, and may have had no connection with the pit or the bronze implement. No relics of any kind were found on the body. The skull fell to pieces soon after removal, but the greater part of it has been restored. Another human jaw with several human bones was found near the feet of the former, but in a state of great decay.

Bronze knives resembling the one discovered in Highdown have been found in several places in this country, and in Ireland; but chiefly in Ireland, and they are not common even in that country. One with a short wooden handle, showing it to have been a knife or dagger, and not a spear-head, is preserved in the Museum of the Royal Irish Academy, and is represented in the thirty-sixth volume of the *Archæologia*, p. 330. Several others are figured in the *Illustrated Catalogue of the Royal Irish Academy—Bronze*, p. 465. A portion of one from my own collection obtained in Ireland is exhibited; it differs from the Cissbury specimen in having only one rivet hole instead of two. Another was found in Heatheryburn Cave, county Durham, in December, 1861, beneath a layer of stalagmite, together with part of the mould of a socket-celt and a bone pin or awl; it is figured in the *Proceedings of the Society of Antiquaries*, 2nd series, ii. 130. Another was found at Martlesham, near Woodbridge, Suffolk, with 17 socket-celts; it had a single rivet. Another knife of the same kind was found in Suffolk, with a spear-head, a hammer resembling a socket-celt, one or two socket-celts, a gouge, and an awl of bronze; they were discovered in a gravel pit at Thorndon, and are described in the *Journal of the Archæological Institute*, x. 3. Two others were found in the Thames, near Wallingford, and are mentioned in the *Proceedings of the Society of Antiquaries*, 1st Ser. iv. 303.

From the above it will be seen that knives of this description have usually been discovered in connection with *socketed* celts, and may therefore be attributed to a late period in the bronze age. No worked flints, and only two or three rather doubtful specimens of flint flakes, were found in Highdown, and this circumstance, coupled with the discovery of a bronze weapon, justifies us in ascribing a later date to Highdown than to the intrenchment at Cissbury. However probable therefore it may appear that these works were occupied simultaneously in after years, we cannot suppose them to have been of contemporaneous origin, or that they were erected with a view of establishing a connected system of defence.