THE FLINT-WORKS AT CISSBURY.

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Of the many interesting features of Sussex, the broad and bold South Downs, extending from Beachy Head to the Hampshire border, may be considered as among the most attractive to the tourist and student of nature; for here the enquiring may find, according to predilection, an endless source of interest. The stunted wild flowers, the wild and solitary hill birds, the lepidoptera and the mountain mollusks, the wandering bees and the agile grasshoppers, furnish an abundant mental harvest; some small items in their life history already gathered in, but by far the larger portion remaining undisclosed. Again, the solid hills themselves await only the mattock and shovel of the geologist to reveal their long-entombed relics of a world, more fluctuating, perhaps, although as largely populated with animal forms as the present earth.

The earthworks, also, crowning their summits have their page of instructive, but misty history, respecting the early and rude tribes whose remains testify that they occupied for purposes of war these places, now, happily for ourselves, the scenes of peaceful industry.

Of these magnificent hills, Cissbury more particularly claims the attention of the present paper, from the circumstance that much rude flint cutlery has been found within its ramparts, from which it might not have been inaptly designated, in the long past, as the siliceous Sheffield of Sussex. Subsequently it might have been occupied by the Romans as one of their coast defences. Eminences so framed for defensive purposes would naturally have been used by any people resisting invasion from the sea, as they would have been re-

tained and organised for purposes of subjugation by a successful invader. From the character of the earthworks, enclosures, the barrows, dykes, trackways, and other vestiges, there can be no doubt but that these hill fortresses have sheltered successive waves of population, from the early Celtic tribes to the later more civilized Gallic people, and onwards to the Roman and Saxon races. It is stated that the Gauls, of whom the Regni inhabited Sussex, established themselves in the South of England as an agricultural people about 300 years before the Christian era.[1] The Celtic Briton has left indelible traces of his presence in the names of most of the hills, villages, and rivers, of which Sedlescombe, Piecombe, Balmer, Falmer, the Ouse, and the Adur may be cited as having individually Celtic roots.[2] In the construction of most of the camps also, and in the tools and weapons of flint found so abundantly of late years on the Sussex downs. Of the Belgic settlers, who having obtained a footing in the southern counties, and established themselves along the coast, driving the original inhabitants before them, we have works of great strength in the Belgic boundary ditches, of which the Wansdyke, the fourth and last work of this kind, has a bank and ditch of no ordinary dimensions. It comes eastward into Hampshire from the Wiltshire downs, and has been considered as the boundary line between the deposed Celts and the Belgæ, who are thought not to have penetrated further in this direction.[3]

Although, perhaps, 3000 years have passed away since the Celtic people occupied these hills, the earthworks and trackways are as plainly traceable as at the time of their construction. The sharper angles have become weathered away by solution of the chalk ; and on the slopes of the Downs some of the works are fast disappearing under the encroachments of modern agriculture. I observed at Cissbury rounded flint pebbles, and small lumps of clay-iron-stone, indicating that the lower tertiaries once capped the hills ; but their denudation must have taken place long antecedent to the construction of the earthworks. The valleys beneath have, however,

[1] Prichard's Physical Hist. of Mankind vol. ii, pp. 106-109.

[2] Who the English Are. Brighton Herald, Sept., 1863.

[3] The Belgic Ditches, by Dr. Guest. Journal of the Archæological Inst., vol. viii., pp. 143-157.

since undergone very important changes. In travelling from Chichester to Brighton, the chalk hills bounding the aspect inland, and rising gradually northward from the flats, have the appearance of an ancient coast-line, and such, at no very distant period, they undoubtedly were; and the valleys through which the rivers now wind their way southwards from the Weald valley were arms of the sea, inland lakes,[4] but now silted up, occasioning the destruction of the ports that formerly occupied the mouths of the rivers during the historic period. In this way Lewes has become isolated from the sea by the silting up of the Ouse; Dr. Mantell having furnished evidence of the succession of stratifications from the marine up to the later freshwater in the valley levels.[5] Seaford, in like manner, has lost its harbour; the Adur and the Arun, likewise, once formed marine estuaries, the sea-shells found in the gravel of the former, and the discovery of British canoes,[6] constructed out of solid oak trees, in the banks of the latter, furnishing evidence that the estuaries must have had a much wider range than the present rivers. It has been suggested that lake dwellings might have occupied the marshes, the ground on which Piddinghoe church stands having much the appearance of a Crannogue.[7] And even as late as the Roman period, from the level at which coins and other Roman reliquiæ have been discovered, and from the scantiness of the superimposed deposits, the valleys must have been marshy, and not wholly reclaimed from the sea.

A great circle of camps guarded the Portus Adurni, or Port to the Adur, the series probably consisting of the Dyke Camp, the Camps at Wolsonbury, Ditchling Beacon, the Camp between Brighton and Lewes above Falmer, the Camp on the Brighton Race Course, and Hollingbury. The Port was one of the fortified harbours, by means of which the Romans secured their communications with the Continent. The river that used to flow by Aldrington is still called the Adur; *J dwr*, the water or river; but the same cause that destroyed the old town also changed the course of the river,

[4] Rivers of Sussex, by Mr. M. A. Lower. Sussex Archæolog. Collections, vol. xv., pp. 148-164.

[5] Wonders of Geology. Dr. Mantell, p. 64.

[6] Murray's Handbook of Kent and Sussex, p. 393.

[7] Hill Forts of Sussex, by Col. A. H. L. Fox. Archæologia, vol. xlii., p. 29.

which now flows into the sea at Kingston. The fate that has befallen Seaford is nearly an exact reproduction of what befel the Portus Adurni. The cliffs fell away to the eastward, and, as they did so, the land and shingle to the west was washed away, until at last, the sea being separated from the course of the river by a very narrow space, the first great storm threw the shingle into the river and stopped it up, thereby forcing the river to find an outlet to the westward. The Ouse and the Adur have both receded nearly equal distances to the westward. The little village of Portslade, situated further inland, arose out of the ruins of the Portus Adurni. From the down, behind Portslade, however, when the tide is very low, and the sea is very calm, long black lines, like sunken rocks, may be seen close along the shore to the south. The lines have a very peculiar appearance, and look like the ground plan of a town. In the map the spot is marked "rocky;" but from the nature of the soil, it is strange there should be rocks there; and there are no other rocks anywhere near, in short, not nearer than Brighton.[8]

The Sussex downs constitute a range of hills extending 50 miles from east to west, with an average width of about five miles; and their greatest elevation is about 800 feet above sea level. The South downs form the south-east part of the chalk-hills, extending around the Wealden valley on its north, west, and south sides; the steep chalk escarpments overlooking the vale having greatly the appearance of ancient sea-cliffs; and although the once almost impermeable forest of Anderida, which formerly occupied the Weald, has now given place to villages and cornfields, the entire district northwards, as seen from the top of Chanctonbury, has still a forest-like appearance. Southward from Chanctonbury, the country consists of round-topped hills, combes, and valleys, the chalk surface sloping gradually towards the sea. At the period of the Celtic Britons the distribution of hills and valleys, in outline, was much the same as at the present time; but the greater portion of the lowlands, then, and for centuries after, existed in the shape of heath, forest, and morass.[9] Straggling patches of upland, near the hills, were probably

[8] Roman Camps and Roads. Brighton Herald, Sept., 1863.

[9] Hume's Hist. of England, chap. 1.

cultivated in later British times, but the rest consisted of interminable forests; the whole country was said to be one continuous "*horrida silvis;*" and in the woods roamed the Celtic ox and red deer, while the jungle sheltered the brown bear, wolf, and wild hog. The soil abounded in marshes, and stagnant water, which rendered the climate cold, rainy, and unhealthy;[10] and necessarily restricted the natives to the drier hills, where they obtained pasturage for their flocks, and shelter from their enemies within the hill fastnesses. Doubtless they penetrated the forests in search of food by hunting, but their homes were on the drier uplands, and their trackways were, in consequence, chiefly confined to the margins of the hills.

It has been considered that, at this remote period, these hills were divided into natural groups by an expanse of water and marshland,[11] the great impassable forest already mentioned blocking the passage northward; and that the earthworks on the hills were occupied by tribes who held communication with each other by the means of canoes; and, as in the case of all uncivilized nations, were more or less always in a state of hostility. According to Tacitus the Britons were not united under one head,[12] and, at the time of Cæsar, the Celts and Gauls were perpetually warring against each other, and acted in unison only when some foreign invader appeared on the spot. It was this want of union, chiefly, which brought the natives beneath the Roman yoke. Internal dissensions split them up into sections, so that the compact foreigners carried the country piecemeal. As it was, however, the Britons succeeded in withstanding the Roman generals 260 years, from the coming of Cæsar to the time of Severus.

From the extent of most of the fortifications it is likely that these predatory raids, although of frequent occurrence, were never of long duration, and that the attacking force was insufficient in numbers to completely beleaguer the enemy's earthworks, and thereby cut off all supplies of food and water from the neighbouring valleys; and, as regards water, no provision for it has, I believe, ever been observed in any earthwork considered as strictly British.

[10] Cæsar. Comment. de Bell. Gall., lib. v., c. 12.

[11] Hill Forts of Sussex, by Col. H. L. Fox. Archæologia. Feb. 6, 1868.

[12] Tacitus. Agric., c. 12.

It will not be necessary to furnish any detailed account of the Sussex earthworks, further than to observe on some of the peculiarities by which they are thought to have been connected with the Celtic period, and therefore associated with the implements of stone. Further, the ground has already been trodden by eminent men, who have described the various fortifications, the probable time of their construction, and the people by whom they were raised. Thus, the Rev. Vernon Harcourt,[13] and the late Editor of this Journal, the Rev. Ed. Turner,[14] in some very able papers, considered that some of these hill forts were of British origin, constructed for defensive purposes, and had been used as places of Druidical worship. Mr. J. V. Irving,[15] again, regards them as entirely military, and treats their modes of construction after the methods of castrametation laid down by Vegetius and other military authorities. Mr. Horsfield, further, has written on the military character of the works, and has assigned Hollingbury to the Roman period; while Mr. Irving[16] entertains a similar view respecting Cissbury. A more correct interpretation, however, regarding their origin and nature, may be attributed to Col. A. H. Lane Fox, who, in a series of elaborate and almost exhaustive papers, contested that they are mostly of British, and not Roman origin, constructed during the later stone period for defensive purposes; and that Cissbury and some others of these hills had been occupied for the purpose of manufacturing flint implements. The following is a general statement of the conclusions at which he has arrived:—

"The size and outlines of the intrenchments are regulated by the size and outlines 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 ramparts drawn along the brow, in the position best suited for defence, and with but little 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. 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

[13] Celtic Antiquities, near Chichester. Vol. i., Sussex Archæolog. Trans.

[14] Sussex Archæological Transactions, vol. iii.

[15] Journ. Brit. Archæolog. Assoc., vol. x.

[16] Journal British Archæolog. Assoc., vol. xiii.

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.[17] Accordingly, we find amongst those camps which are of undoubted Roman construction, many of which have been figured by General Roy, no instance of a neglect of these principles. 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 a stockade. The ditch, generally on the outside, was sometimes in the interior of the work. Outworks were thrown up upon commanding sites within 200 or 300 yards of the mainwork. 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. The inhabitants in the interior of these works frequently dwelt in pits, which was not the Roman practice. 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 it must be admitted that the Romans did not employ that material for the construction of their tools and weapons."

Further, the forts occupy the highest points of the hills, and the gateways open towards the ridges of the neighbouring Downs, evidently with the object of commanding the entire view of the country round, and every approach to the hills.

Regarding the different hills on which Celtic remains have been observed, Wolsonbury contains a large number of pits, evidently the remains of habitations, and flint flakes were of frequent occurrence here. Flint flakes, again, strew the turf on the Cliff Hills around Lewes; and pits are observable within Mount Caburn. The Castle, at Newhaven, contained wrought flints; and I picked up some flakes and a beautifully wrought scraper at the base of the hill fortress at Seaford, in 1870 (see Fig. 7). In a letter from Mr. J. Evans, F.R.S., dated Oct. 6th, 1866, in reply to an enquiry from me respecting some Hampshire implements, he writes:—

"I found a celt of the same form as yours, but only 5 inches long, last week on a spot from which a barrow had been removed, on the Downs west of Newhaven; also a slingstone, and a large number of flakes, cores, and one or two scrapers at the same time."

[17] Vegetius, lib. 1, c. xviii.

In a second letter, dated October 23rd, 1866, Mr. Evans states:—

"During the last three days, in walking over the South Downs, near Eastbourne, I have found innumerable flakes, several cores, and ten or twelve of the scrapers, some of them remarkably good specimens. Your celt, No. 6, is extremely like the one I found near Newhaven. No. 4 and 5 I could match exactly from the South Downs; and among the flakes I found in Sussex many have the edges or points worn away to some extent by use, as if they had been employed for scraping bone or hard wood."

The interior of Beltout was likewise strewed with flakes of flint, artificially produced, and a few flakes lay about the greensward on the Dyke Hill. According to Mr. Boyd Dawkins evidences of an extensive flint implement manufactory exist near Hollingbury, which would lead one to the conclusion that this earthwork is also of British construction.[18] Chanctonbury contained humanly wrought flints, some of them showing secondary chipping; and at Highdown, probably a later work, Col. Fox discovered a weapon of bronze, iron nails, some articles of bone, rude pottery, and human remains, perhaps the contents of a grave of the Saxon period. The Lewes Museum contains a few chipped celts, and Dr. J. W. Smart discovered some wrought flints, at Ore, near Hastings, which are all of the chipped kind, of which figures may be seen in the "Sussex Archæological Collections," vol. xix.

Among[19] the earlier notices of Cissbury, Camden, in his Britannia, describes it as—

"A military fort, compassed about with a bank rudely cast up, where the inhabitants believe that Cæsar intrenched and fortified his camp. But *Cissbury*, the name of the place, plainly shows that it was the work of *Cissa*, who was the second King of this Kingdom of the Saxon race; and who, with his Brother *Cimen*, and a considerable body of Saxons, landed on this coast at Cimen-shore, so called from the said Cimen, a place which now has its name, but that it was near *Wittering*, King Cedwalla's Charter of Donation made to the church of *Selsey* is a convincing proof."

Rapin likewise attributes Cissbury and Chichester to Cissa.[20] Mr. Cartwright[21] writes of it as a very ancient en-

[18] Archæologia, vol. xlii, foot note at p 40.
[19] Gibson's Edition, 1622, p. 204.
[20] Hist. of England, vol. i., p. 59.
[21] Parochial Topography of the Rape of Bramber.

campment on the Offington Estate, inclosing 60 acres; and that the deep indentations on the west side have the appearance of rude huts. These, with the presence of vessels of unbaked clay and burnt bones, give it the appearance of being British; but the further discovery of Roman coins, &c., renders it evident it was used by the Romans. Similar views are expressed by Mr. J. D. Parry.[22]

Mr. M. A. Lower again describes Cissbury 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-burgh, from Cissa, the son of Ella, afterwards King of Sussex, which name, in the course of time, became corrupted into Cissbury."[23]

A similar view regarding this fortress appears at page 335 of Murray's Handbook of Kent and Sussex.

The powerful fortifications at Cissbury appear to occupy a central position, and command the whole of the country between Chanctonbury and the sea. The ramparts, as in the case of most of the works on the Sussex hills, conform to the outlines of the hill, the space inclosed being about 60 acres. The defences are comparatively weak where nature has rendered the hill difficult of access; but where the slopes are easy, as on the south-west side, so as to favour the approach of an enemy, the ramparts are increased in size and strength, and an additional smaller defensive work extends along the outside of the ditch. The fortress has four entrances; one facing eastwards, a second on the north side, while two face southwards, one of which shows a slightly re-entering angle, and the ramparts in two of the entrances are increased in height. Several rectangular enclosures occur within the camp, facing the entrances, which Col. Fox considers might be somewhat later works, and were, perhaps, intended for the use of those who had to guard the gateways. An ancient roadway leads down the hill, on the south side towards Broadwater; and on the same side artificial terraces are

[22] Historical and Descriptive Account of the Coast of Sussex.

[23] Compendious History of Sussex.

observable, which have been considered as vineyards. It is likely the occupants of the camp obtained their water in this direction. Mr. Turner and Mr. Cartwright have, however, suggested that it might have been obtained from Aplesham, a covered way having probably existed between this place and the camp. On the west slope of the camp a number of pits—perhaps as many as 50—are located, of various sizes, some as large in diameter as 60 or 70 ft.; and very various suggestions have been furnished regarding their origin and uses. Mr. Cartwright thought that they were the sites of rude huts; and Mr. Turner considered the camp to be British, and that the pits 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 on the hill forts."

Although Col. Fox, as previously stated, has since assigned very different uses for them, it does not follow that Druidical worship might not have been conducted within the camp. A powerful and ambitious priesthood would have accompanied the people during their sojourn on the hill, and employed their mystic ceremonies in stimulating the British youth, who were all trained to the use of arms,[24] excepting the Druids and the Bards, to deeds of valour and resistance to the enemy. Mr. Irving attributed the construction of Cissbury to the Romans, and there can be no doubt but that the Romans made it a temporary place of occupation. The entire subsoil of both Cissbury and Chanctonbury abounds in very well formed pottery, some pieces perhaps British, others Roman-British. The scraps appear, however, the sections of vessels not sufficiently large and coarse for cremation purposes, and have the character[25] of culinary ware. During a visit in August, 1871, in company with Mr. Wonfor and Mr. J. P. M. Smith, of Brighton, we found both samian and terra cotta ware. Besides, the entire neighbourhood, both the hills and vales, have furnished undoubted Roman evidences, in the shape of coins, pottery, roads of Roman construction, and

[24] Henry's Hist. of Great Britain, vol. ii, c. 5.

[25] The description here given applies to the S spur of Firle Beacon, where the Rev. H. Smith and Rev. W. de St. Croix found similar specimens. Vol. xxii., p. 76.—*Editor.*

burial places; from one of which, situated on the southern slope of Cissbury, Capt. Wisden, of Broadwater, obtained some well-shaped Roman urns. At the residence of this gentleman, during our late visit, we had an opportunity of inspecting these vessels, as well as some well-wrought flint implements of various types, obtained from Cissbury, similar to those removed during the excavations made by Col. Fox.

During his explorations at these pits Col. Fox removed about 500 or 600 implements of various kinds, most of them very rude, and with one solitary exception chipped. And from the presence of traces of fire-places containing charcoal, from the occurrence of bones of animals that had served for food, as *Bos longifrons*, *Capra hircus*, and *Sus*, from the enormous number of wrought flakes, as well as of Celts and other implements, some of them broken either in manufacture or in use, he concluded that, while some of the pits had been used as dwellings, others had been occupied for the purpose of *shaping* tools and weapons of flint. From the total absence of metal of any kind, and the character of the animal remains, he inferred that the implements were later than the drift, and that they might be classified as belonging to the neolithic or later stone period. The pits were found not to have been floored with clay, or pitched with stones, so that they could hardly have been tanks for water or pens for cattle. Mr. J. Evans has given his assent to these views, that the smaller pits might have been the habitations of the workmen, while the larger served to furnish material.[26]

I have had no opportunity of observing the *Upper Chalk* of Cissbury; but, as in the Hampshire cretaceous deposit, the flint layers run in planes through the chalk at intervals of from 2 to 6 ft., excavations of considerable depth, placing the Cissbury chalk on an equal footing, would have been requisite to reach the flint stratifications, in order to the obtainment of a sufficiency of material.

Late important discoveries have been made of excavations in the chalk for the purpose of obtaining flint for the manufacture of implements. The so-called "Grimes' graves," lately explored by Mr. Greenwell, in Norfolk, were dug for this purpose. They are about 250 in number, circular in outline,

[26] Archæologia, Vol. xlii., p. 73.

varying from 20 to 60 ft. in diameter, placed irregularly at about 25 ft. apart, the whole covering a space of about 25 acres. The tools used as picks were antlers of deer. In other parts of Norfolk similar holes have been discovered, known as "Danes' holes," which were further found to have been occupied as habitations. They are from 20 to 50 ft. in depth, connected by passages at the bottom, and in them were found heaps of chipped flints, evidencing past labour, besides bones of *Bos longifrons*, *Deer*, and *Wolves*.[27]

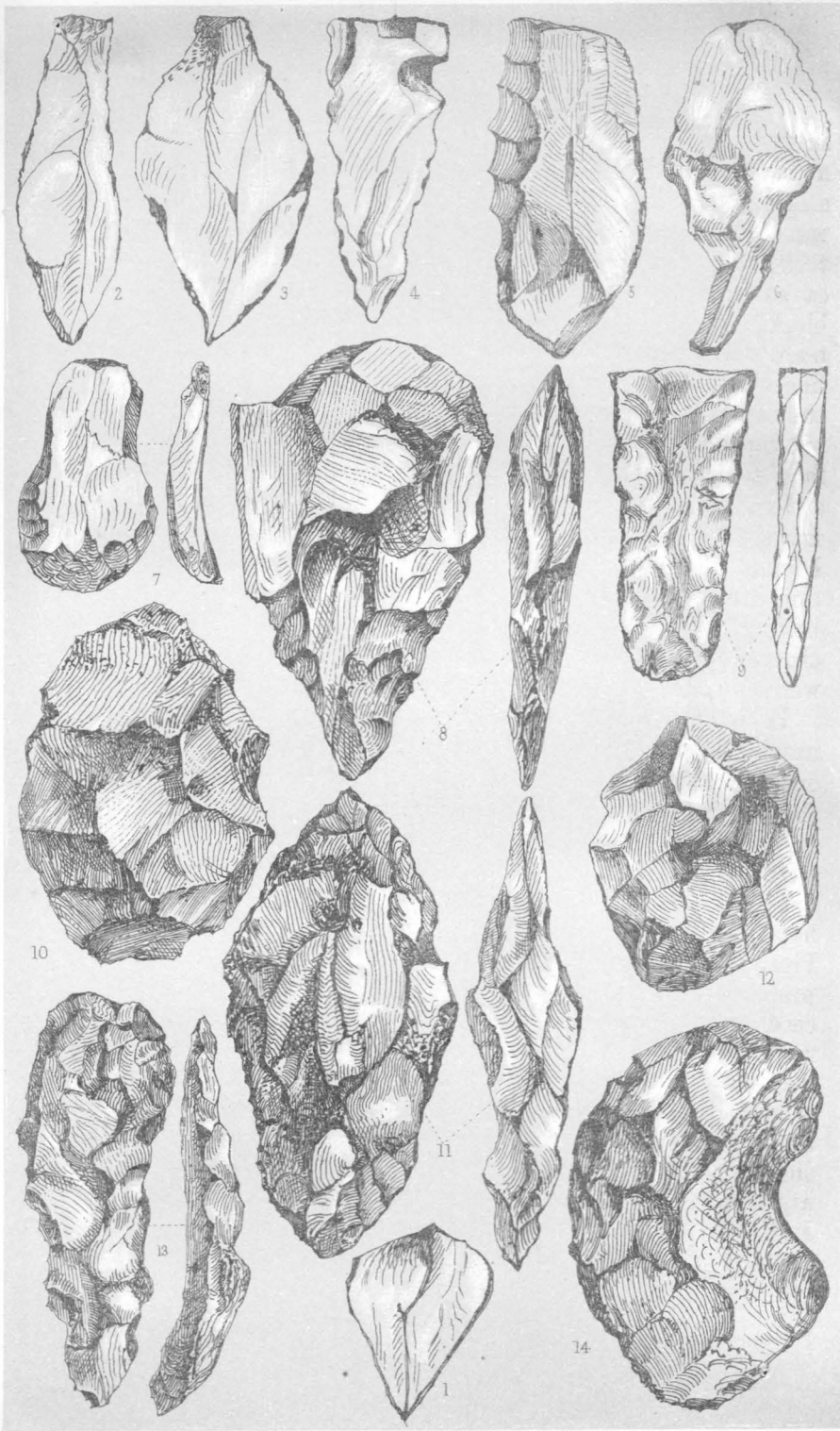
In further testimony to the antiquity of the earthworks at Cissbury flint implements were found at several places along the ditch, at the base of the rampart, lying on the floor of the ditch, beneath 3ft. of surface soil, whence it would appear conclusive that the instruments must have been wrought subsequently to the construction of the earthworks.

Among the implements taken from the pits some were found in form like the true palæolithic tools found in the valley-drifts, thus supplying a link in type between the more ancient and the later implements. They are not, however, to be considered older on account of their form, as they merely show that, at totally different periods, implements were constructed resembling each other, the more ancient types having been retained. This resemblance to the drift form is not so remarkable, as somewhat similar shaped tools occur among the neolithic implements of Hampshire; and with reference to works of human construction, of comparatively recent times, it is singular that implements resembling the European drift forms have been found in the mounds of North America, and they are considered as having been wrought by the mound builders.[28]

At our visit to Cissbury, in August, 1871, we succeeded in finding about two hundred implements of various forms, mostly of rude character, and chipped into outline. They consisted of the so-named celts or chisels, picks, a solitary drill, well-wrought flakes of various forms, finely chipped lance-heads, implements of the oval drift-form, clumsily wrought tools pointed at both ends, choppers with rounded backs for grasping

[27] Journal of the Ethnological Society, Jan., 1871. Art.: "On Grimes' Graves," by Rev. W. Greenwell.

[28] Flint-chips, by Mr. E. T. Stevens, p. 441.—Also in South Africa. See vol. xxiii., p. 325.—*Editor*.



FLINT IMPLEMENTS FROM CISSBURY

in the hand—of similar type to some instruments taken from a cave of the south of France—besides slingstones, and a single scraper found by Mr. Wonfor. The paucity of scrapers was observed by Colonel Fox, as well as the scarcity of boring tools, such as awls and drills. At the working places the excavated materials consisted of innumerable chips, flakes, and blocks of flint, or cores, with broken specimens, evidently mere waste resulting from the manufacture of better tools. A film of wrought flints appeared to occupy the entire surface of the camp, as I observed specimens in all the mould scraped out by the rabbits; and in those lately brought to the surface the patination was recent, while in the flints that had suffered long exposure the oxydation of surface had penetrated in some instances to the depth of a quarter of an inch. I found no calcined stones on the hill, and they are not mentioned by Colonel Lane Fox, which would imply that "stone-boiling" was not practised at Cissbury. In Hampshire charred stones occur at all the flint-working sites, and they were evidently employed for culinary purposes.

In individualising the different wrought flints, a great number found in the camp consisted of flakes containing the outer crust of the flint, evidently the first series chipped from the parent blocks. The secondary flakes contained two facets on one surface, the other, or core surface, one. Some of these were pointed, and leaf-shaped (see fig. 1), and might have formed arrow-heads; while the longer specimens were, perhaps, employed as knives, and for scraping bone or wood. Figs. 2 and 3 have additionally wrought surfaces, and were probably used as knives or darts, most of these specimens exceeding in character and outline the obsidian darts used, in recent times, by the natives of New Caledonia; while fig. 4 was evidently intended for a formidable missile, it being provided with a notch for fixing to the staff. The implement (fig. 5) is wrought obtusely at its back, the opposite edge being sharp, and knife-like; it was probably used for skinning small animals. This type somewhat represents fig. 3 in Colonel Fox's illustrations.[29] Fig. 6 represents an instrument of the drill form, perhaps for punching holes in the untanned skins used for clothing. It has a point, and a bulb for grasping in the hand.

[29] Archæologia, vol. xlii.

In the scraper found at Seaford (fig. 7), the bulbous part is wrought into form by the means of some fine chipping. Similar instruments are used, in handles, by the Esquimaux for the purpose of cleansing skins ; but the handles of these early specimens are lost, if at any time they had any. Scrapers were extremely rare on Cissbury, only four specimens having been found by Colonel Fox, and one by Mr. Wonfor. Fig. 8 somewhat resembles the pointed drift implements, it having a cutting edge mostly all round. Four specimens, such as fig. 9 represents, were picked up at different parts of the camp. They are all of the same length (three inches), beautifully wrought, and were evidently intended for lance-heads. Being quite truncate at one end, they have been considered as broken specimens. I am, however, inclined to think, from their uniform length, and the appearance of the truncate ends, that they are perfect instruments. If they are broken their agreement in form and length implies that they must have fractured in use at their point of junction with the staff. Fig. 10 shows an oval celt, resembling the drift form, of which mention has been made, corresponding with figs. 10 and 11 in Colonel Fox's plate. Fig. 11 appears to be a ponderous form of pick, pointed at both ends, which might, when lashed to a central handle, have served to obtain the flints from the chalk of the hill. Fig. 12 shows the ordinary, many-facetted sling-stone. These are met with of various sizes chipped rudely circular. Fig. 13 is a smaller form of axe or pick, chisel-like at the broader end, and pointed at the opposite one. It has a depression at the centre apparently for fastening. (See side view of same figure.) The large kidney-shaped implement (fig. 14) is of a similar type to fig. 1 in Colonel Fox's plate; it is stated as resembling the heavy choppers found in the Le Moustier cave, in France. A large portion of the circumference of the instrument is wrought to a cutting edge, the remainder being rounded, or left unwrought, to enable the operator to grasp it in the hand, for the purpose perhaps of smashing bones, in order to obtain their marrow. Of these figures, one to seven are represented two-thirds the actual size, the larger ones being reduced about half. (The linked figures represent the front and side views of the same implements). It has been thought that the Cissbury implements as a series, and

from the absence of rubbed specimens, are ruder and perhaps earlier than those from other districts ; but I can observe but little difference between them and those found in North Hampshire. It is probable that most of the better tools and weapons were removed for use, and the remaining ones were insufficiently finished. Some of the types differ somewhat from those found in Hampshire, and in Hampshire we find a proportionately larger number of polished specimens; but they agree sufficiently to render the opinion defensible that they are all the work of much the same period.

The chalk hills of North Hampshire are crowned with camps similar in character to those of Sussex; and, being inland, they furnish, perhaps, more complete examples of British border camps. Their distance from the sea rendered them of less importance to the Romans in effecting a footing in the country, consequently fewer traces of Roman occupation are found upon them. Like those on the South Downs, the fortifications conform to the outlines of the hills, and remains of British dwellings are observed within them. In illustration of the series occupying the chalk range dividing North Hampshire from the Kennet valley, it will be seen that the works on Beacon Hill are similar to those on Cissbury. The enclosure contains eight acres, and the ramparts consist of a single wall and ditch on the outside, conforming to all the irregularities of the upper part of the hill. The defences are deep and powerful on the south side, where the slope of the hill renders ascent easy; but on the north aspect, where the approach is difficult, the slope of the chalk being almost vertical, there is hardly any ditch. The gateway opens south, and commands the entire crest of the neighbouring downs ; and the ramparts at the entrance are increased in height, and form a slightly re-entering angle. An outwork occupies the extremity of the ridge southwards, at about 200 yards from the camp; and in the valley on the west, sheltered on the east and north by the hill, a series of rectangular enclosures marks the outlines of a British village, from which a winding path ascends to the gateway of the fortress. On the eastern slopes of the hill there are some large rectangular works, of similar character to some enclosures on the Wiltshire downs stated by Sir R. Colt Hoare as places where the Britons herded their

cattle.[30] On the flats, at the base of the hill southwards, a cluster of ten tumuli shows the ancient burial place of the British people.

An important difference, however, exists between Cissbury and Beacon Hill. Remains of the older Tertiaries are found on both; and within the earthworks of Beacon Hill circular pits of supposed British origin lie beneath the sod; but the chalk here is of the Lower kind, and therefore comparatively void of flints. The circles could not, in this case, have been dug for the purpose of obtaining material for the manufacture of implements, as on Cissbury; and it is, perhaps, on this account that tools and weapons of flint were chiefly formed; at all events, they are constantly found on the low hills, composed of the chalk-with-flints, overlooking the watercourses of North Hampshire.

The Vale of Kennet might be considered to correspond with the Sussex *meres*, save that the alluvia of the former are all of freshwater origin; for here the peat has covered for centuries the relics of a stone-using people, with the remains of animals, some of whom are now extinct in England, who were contemporary with man, but suffered extermination as the encroachments consequent on human progress rendered their conditions of existence untenable. The peat varies from 5 to 15 feet in depth, "and abounds with branches and other remains of trees, viz., fir cones, nuts, and seeds, and also with the bones and horns of oxen, red deer, roebucks, horses, wild boars, and beavers. A human skull of high antiquity has also been found in it, at a depth of many feet, at the contact of the peat with a substratum of shell marl. It was accompanied with rude instruments of stone."[31] At Thatcham the peat has yielded finely formed polished flint hatchets. Another geological formation of the valley, known as the Lower marl, has furnished a large number of species of freshwater shells, with the following remains of mammalia, which were found to be more plentiful along the edge of the valley:—*Bos primigenius* and *Bos longifrons*, *Cervus capreolus* (roebuck), *C. elephus* (red deer), *Equus*, *Sus*

[30] Anct. Wilts, vols. i. and ii.

[31] Trans. Geolog. Soc., vol. ii., Dr. Buckland; and Geological Hist. of Newbury, Mr. R. Jones Blackett, Newbury, 1854.

scrofa (pig), *Canis lupus* (wolf), *Lutra vulgaris* (otter), *Ursus spelœus* (bear), *Castor Europœus* (beaver), *Arvicola* (water rat). These testify that, in early British times, wild oxen and red deer pastured in the open forest glades, and frequented the watercourses. Beavers built their lodges in the rivers. The wolf, wild boar, and bear had their lairs in the jungle, and man, the builder of the hill fortifications, had to contend against human and animal antagonists chiefly with implements of stone. The wolf lingered on longer than most of his contemporaries, for we find in the year 1212, when the neighbourhood around Kingsclere was all forest, that an entry occurs of "five shillings to the groom of Master Ernald de Auckland, for a wolf caught by his master's dogs, at Freemantle."[32]

In North Hampshire the signs of Celtic occupation are more observable as you approach the loftier chalk hills; which would appear explainable, as has already been shown in the case of the Sussex hills, from the necessity the inhabitants were under of living near their hill fortresses. Besides, the deep clays were densely wooded, rendering the lighter chalk brows the more favourable places for occupation. The soils, being light and porous, were more readily cultivated, and the open glades along the edges of the forest furnished pasturage for their domestic cattle. It was the custom of the Celtic people to build their houses in the skirtings of the forests, and fortify them in various ways. Their summer habitations consisted of stakes driven into the ground, and covered over with boughs of trees; and their winter huts were pits dug in the earth, and protected from the inclemency of the weather with superstructures of wood or wattle. They were placed generally in groups, forming villages, frequently stationed on the low hills, overlooking the watercourses; and some of their deeper winter retreats were so cunningly constructed as to escape detection by their enemies. These villages were, in some instances, surrounded by a rampart and ditch, as a protection from outward attacks, and for the security of their cattle. The Britons are said, by the ancient writers, to have lived in wretched huts;[33] and both Cæsar and Strabo, writing of their towns, state that they were found in the forests and

[32] The Patent Rolls, May 31st, 1212.

[33] Diodorus Siculus, lib. v., c. 8.

wooded districts.[34] As civilization advanced, they effected clearings in the woodlands; and, in order to render the heavy clays more workable and productive, the later Belgic Britons chalked the soil, as is the custom at the present day. Thus, Pliny states[35] that—

"The people of Britain have found out another kind of manure for their grounds, which is a fat clay or earth called 'marle.' Of those marles the white ones are the most valuable; of these there are several kinds; first, that which has the most sharp and pungent taste; another is the white chalky marle, which is most used in Britain, its effects are found to continue 80 years, and no man was ever yet known to have manured the same field twice in his lifetime."

We have testimony to the above statement of the social condition of the British people, in the remains of their pit-dwellings, found grouped both on the hills, and in the woodlands of North Hampshire, as well as in several parts of the neighbouring county of Wiltshire. They appear, however, not to have been all occupied for the same purpose, some of the pits representing dwelling places, others, perhaps, storehouses, or granaries. Mr. E. T. Stevens, of Salisbury, considers the Whorl Hill pits, in Wiltshire, and the pits on Danebury Hill, in Hampshire, as storehouses for grain The presence of these would imply foresight in the natives, in making a provision on the hills in the event of having to seek shelter from some attacking force. The pits, used as habitations, further show, by their reliquiæ, that they were not all of one period, or tenanted by people all equally advanced in the construction of their pottery, tools, and weapons. The discovery was made not long since of the vestiges of what seemed to be a feeble tribe, who inhabited a subterranean village at Highfield, near Salisbury. Their wigwams were separate, and in groups, sunk 10 feet in the gravel, and resting on the chalk; and were reached by the means of circular shafts; and the huts had moveable covers of wattle and burnt clay. These poor people had an early knowledge of weaving, and cultivated some of the cereals, as shown by the discovery of some impressions of corn grains in the clay, and the presence of rude hand grain-rubbers. Their only implements were of

[34] Cæsar Comment. de bell. Gall., lib. v., 21.

[35] Pliny's Nat. Hist., lib. xvii., c. 6.

bone and stone, and they used, besides, a primitive form of stained pottery, which bore no traces of the potter's wheel.[36] Similar traces of the flint-workers in Hampshire have lately occurred during the excavation of a British winter dwelling, and its attendant passage, at Finkley, near Andover, in which were found pottery, and flint implements of similar description to those found in the pit dwellings of Wiltshire; while the tools of flint correspond with those found in the surrounding fields at Finkley. Some further light was thrown on the state of civilization of the occupants of the dwelling by the discovery of articles of bone and wood, and whorls of chalk, which had evidently helped to construct some simple apparatus used for spinning. Quantities of charred flints also were thrown out of the pit, indicating that the inhabitants had practiced "stone-boiling." The "pot-boiler," or heating-stone, marks a very rude state of social life, as it is thought to have subserved the purpose of raising the temperature of water, or for roasting food, when, there being no metals, the simple pottery of the period was not sufficiently good to resist the direct action of fire.[37]

Further evidence of the early British races can be adduced in the many sites for flint-working observable on the low hills overlooking the water-courses of North Hampshire. On both sides of the Upper Test Valley spots occur, which were evidently places of perhaps temporary occupation, at which instruments of most of the types recognised as belonging to the later stone period are found—Celts, scrapers, arrow-heads, hammers, mullers, awls, drills, spear-heads, slingstones, and charred flints, used, perhaps, to construct earth-ovens, or as heating-stones. Sections of rude grain-rubbers are also commonly present at these sites. And on the east side of the valley a cluster of nine hut circles, lately explored, brought the gratifying conclusion, from the nature of their contents, that we had lighted on the simple dwellings of those who had wrought the implements found along the hills. The pits extended from the upper slope of the hill almost down to the edge of the valley, and were about 12 feet in diameter, and five in depth, and had entrance passages. In one of them a

[36] Flint Chips, by Mr. E. T. Stevens, p. 57.

[37] Tylor's Early Hist. of Mankind, pp. 262-269.

quantity of large flints indicated that its superstructure must have been partly formed with this material. Their contents consisted of wrought flints, similar to those found on the hills, bones of animals that had served for food, and that had evidently been exposed to fire; most of the long bones having been split open in order to secure the marrow. They consisted of those of *Bos longifrons*, *Cervus elephus*, *Capra hircus*, *Sus*, and *Canis*. Some of the smaller bones had been shaped into rude tools. Pottery of a coarse, hand-made character, with pieces of sandstone grain-rubbers, and spindle-whorls of chalk, were found in the centre of the circles, where the fireplaces had been, but not a particle of metal, save a lump of native ironstone, which had been taken from the Eocene drift, and used as a hammer, as heavy and available for the purpose, without knowledge, probably, of its valuable metallic properties. It was further found that the people had their cooking holes outside their dwellings, and practised "stone-boiling." A further testimony to British occupation occurred in the discovery of an early British gold coin, picked up in clearing away the mould from around the circles. Its weight is 96 grains, and the figures *obv.* and *rev.* are evidently rude imitations of some more perfect models, perhaps Greek ones, introduced among the Britons during their commercial intercourse with other countries, or brought over by the minters with the Gallic people.

In arriving at some conclusion from what has been written respecting the people who wrought the rude and primitive tools and weapons of flint found in Sussex, it might be inferred that they occupied hut villages in convenient places under shelter of the hills, and for winter use selected spots porous to water, and there dug their subterranean habitations; and when driven by outward pressure, resorted to their defences on the hills. Their powerful intrenchments, extent of pasturage, and ready access to the coast for fishing, imply that they must have been both numerous and warlike. They hunted the deer, wolves, and hogs in the extensive forests, then occupying the whole of central Sussex, and extending into Kent and Hampshire. In addition they had their short-horned ox *(Bos longifrons)*, swine, goats, and sheep, which they penned within the rectangular earthworks already stated

as occurring on the downs. They used flint as their principal material for purposes of war and the chase; and in the hands of a patriotic and powerful people, the heavy and sharp weapons formed with it must have been most formidable and destructive. It is further manifest that other materials, ready of access, and easily recognised, such as wood, bone, and horn, were made available; while the presence of articles of bronze, and occasional ones of iron, in their later burial mounds, testify that the metals were, to some extent, used; but it is singular that, at the flint-working sites, metallic objects are seldom, if ever, found. Regarding the last resting places of these people sufficient has been discovered, in the Sussex barrows, to lead to the belief that the occupants were, in all probability, the people who constructed the earthworks, and shaped the flint implements strewed so largely within their area. The tumuli on Beachy Head, explored by Sir J. Lubbock, Mr. Evans, and Col. L. Fox; and the barrows[38] of Alfriston, under the researches of the Rev. H. Smith, and the Rev. W. de St. Croix, were found to contain simple objects of flint and Kimmeridge clay, with a primitive form of pottery, the flint tools corresponding with the neolithic implements found on the hills, while the interments in the long and round barrows determine that successive races[39] *dolichocephalic* and *brachycephalic* have, in the long past, occupied the county. The former are probably the true Celtic interments of the stone period; the latter, and the secondary burials, sometimes found in the upper strata of the long barrows, probably belonging to the Belgic Gauls, and representing the period of bronze mixed with objects of stone, as well as that of the bronze and iron transition.

[38] Sussex Archæolog. Soc. Collections, vol. xxii.

[39] Two skulls, types of dolicocephalus and brachycephalus, were found in one *round* barrow at Alfriston, by Rev. H. Smith and Rev. W. de St. Croix. These are now in the Society's Museum in Lewes Castle.—EDITOR.