

strikingly dissimilar in form from all other Neolithic types, though apparently of Neolithic date, come to be so exactly similar in contour, material, and workmanship not only with each other but with the typical West Indian axes, is a fascinating problem, but one which bristles with difficulties. Have we here another example of the development of form in widely-separated localities, due to the influence of like material and like requirements upon the mind and hand of man? If we admit them to be of Neolithic date—and the weight of evidence is distinctly in favour of such—how can their similarity to the Carib axes both in *form* and *material* be otherwise explained? If their Carib origin is admitted, how can their European distribution in Neolithic times be accounted for?

I understand from Mr. T. Sheppard, F.G.S., of Hull, that he has a similar axe from Flamborough and that there are other examples in the Driffield Museum, but I have not had an opportunity of examining these. Mr. Sheppard considers the material to be Borrowdale ash and the axes to be Neolithic.

THE OCCURRENCE OF PALÆOLITHS IN NORTH-EAST LANCASHIRE.

BY T. E. NUTTALL, M.D., F.G.S.

Read in London, February 23rd, 1915.

For many years it was postulated that an ice sheet had covered the north and west of Great Britain during the period when Palæolithic man lived and made his flint implements in the south and east of England. It was taught that the southern margin of this ice sheet corresponded in the main with an imaginary line stretching from about the mouth of the Severn to the Wash, or, as others claimed, from the mouth of the Severn to the mouth of the Thames. These views were held to be supported by the fact that very few palæoliths had been found north of the above-mentioned line. As years passed, however, new facts testifying to the lengthy duration of the Palæolithic period slowly accumulated, and knowledge respecting the great Ice Age gradually increased. True, many and divergent views have been advanced respecting the several phases of the Ice Age as these concern Lancashire and the north of England generally. Some glacialists hold that the Ice Age there, as also in the Alps, was broken up into several complete cycles consisting of a number of glaciations with a corresponding number of interglacial periods. Others believe that there was only one interglacial period in the north of England. Still others, as pointed out by Lamplugh, affirm that there is "no proof of a single absolute interruption of the glacial conditions from beginning to end of the period; and that the evidence indicates only one great glaciation, during which there were wide oscillations of the margins of the ice sheets in different places due probably to more or less local circumstances."

As a fact, the whole of Lancashire was never at any time covered by an ice sheet; the highest altitude reached by such ice being not more than 1500 or 1600 feet above O.D.; therefore Pendle Hill, which lies but four miles north of the place of occurrence of these implements, and is 1831 feet high, was not covered by this ice sheet. The same is true of other hills in the district; for example, Boulsworth, near Colne. It should be noted that the 1600 feet altitude represents the highest level attained by the ice sheet in the district under consideration, and that in all probability the upper surface of that sheet lay at a much lower level during the greater part of the Ice Age, thus leaving extensive stretches of land entirely free from ice. Further, it must be allowed that a lengthy portion of the Palæolithic period was stretched between the disappearing ice and the commencement of Neolithic times. Accordingly, whichever view of the glaciation of Lancashire be adopted, it is clear that Palæolithic man was not prevented from reaching that area by an all-encasing ice sheet which remained there during the whole of the Palæolithic period.

But, apart from theory and assumption, certain facts prove conclusively that Palæolithic man not only could but did exist much further north than was formerly held to be possible. The finding of Palæolithic tools commingled with the remains of Pleistocene mammals in the Cresswell Caves of Derbyshire testifies to this fact. Then, too, stone implements of Palæolithic type have been found at Saltley, at Lincoln, and at Huntow, near Bridlington, the last-mentioned place being some twenty miles further north than the spot where the tools now exhibited occurred.

It is clear, therefore, that other explanations in addition to the presence of an ice sheet must be sought for the fact that so few palæoliths have been found in the north. In this connection it is well to remember (1) that Lancashire and the Pennine country generally are non-flint districts, and that any palæoliths which may chance to exist there will almost of necessity have been formed from non-flint material, and will therefore present an unfamiliar appearance, and on this account be liable, even likely, to remain unrecognised; for although many people have become familiarised with the appearance of implements made of flint, they have only the scantiest acquaintance with those formed from other rocks; (2) that it was more difficult to make palæoliths from non-flint material than from flint, and because of this difficulty fewer tools would be elaborated, whilst greater care would be taken of those already made; therefore these implements would be less numerous in the northern non-flint districts than in those districts where flint abounds, even if it chanced that an equal number of persons lived in the two areas. In all probability, however, primitive man would prefer to live in southern districts where climatic conditions were more favourable and flint was readily accessible, and thus the northern non-flint area would be more sparsely populated than the south, and on this account also would contain fewer palæoliths.

Bearing these points in mind, it is easy to understand, even

apart from the presence of an ice sheet, how it might come to be believed that palæoliths did not exist in northern Britain. Once this belief had become established even those interested in prehistoric archæology would refrain from searching. Still, despite the difficulty of detection of non-flint palæoliths, and the comparatively scanty search made for them, together with their probable rarity in the north, such implements have been found there, as already noted.

Quite a number of quartzite and ironstone palæoliths were unearthed in the Robin Hood Cave at Cresswell Crags, and now a considerable number of non-flint palæoliths have been discovered in river drift in N.E. Lancashire. In this connection it is suggestive and interesting to recall the opinion of the late Sir John Evans and to note that an acknowledged authority, invariably cautious and guarded in his statements, yet scientifically alert, had come to believe that non-flint palæoliths did exist, and would some day be found in the alluvial deposits of our northern rivers. The following semi-prophetic statement found on pages 580 and 581 of the second edition of his great work, "Ancient Stone Implements of Great Britain," bears witness to his belief :—

"It has been held that the absence of Palæolithic implements in Britain north of an imaginary line drawn from about the mouth of the Severn to the Wash, is due to glacial conditions having prevailed in the north-west part of England and in Scotland at the time when the makers of those early tools or weapons occupied the southern and eastern parts of this country.

"The question now arises whether the assumed absence of Palæolithic implements over this area may not be due to their not having as yet been found, and not to their non-existence.

"It must be remembered :—

"1st. That flint is extremely scarce over a great part of the area, and therefore that any implements would almost of necessity have to be formed from some other material, such as quartzite or one of the older rocks.

"2nd. That in the case of implements made of such materials, the evidences of human workmanship are not so conspicuous or so easily recognised as on those formed of flint.

"3rd. That owing to the nature of the rocks over which the ancient rivers flowed, the alluvial deposits within the area in question are of quite a different character from those formed in districts where flint abounds.

"4th. That such alluvial deposits are not so constantly being excavated for economic purposes, and consequently not so open to examination as ordinary flint gravels, and that the implements made from such material as quartzite being probably more difficult to make, they would be *fewer in number over a given area and also more highly treasured.*"

"Even in the case of cave deposits we have seen how, in those of Cresswell Crags, a locality which lies within the presumed non-implementiferous district, all the larger implements were made from

quartzite, some of the tools being so rude that human workmanship can hardly be recognised upon them. I therefore venture to think that if competent observers . . . will devote their attention to the ancient gravel-like alluvial deposits of our northern rivers, and seek for implements not formed of flint but of quartzite or some other of the older rocks, their search will be rewarded."

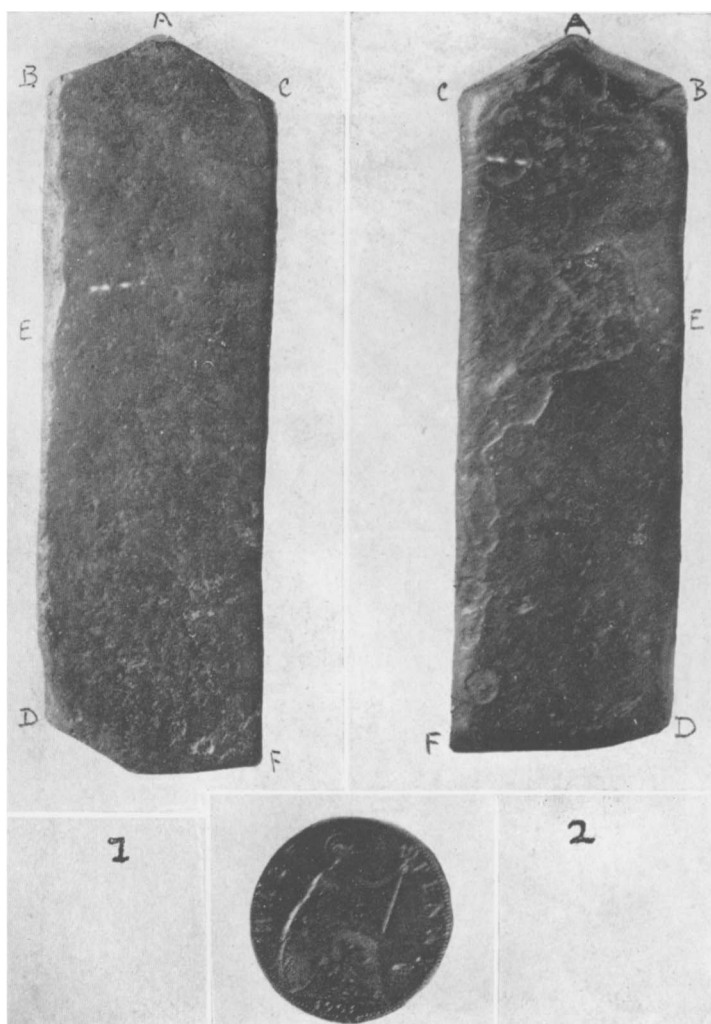
Obviously Sir John Evans was convinced that the assumed absence of Palæoliths from the north of Britain was quite unwarranted. The implements herewith exhibited accord in many particulars with the statement just quoted, for (1) they are all formed from the older rocks, several being made from iron-stone derived from the carboniferous shales which occur in the immediate neighbourhood. (2) The evidences of human workmanship upon these tools are not so conspicuous or so easily recognised as those afforded by flint implements, but they are just as real and quite as convincing once they have been detected. (3) The tools were found in the "alluvial deposit" of a northern stream.

The said stream drains the western slope of a small anticline, the crest of which is situated a mile south-east of the place of occurrence of these implements. The course of the stream, like that of many others in the neighbourhood, was carved out ere glacial conditions set in. During the Ice Age it was, for the most part, filled in with glacial drift through which the stream has at length worn a narrow channel, so that at the place where the tools were found the stream has now reached its former level. Its altitude at the spot just mentioned is 400 ft. above O.D.

Briefly and generally stated, the geology of the place of occurrence of these tools is as follows:—The surface of the stream lies about twenty feet below the surface of the surrounding land. The bed of the stream consists of carboniferous shales which lie immediately below the horizon of the seam of coal known locally as the Arley mine. A considerable amount of river-drift has accumulated on both sides of the stream, and it was in this drift that some of the implements were found, though not a few occurred in the actual bed of the stream, whilst others were found by the side of it at a height of four or five feet above its present level. Regarding the precise age of the river-drift, or of the tools themselves, I am not prepared to commit myself. Judging solely by the types of the tools, I am inclined to conclude that they represent several Palæolithic industries. The implements of coup-de-poing form suggest the Moustier industry, for, with one exception, they are worked on one surface only.

The exceptional one has been formed from a piece of gannister sandstone and suggests the Acheul or Chelles industry, for although much rolled, it affords evidence of elaboration on both surfaces, and exhibits a ridge (*arête latérale*) running midway between them. It should be mentioned that this tool was found some two hundred yards further down the stream than the place of occurrence of the others now exhibited.

Having shown the possibility of Palæolithic man penetrating



A Hand Drill.

as far north as Lancashire, we may now proceed to examine a few river-drift implements found in the north-eastern part of that county.

A HAND DRILL (See Plate XV.).

This tool is a borer or drill which has been formed from a piece of ironstone. It is slightly more than an inch wide, nearly half-an-inch thick, and three-and-a-half inches in length. At one end it is brought to a point (A) of much the same shape as that of the ordinary modern iron drill. A hinge fracture or its equivalent has rounded one of the angles (D) at the non-pointed end so as to ensure that the pressure exerted in the process of drilling should not cause pain. When this implement is so placed relative to its observer that the pointed end projects whilst the rounded angle above-mentioned lies on his left, then its cutting edge (A—B) is seen to be on his left also, that is, the blunted angle and the cutting edge are on the same side of the tool and doubtless are correlated. On inspection it is found that the cutting edge projects beyond the corresponding edge of the right side of the tool. This fact denotes that the drill is single, that is, possesses only one cutting edge. This edge has been obtained by the process of splaying or bevelling as is the cutting edge of a modern iron drill (Fig. 2, A—B).

The upper edge of the left border is distinctly snapped at the distal end, the snapping commencing at the operative shoulder (B) and extending therefrom an inch-and-a-quarter in the posterior direction to point E. Obviously the cutting edge has been renewed from time to time, either by rubbing against a rounded stone, or, as is more probable, by means of a round rod-like whet-stone. A round whet-stone would be preferred to a flat one because whilst serving the purpose of sharpening the cutting edge it also left the operative shoulder and the point of the drill intact; in fact, such a whet-stone would rather improve the said shoulder and would render the point more acute. It is not contended that this method of sharpening would entirely obviate re setting of the operative end of the tool, but it would greatly reduce the number of times that re-setting would require to be resorted to. On the other hand the use of a flat whet-stone would soon have driven both the operative shoulder and the point out of their proper positions, thus rendering necessary frequent re-setting of every part of the operative end of the tool. The same result would have followed the rubbing of the tool against a flat stone.

This implement possesses several features which are at once interesting and significant. Its particular length, its flat rectangular outline, its hinge fracture all suggest that it was intended to be used by the unaided hand; that is, without such accessory apparatus as the bow-drill, or even the simple cord.

The correlation of the hinge fracture with the cutting edge, also the particular position of the snapped edge, show that this drill was intended to be used by the right hand, and that it was meant not to

change its position relative to that hand. The last-mentioned fact implies that the object being drilled would have to be turned about from time to time. The particular edge (B—E., Fig. 1) which has sustained snipping, and the evident direction of operation of the force which produced the snipping indicate that drilling took place during supination of the fore-arm, whilst this in turn denotes that the primitive people using this tool had found the movement of supination more powerful than that of pronation.

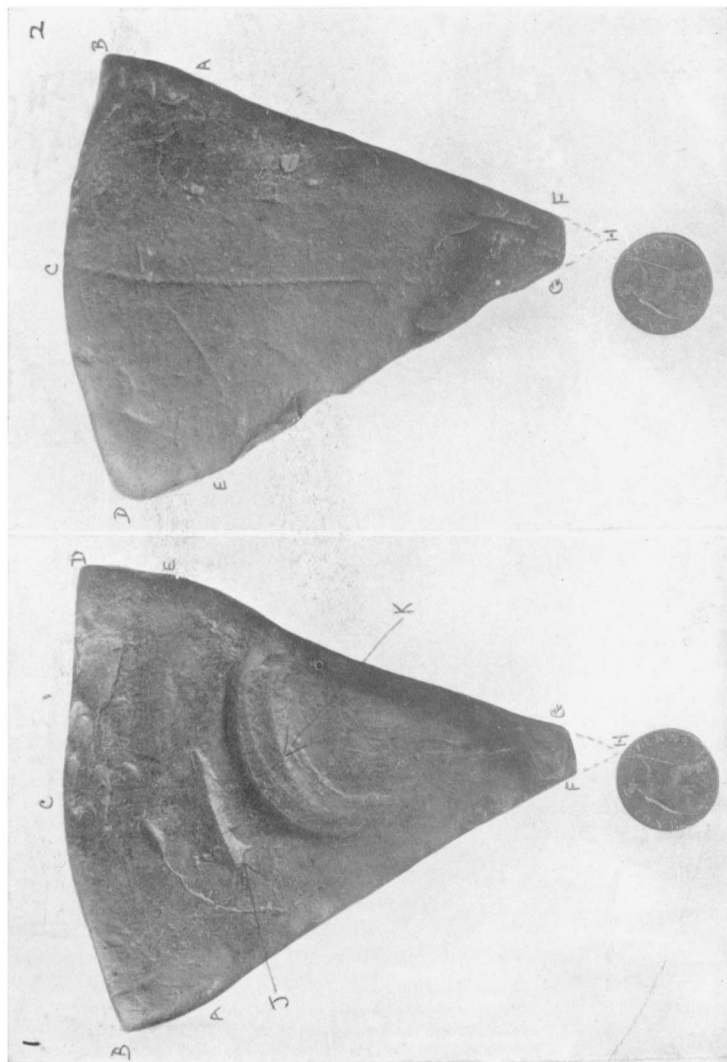
The precise length of the snipped portion (B—E, Fig. 1) suggests that the tool was used for the purpose of drilling an object or objects about the thickness of a piece of reindeer's antler; further, seeing that the point of this drill lies in a line running parallel with and equi-distant from its two sides, the width of the tool indicates the diameter of the perforation it would yield, and it chances that the perforation this drill would make is as nearly as possible the size of that present in a certain "lance-shaft straightener" found in a cave at La Madeleine. If, as seems likely, this drill has been used for the purpose of making lance-shaft straighteners it follows that the last-named tool and also the lance were in existence, and presumably in use, in N.E. Lancashire during Palæolithic times. It also suggests that the early inhabitants of the County Palatine were given to hunting. Further, if the lance-shaft straighteners produced by this tool were, as is likely, made of reindeer's antler this would imply the presence of the reindeer, and in turn suggest the prevalence of a cold climate in the place of occurrence and at the time of manufacture of these implements.

The probable presence there of the lance-shaft straightener and the lance suggests the likelihood of the district where this tool occurred having been the abode not only of the reindeer but of large savage beasts. The presence of such animals as far north as Derbyshire and even Yorkshire during Pleistocene times is attested by the animal remains found in the Cresswell Caves, Derbyshire, and the Victoria Cave, Yorkshire; the last-named being further north than the place of occurrence of these tools.

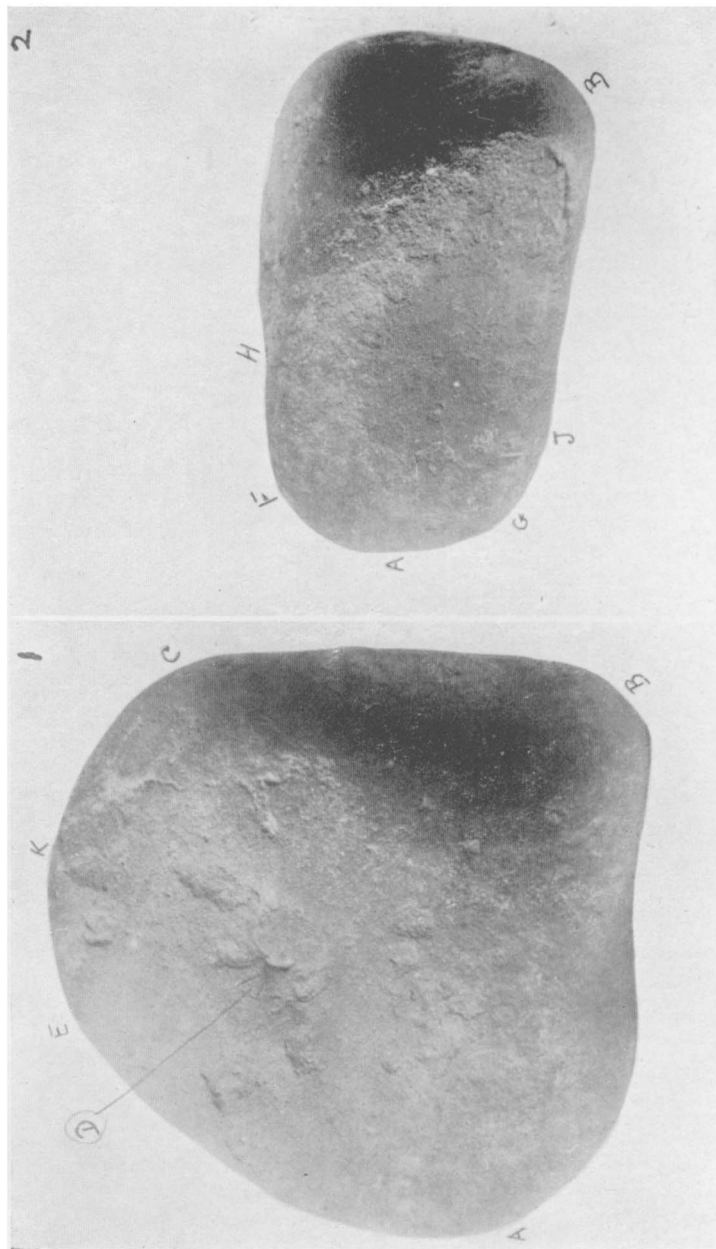
The possession by the same implement of so many correlated features, all of which suggest either intention to produce, or the effects of use of a certain tool, namely, a drill: a drill capable of producing a perforation that would fit a lance-shaft of known size, a drill suitable for use in the right hand and intended to operate during supination only, affords definite and irrefutable evidence of human design and fabrication.

A PUNCH OR CHISEL (See Plate XVI.).

This tool, which is triangular in outline, has two sides of equal length, each measuring $4\frac{3}{4}$ inches. The third side or base (B—D) is curved somewhat and is $4\frac{1}{4}$ inches long. The implement has been fashioned from a tabular piece of ironstone and possesses an average thickness of a little over an inch. At two of its angles (B and H) it has been somewhat reduced in thickness. The thinning at one angle (H) has been effected intentionally in order to form the



A Punch or Chisel.



A Hammerstone.

"point," whilst the thinning at the other angle (B) most probably owes its origin to a fracture sustained during usage. What, then, is the nature of this tool? Its general configuration and also the form of its "point" suggest a punch or chisel. This view is confirmed by comparing it with a similar tool pictured and described in Worthington G. Smith's "Man, the Primeval Savage" (pages 122 and 123). In this description Mr. Smith significantly observes that two of the more prominent angles of his tool are splintered. The tool under consideration being similar, the following question naturally presents itself:—Does splintering or other evidence of usage exist on any part of it? On examination such evidence is at once detected in the shape of splintering of one of the edges of its base or upper border, namely, the posterior edge of the portion C—D, Fig. 1. With regard to this border (B—D) several points are to be noted: (1) Its convexly curved contour, which form was evidently adopted in order to divide the border into two striking platforms, and also for the purpose of preventing possible injury to the left hand by the blows of a hammer wielded by the right hand. (2) The plane of this border does not lie at right angles to the two surfaces, but slopes somewhat—a fact which is very significant, since on the right of the middle line of the tool the border inclines towards the operator, thus forming a striking platform (C—D, Fig. 1); whilst on the left of that line it inclines in the opposite direction, forming a second striking platform (C—B, Fig. 1). Why two opposite inclines on the same base? Evidently in order that the tool could be turned about and used in two positions, and so that in either position full contact could be secured between the hammer-stone and the entire width of the particular striking platform which chanced to be used.

Being a chisel, this tool would be held in a fairly high position when in use, so as to enable the operator to see the point when striking his blow. This high position of the chisel, particularly of its upper border, implies that the fore-arm dealing the blow would at the instant of impact lie somewhat above the level of the elbow, and a blow struck by an arm in this position would of necessity fall most heavily on the posterior edge of the striking platform. Hence the greater liability of this edge to sustain damage; hence, too, the explanation why this particular edge of the tool under consideration is found to be splintered. (See C—D, Fig. 1). The tool being turned about to the position shown by Fig. 2, the same reasoning applies with equal cogency to the striking platform C—B.

The "pointed" end of this tool (F—G, Fig. 1) has been formed by chipping from both surfaces, and its extremity presents a smooth area which is almost a square, each side of which is about three-eighths of an inch long. The plane of this area, however, does not lie at right angles to a vertical line passing midway between the two sides of the tool, but somewhat obliquely, sloping slightly upward from F to G. This fact denotes that the really operative part of the "point" is the left side of the said area, which side may now be spoken of as the *edge* of the punch or chisel. Great care

has been taken to leave this edge remarkably strong and well supported, whilst the right edge has been splayed away and is therefore comparatively weak. It follows that the tool would be most effective when the left edge was placed against the part to be chiselled and the force of the hammer was applied to the striking platform C—D, (Fig. 1).

There can be little doubt that the tool was generally used in the manner just indicated, as the edge of the platform just mentioned is the one which has sustained most damage. The implement might, however, be turned about, in which event the alternate striking platform (C—B, Fig. 2) would be available for the blows of a hammer wielded by the right hand of the operator, the same edge being operative in this as in the first position.

The two sides are almost though not quite plain. The left (B—F, Fig 1) apparently presents the natural surface of the stone, except near its upper extremity, from which part (B—A) a piece has been detached, probably intentionally. The right side (D—G, Fig. 1) differs from the left in that it has been freely chipped, though in other respects it is similar, having had a piece detached from the upper extremity (D—E). Probably the pieces were deliberately removed from the extreme tips of the angles so that the outer extremity of the striking platform should not be weak and easily fractured. As now shaped, these angles at points B and D are strongly supported and would bear a stout blow.

It remains to mention the two surfaces of this tool. Both retain, in large measure, the natural cortex of the rock, yet both afford some evidence of human fabrication and usage. The posterior surface at F—G, Fig. 1, evinces chipping, contributory to the formation of the point, and splintering is observed to have taken place on that portion of its upper edge which received the blows of the hammer. This surface also presents two depressions situated about midway between the base and the point; one depression, K, (Fig. 1) being curved, lengthy, and natural in origin, whilst the other, J, (Fig. 1) is straight, short, and probably human in origin. Either of these depressions would serve as a thumb-hold when the tool was in use.

The anterior surface (Fig. 2) is quite smooth and somewhat rounded in contour, though midway between the base and the point there is a depression which could serve as a thumb-hold. This surface has undergone chipping near the point in the same manner as the posterior surface, but in this case the chipped portion has been polished; the polished part still indicating the direction of the rubbing movement which smoothed it. The parallel lines resulting from the friction run at right angles to the long axis of the tool. The upper right angle of this surface affords evidence of having been splintered or snapped by usage, but the splintered portion has since been smoothed. A little to the left of the middle line of the tool this surface displays a shallow groove (Fig. 2), which runs from the upper border to the edge of the chipped portion near the point. This groove suggests glacial action, but there is no

Plate XVIII.

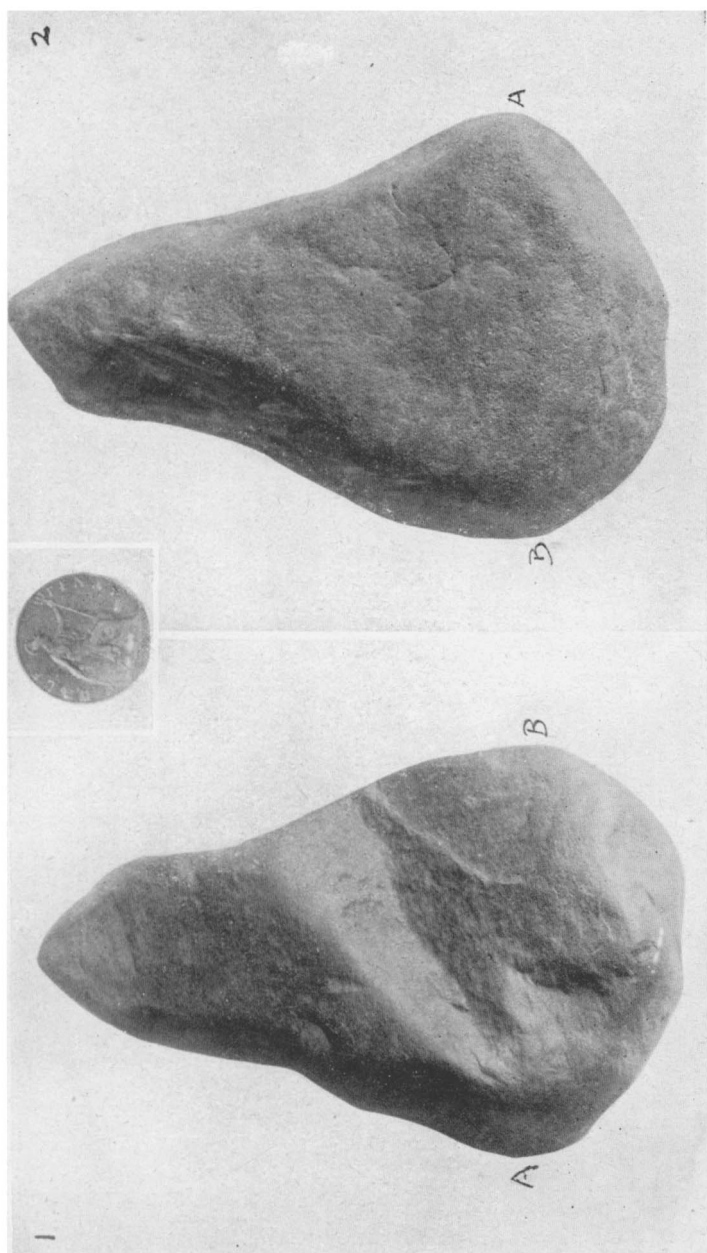
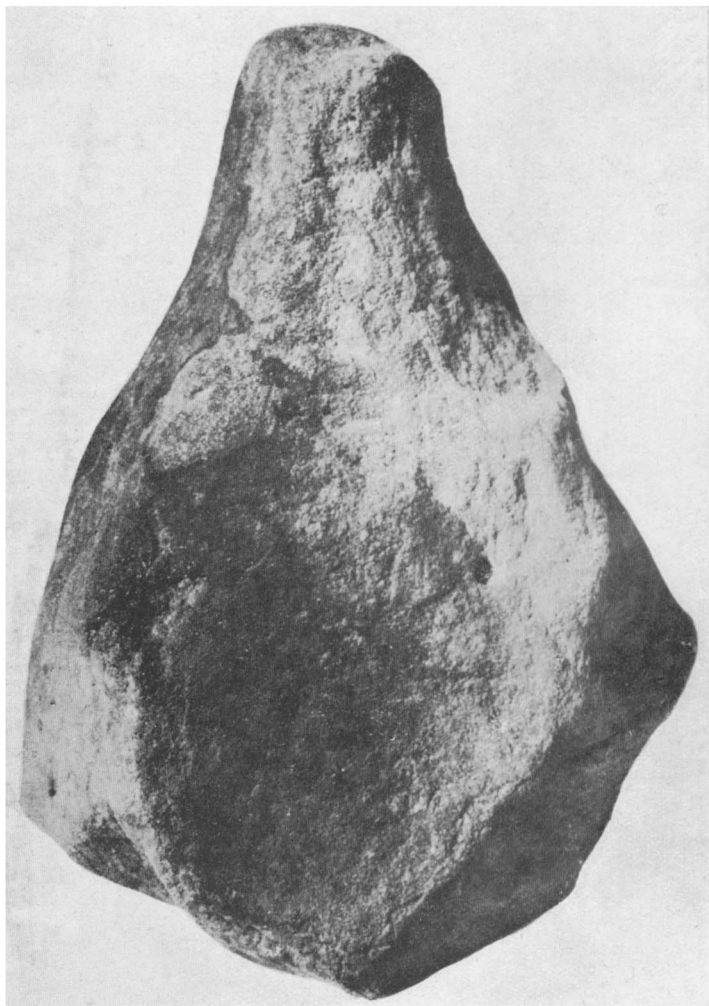


Plate XIX.



evidence making it clear whether the groove was formed before or after the stone had been made into a tool. It is worthy of note, however, that there are many glaciated stones in the immediate neighbourhood of occurrence of these implements.

Was the tool held by the left or the right hand? Obviously the depressions on its two surfaces are meant to serve as thumb-holds; therefore, if the user of this tool had held it in his right hand with the right thumb lodged in one of these "holds," and had hammered with his left hand, then the striking platform would—for reasons already stated—have been made to slope in directions the reverse of those exhibited by this tool. It seems clear, then, that the person who used the tool was right-handed, which implies that he hammered with his right hand whilst he held the tool in his left.

A HAMMER-STONE (See Plate XVII.).

At the place of occurrence of these implements at least two types of hammer-stones have been found; one possessing an extensive flat striking surface, and designed for use with a punch or chisel; the other exhibiting a small and somewhat pointed striking part and intended for direct employment upon tools in process of manufacture. The hammer-stone now under consideration allies itself with the second variety. It is just an unworked pebble or nodule which the fabricator evidently found ready to his hand and suited to his purpose. Nevertheless the stone has been carefully selected, as becomes evident once it is closely examined.

The tool is rotund in general outline, but possesses two protuberances (A and B, Fig. 1), one of which (A) is severely battered. The diameter of this stone is $4\frac{1}{4}$ inches, and its average thickness two inches. The surface seen in Fig. 1 presents a distinct depression (D) which serves to give grip to the thumb. The method of holding the tool is found by passing the right thumb into the aforesaid depression, seizing the stone between the thumb and fingers, and directing the battered protuberance downwards. The tool now lies the correct way about, but a secure hold is not obtained until the right forefinger is placed on the upper border (C—E), and the third and fourth fingers of the same hand grip the unbattered protuberance (B).

It will now be found that the shaded portion running between B and C (Fig. 1) fits admirably against the ball of the thumb, and that the tool can in this way be held securely even when striking a stout blow. Examination of the striking part A, (Fig. 2) reveals the fact that it has sustained extensive battering. The outline of the battered area is decidedly instructive, for it stretches obliquely across the lower border (F—G, Fig. 2) of the stone, and, continuing upwards, extends somewhat upon the two surfaces lying at right angles to this border as far as points H and J.

This area runs in precisely the direction one would anticipate from a knowledge of how the tool was held and used. A hammer-stone of this type would assume an oblique direction when striking flakes off a stone held in front of him by the fabricator. The

obliquity would be the same as that of the fore-arm delivering the blows. The question arises—Is there any relationship between the oblique lie or outline of the battered area and the oblique position in which the hammer-stone was held? No doubt there is, and a very close one. The oblique direction of the battered area is the direct outcome of the position in which the tool was held when striking its blows.

It is evident from the presence of another battered area (at K, Fig. 1) that this tool has been employed in a second position; in which case the right thumb rested in the same depression as before, whilst the hammer-stone was turned half-way round from its first position, the index finger of the right hand resting on the now upper border of the tool. Although this position affords a secure grip to the hand, the fabricator does not appear to have chosen it very often, for the battered surface accruing from its adoption is far less extensive than that arising from use in the first position. The two battered areas are, however, quite similar in general outline. The only positions which offer a secure grip to the right hand together with a suitable striking surface are the two already mentioned. Obviously this hammer-stone has been used mostly, if not solely, by the right hand, for it cannot be held securely by the left if the most battered area be adopted as the striking part. Further, had it been used by the left hand, the battered area would then have run at right angles to that existent on the tool.

The coups-de-poing (using the term in its broadest sense) figured on Plates XVIII., XIX., and XX., were also exhibited.

PLATE XVIII.—This coup-de-poing as already stated (p. 64) is worked on both surfaces, and presents a definite *arête latérale* which is most pronounced at the butt end between A and B. The tool is elaborately chipped.

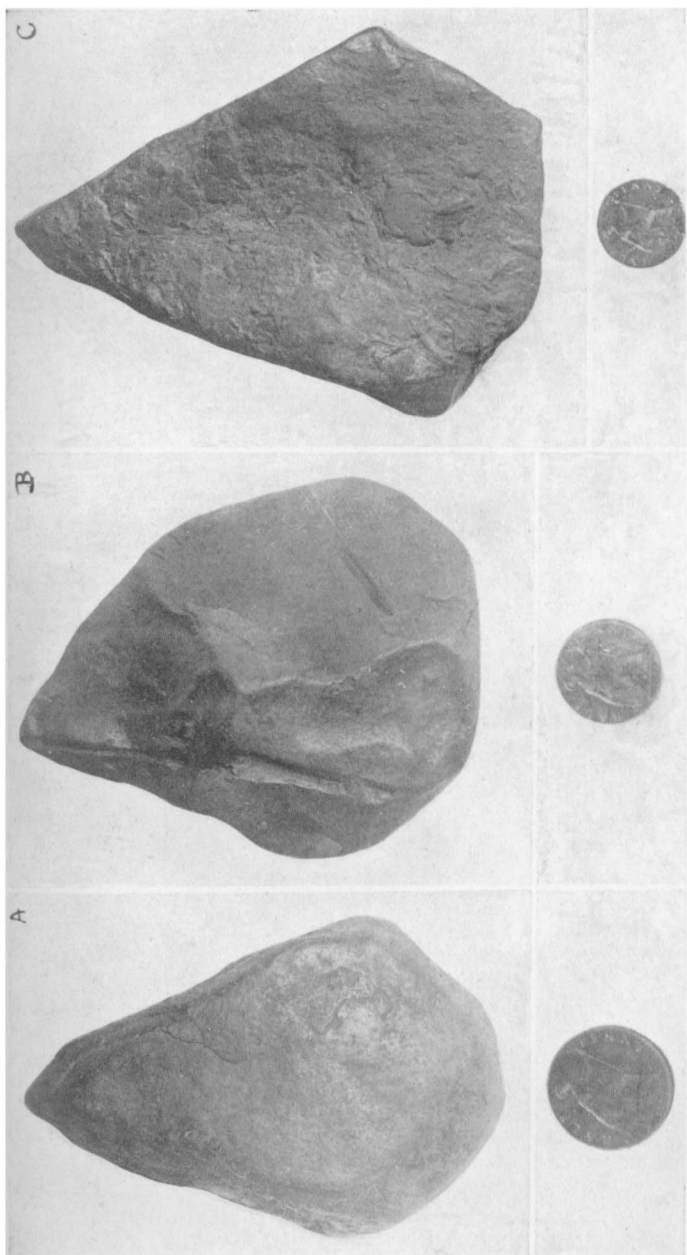
The next four coups-de-poing are chipped on one surface only, and that surface of each tool is figured on Plates XIX. and XX.

PLATE XIX.—This tool has been formed from a piece of fine-grained sandstone such as may be found in the neighbourhood of occurrence of the tools. It has been freely chipped and exhibits many *arêtes*. It is a large implement, being 6 ins. long, $4\frac{1}{2}$ ins. wide at the broadest part, and 2 ins. thick.

PLATE XX.—These coups-de-poing are ironstone implements and bear distinct evidence of chipping. This chipping is of so bold a character that it could not have been accomplished by force of the water even when the stream was in flood. The tool illustrated on Plate XX., Fig. 2, very closely resembles the palæolith found at Saltley. It is exactly the same in length and the *arêtes* of the two implements run in the same directions. The Saltley tool is pictured on p. 579 of the second edition of Evans's "Ancient Stone Implements of Great Britain."

The foregoing descriptions make it clear that the evidences of human design, manufacture, and usage evinced by these tools are both weighty and convincing. It is quite true, as stated by the late Sir John Evans, that the evidences of human workmanship upon

Plate XX.



non-flint implements are neither so conspicuous nor so easily recognised as those afforded by flint implements. From this it follows that no one can, by a perfunctory glance, or even by casual inspection, expect to detect the undoubted evidences of human fabrication and usage found upon the tools here described.

A CAVE SITE AT NETTLEBED, S. OXON.

BY A. E. PEAKE, M.R.C.S., L.R.C.P.

Read in London, February 23rd, 1915.

At the present time, when the old classification of Prehistoric implements is being considerably modified, and superficial "floors," "stations," and surface finds are no longer collectively referred to the Neolithic period, it will be of interest to record a site which has never been described, and which I shall hope to show in the present paper contains a number of forms which correspond with those of cave sites and which, moreover, have not hitherto been found on a Neolithic one. At the end of this paper some reasons are given in support of the above conclusions.

I have known Nettlebed for about 15 years, and for more than half that time the Common was a waste. Now a large portion of it, over which presumably the "floor" extended, is levelled for a recreation-ground. It will always be a matter of regret to me that it was only in 1913 I happened to examine the pit, as no doubt a large number of implements are permanently buried beneath the recreation-ground. The large sand-pit is some 300 yards in length. On the talus of this I picked up in 1913 a number of fresh-looking flakes with such sharp edges that I thought at first they were recent. They had, however, some lustre, and a closer examination of the section showed a quantity of chipped pieces forming a "floor," which here lay on the Eocene beds.

This side of the Common faces S., S.W., and W. The ground between the present line of the pit and the village is broken up and partly converted into a playing-field. From this area vast quantities of Eocene sand have been removed for building purposes—the face of the pit consequently continually receding. The ground beyond that line is covered with gorse, bracken, and trees, and has the appearance of virgin soil. Its unevenness shows it has never been ploughed: it is, moreover, common land. It lies at one of the highest points of the Chilterns at between 500 and 600 O.D. The opposite face of the Common slopes down in the direction of Henley, and is extensively worked for bricks in the London Clay. No trace of the floor appears on this side. The section where the "floor" appears was described in Geol. Mem., 1908, by Mr. H. J. Osborne White, F.G.S. At this point 100 ft. of Eocene beds rise above the chalk. The "floor" itself runs at a depth of from 1—3 ft. below the present surface, and the pieces are found lying in either a