

larger number of the encircling stones have the appearance of having been laid flat, one on the other, in the form of a wall. The stones are generally small (two to three feet in length), and the greatest diameter of the area, which is of irregular shape, is about thirty feet. The monument is called in the ordnance map "Druidical circle."

A second structure, resembling the former, marked on the map as "site of a tumulus," is at a few yards' distance south of the shooting-house on Burley Moor. Here more of the stones are set on edge, and outside of them is a bank of earth and stones, about five feet wide, against which they rest.

A third monument, described by Mr. Wardell, is at a distance of two-thirds of a mile west from this shooting-house; and is a small circle as compared with those I have described as existing in Brittany, the diameter being about forty-seven feet, and the highest stone three feet three inches above the ground. This structure is of a different character from the other two, and was probably destined to serve the same purposes, whatever they were, as those in Brittany. I should be inclined to look upon the two other circular inclosures as being the remains of dwellings, *i.e.*, of hut-circles.

ON THE BRIDLINGTON FLINT IMPLEMENTS. BY JOHN FFOOKS, ESQ.

IN a Paper which I read before your Society in 1866, I described the discovery which I had made at Bridlington, that there are four distinct classes of flint implements in that immediate neighbourhood. I have this year collected more implements, that had been thrown up by recent ploughings on the same fields, and I am glad to find that they confirm my previous conclusions in every particular; and they have explained to me very important points relating to the mode of warfare in those early days, as well as illustrated the social

habits of the people who used them. In 1866, I was so careful not to mention anything that there could be a doubt about, that I left many things for future investigation which I had then obtained a glimpse of, but could not confidently describe. I now take this opportunity to relate to your Society the facts which have become known to me by a careful examination of a large number of each kind of implement and weapon; associated as they have always been, in my mind, with the manner in which they were left on the fields; and this Paper will complete the history of the flint implements of Bridlington so far as I have been able to ascertain.

The people who used flint implements as the hardest substance that they could form into a weapon, or a tool, must have been very primitive inhabitants. Men could only have used wood, and bone, or soft stone, before flint; they did not necessarily use flint before other kinds of stone, and very probably they did not do so, as I have found all their weapons and implements made of soft stones of various kinds, but the soft stone implements have suffered far more than the flint ones from the ruthless effect of civilization. The farmers dislike to see stones lying about their fields, because it disfigures their finished appearance. Though I believe small stones, in dry seasons, prevent the rays of the sun absorbing the moisture from the roots of the growing crop, and that they really are beneficial; but no distinction has been made even between large and small stones, and thus all have been picked up and carted away; and I have often seen valuable implements being ground to dust on the roads from this cause.

The white flint appears to have been first used at Bridlington, probably because it was the most easy to manage, and the implements could be made larger than in grey flint. Most of the commonest implements may be found there

made of this flint, but it is very difficult to get them moderately well chipped. They appear generally to have been roughly broken into shape, as a mere novice would make them, and a collector will immediately discover that, if he is fastidious regarding the workmanship, he cannot find a specimen to please himself; but no archæologist would confine himself to beautiful forms, if he wishes to appreciate the evidence of flint implements.

The art of chipping was strictly progressive, as well as all other arts have been, commencing very rough and ill-formed, and finishing beautifully even and regular; and if we carefully examine the improvement in the method of manufacturing the implements that are left, and consider the many useful purposes for which they were adapted, we shall discover that there is abundance of proof that the three first tribes who inhabited Bridlington considerably advanced in civilization. I believe there is no doubt that they each manufactured their own implements, as I do not find the same pattern exactly followed in many instances; and those who understood the art of chipping flint sufficiently well to form perfect implements, were either not inclined to take the trouble to make them all well, or they found that for ordinary purposes it was not necessary to do so, for I have found at least fifty inferior implements to one superior, even of grey and red-coloured flint; and I wish everyone to understand that the people who used flint implements were contented with very inferior chipping to what they find in my collection, and probably in any other.

Whilst I was in the act of collecting them, I indulged freely my own speculations regarding the kind of lives these early people must have led. I have since gone amongst our own poor, and observed how they live. I have also partaken of the comforts of a log cabin, in the far West of America, and witnessed the contentment and rude happiness of settlers

in the newly-reclaimed wilderness ; and I have lived in the woods, far away from the sound of the busy world, and have seen the Red Indian in his wild abode : and after this experience, when I have gathered up the flint relics of the people who lived at Bridlington at least three thousand years ago, with nothing around them but a population of uncultivated people, such as may be met with along the frontiers of any newly-settled country, I have not been inclined to despise them, on the contrary, I know they may have been far less vicious than the pioneers of our modern civilized community ; and it is not probable that they had any spirituous liquor to madden their intellect, and spread desolation among their people. I know they were in the most primitive condition ; that their wants were few, and easily supplied. They built their log hut, which was their home. The land was all open to them to be cultivated, and well covered with wild animals. It only required the ingenuity to invent or form hooks, spears, and arrows, and tools to prepare the surface of the soil, and they could insure abundance of food ; and in the most primitive condition this was the *sine quâ non* of existence. Now, these relics show that they were capable of inventing or imitating these things for their use, and of accumulating inventions, and becoming thereby more masters of creation, and improved in their social condition. Their conventionalities restrained them, and were enforced without a doubt in the same manner as the native Americans and the Maories regulate their society. Their instincts were the same, and they reasoned as men. From this starting-point we may trace the evidence of their improvement by the implements they have left on the fields ; in the remains of their homes ; by their fortifications and enclosures for their cattle ; their stone circles for religious purposes ; as well as their tumuli, cromlechs, and memorial pillars ; but I have to confine myself to their flint implements.

WEAPONS.

At first, their chief weapons were a stone, which they threw; and a stick, which they fashioned into a club to strike with. Now it is remarkable that from these roots I have been able to trace a connecting link with the weapons of flint which are found at Bridlington; and it is chiefly to illustrate this fact that I have written this Paper, as it stamps the implements which are found there as the very earliest that can exist upon this island.

The sling-stone is familiar to every one; but we should not omit to remark, that when we compare the feeble force of a stone thrown from the hand, and the short distance it can be sent, with the power and distance which a stone can be hurled from a sling, the invention of the sling in the first ages of man was quite as important as the modern improvement of the rifle compared to the old flint gun, to this generation.

It is impossible to decide when the sling was invented, but we know it was used at a very early period in the East, and might have been brought to this island by the first emigrants. I find, however, that they did not confine themselves to the sling, as I have picked up very large stones which were undoubtedly used as weapons; too large and too rough for throwing from a sling, although they were used by the same persons who used sling-stones, as both kinds were left together, with other weapons, on the ground where they had been fighting.

The variety of patterns of sling-stones is very great, and represent the ingenuity and taste of the inventors. There are different sizes of circular balls of flint, and circles of flat flint, or flat on one side and elevated nearly to a point on the other; square flints of different sizes, with flat and uneven surfaces; and triangles of the same kind; and ovals, more

or less exactly chipped into form, and discs; and oblong pieces with flat or pointed ends, and some with several sharp projecting pointed edges, others with only one pointed end, nearly resembling the dart and the spear head.

The other primitive weapon was the stick, of any size. A mere straight stick would inflict punishment, but not be a very deadly weapon; but when the root was fashioned into a knob at the end of the stick, it became a more dangerous weapon, from its concentrated weight increasing the velocity and effect of a blow. The ingenuity of these people added to the power of this weapon, by substituting a knob of flint, which they fastened on by a thong of raw hide, that became tight and firm when it dried and contracted. This was, undoubtedly, a most formidable weapon, and the proof we have of how much they valued it for fighting is, that nearly every set of weapons left on the fields have one or more of these stone knobs among them. They were formed of various shapes, which gives them additional interest. The first which would suggest itself, is simply round, chipped over the surface, to admit the tightening of the thong which fastened it on to the stick.* A short neck was added, the size of the stick, to which it was fastened. At this point, a singular development of the form of the knob is presented to us. Some ingenious observer of natural objects must have remarked how easy it would be to convert the knob into an imitation of the head of a bird, by merely leaving a projecting point on one side; and having advanced so far, the bird's head, and the snake's head, became a prolific subject of imitation, but as the bird's beak is only slightly developed in a projecting point from a round knob, I do not think I should have detected the intention, if it had not been more fully expressed in other weapons, which in the most perfect

* It is presumed that a cup was formed in the natural knob, to receive the stone knob, or it could not have been tightly fixed.

specimens that I have found is nearly a fac-simile of a bird's beak, with a slight comb, and the head of a snake.

BIRD'S-BEAK AND SNAKE'S-HEAD FLINT WEAPONS.

A bird's-beak or snake's-head flint weapon, with numerous modifications, became a distinct weapon, which nearly every man appears to have carried in addition to his sling-stones. But very few persons were capable of chipping the imitation of a bird's head or snake's head out of a flint core accurately, and this pattern is consequently very scarce. The most common modification was a simple open triangle, or one angle of an open, square piece of flat flint, with the end that was intended to be attached to the handle left rough, the other end either pointed or left blunt, or squared. They also inserted a simple beak into a knobbed stick, which made the most formidable weapon. The beak was one or two inches long, thin, narrow, and sharp at the point, and excellent chipping is shown in this description of beak; on this account I consider it one of the latest improvements. I look upon this weapon as the best substitute for the sword which the aboriginal people possessed. The stone knob was heavy enough to kill with a single blow on the head, and the beak would inflict a deadly wound if it penetrated the skull or the breast.

SPEARS.

The spear is so well known which is made of steel that we are naturally inclined to presume it was one of the most common and effective weapons that the ancient Britons possessed; but I find this is far from having been the case. Its origin was, no doubt, a pointed shaft of wood, which subsequently was made a more dangerous weapon by substituting a point of flint, in precisely the same form as the arrow. But the first three tribes who inhabited the neighbourhood of Bridlington were by no means satisfied with the

mere point of flint, as I have found forty varieties of form, and many of them differing so widely that they may be called distinct weapons of the same class. The sharp point was the most general form, but some of them were made round at the point, or quite blunt, as if the mere force of the arm was relied upon to inflict a deadly wound. I have only found two varieties that have sharpened edges that would cut their way into the flesh. One form invented is clearly the original of the halbert of the feudal ages. It has a point and a projection on one side, which is a broad, sharp edge, to strike with, and being struck off a large core of flint, its weight would add considerably to the effect of a blow which might be given with it. The great number of different forms of the spear, as of every other kind of weapon, is a proof that each person made his own implements, and that the early Britons were exceedingly earnest and intent upon inventing new and effective weapons, and that they fully expected to bring the spear to such perfection as to take the place of some other weapon; but in this they failed, as it required the knowledge of metal to be accomplished, while the inferior workmanship exhibited in nearly all the specimens is a proof of the very early period of their manufacture, and as there are none better formed than those which I have found, within the district, the successors of the first tribes could not have used spears that were chipped in a different manner. Yet perfectly different specimens are found within three miles of their settlement, as I mentioned in my last Paper.

I have good reason to believe that spears were not more commonly used in war than arrows, and that neither of them were considered very efficient weapons for fighting with; still there is no doubt they were preferred by a few, who were probably dexterous in their use by constant practice, as they are both occasionally found among the relics of war;

but where there is one spear or arrow-head found, there is certainly a hundred beaks or knobs.

HAND-FIGHTING STONES.

Another weapon, which is not generally known, was pointed out to me by Mr. Edward Tindall, of Bridlington. It was used for holding in the hand to strike with. The one he showed to me was a native flint, with a long projecting point and an uneven head, which the fingers could fit over to tighten the grasp.

I have since found many different varieties of these fighting stones, cut expressly for the purpose—round ones with a pointed end; and flat flints, pointed; and others with a jagged edge; and long, round pieces of flint, pointed at one end; and some very rough nodules of flint, with the natural projections pointed. This weapon was in much esteem, I have no doubt, as it is constantly found with other weapons.*

HATCHETS.

Flint hatchets were very commonly used as weapons, when they were made small for the purpose; but I have never found large hatchets where there had been fighting, and the small hatchets are not carefully sharpened, so that it appears with this weapon, as with others which I have mentioned, the ancient Britons trusted more to the force of their blow upon the bare head, than to the keenness of the cutting edge.

THE DAGGER.

The dagger appears to have been a well-known weapon; but I should judge that it was a late invention, as those which I have found are exceedingly well cut—some about

* A bas-relief in Athens represents a fight with the Amazons, with hand-stones; and on Trajan's column, at Rome, the Roman Legions are represented as attacking an enemy who are defending themselves with hand-stones.

two inches long—are very thin, and sharp-edged. They were no doubt fastened to a bone blade and handle, in the same manner as the bronze blades that have been found in the tumuli indicate that they were made.

I have a flint knife that appears to have been fastened to a handle in the same manner, which leads me to suppose that the dagger is the offshoot from the knife, and that such knives were used as daggers.

The dagger is the only weapon that appears to have been intended by those early Britons for striking below the head, and we must conclude from this circumstance that their mode of fighting was always overhanded, and that they were unacquainted with any method of attack which was similar to our bayonet charge. They appear to me to have trusted to a hand-to-hand encounter, with their blunt spears, their small hatchets, their tomahawks, their knob-sticks, and bird's beaks, and hand-fighting stones, and to have reserved their sling-stones for pursuit. They never carried more than four kinds of weapons to fight with; and those who were the best provided with weapons I have found possessed a bird's beak, two small knobs, three or four sling-stones, and a hand-fighting stone; or varied in this way—a spear, an arrow, a knob-stick, and sling-stones.

A flint knob, or a bird's beak, or snake's head, and sling-stones, are almost invariably found with dress-fastenings, while the other weapons vary very much, according to the inferiority or apparent superiority of the person who possessed them. Some of the sets of weapons show that the person was provided with the best manufactured weapons that were made; others appear second-rate, but still good; while others appear not to have possessed any good weapons whatever; and the dress-fastenings which are found with them invariably correspond with the quality of the weapons that lay near them. So much is this the case that I have felt as

I picked them up that I must renounce my right of reflection before I could refuse to recognise the fact.

THE DART.

The dart is a very peculiar weapon, which I do not comprehend the use of. There are at least four different shapes. One of them is a mere triangular point of flint, varying from an inch to an inch and a half long; another two inches long and pointed at both ends, but one end is twice as long as the other, and as sharp as possible; the third, which I have in soft stone, was made flat on the under side, and triangular on the upper, with the front, or long end, pointed, and the other end contracted nearly to a point. I have the same shape in flint, much larger. These darts were generally made with very little attention to accuracy of shape, and some of them are exceedingly rough weapons. The fourth kind of dart was certainly intended to be thrown from the person in some manner, as it has been found in the skull of a buried warrior in a tumulus. It is the form of a leaf, thin, and sharp at the front edges.

I think it will strike those who hear this Paper read, that there is a peculiar originality and primitive simplicity in the weapons I have found, which were the only kind that the earliest people who inhabited the neighbourhood of Bridlington were acquainted with. I do not know that the inventions made any progress there; but it is evident that wherever the knowledge of such weapons was derived from, none could have been of earlier date in this new world. They consist of a mere stick and a stone, made effective and dangerous weapons by subsequent alterations and additions; and by the time these were improved to the utmost extent of their ingenuity, the inhabitants had learned to cut flint much more dexterously than they could at first; but when the straight method of chipping was only understood, the

Romans had not invaded Britain, nor had the people who introduced metal into this island arrived on this shore; and if there could have been a doubt of the reality of the tools (which I described to you in my former Paper) having been used by a people who lived before metal had been introduced, the primitive character of the weapons which I have since found removes every doubt of the fact, and I now expect that I shall be believed to have found distinct evidence of three tribes who inhabited Bridlington at an age at least as early as the erection of the stone circles and avenues at Avebury, and before the existence of Stonehenge.

HOUSEHOLD IMPLEMENTS.

From the evidence of the caves and the drift, flint knives may be considered to be the invention of our antediluvian forefathers; we cannot, therefore, feel surprised that wherever the descendants of Noah have existed in this new world, we find a great number of knives: but those which I have seen of antediluvian type may be classed under the head of flakes.

The aborigines at Bridlington exerted their inventive or imitative genius quite as much in these useful household implements, as they did in their weapons. I have found ten distinct patterns of knives there, including flakes, made of various sizes, for different purposes; some several inches long, and strong enough to divide the joints, or strip off the skin of an animal; and others exceedingly small, as if they could be of no service but for a woman to sever her thread with, as a substitute for scissors. Several of the blades of these knives do not materially differ, except in length, from those which are still made in steel. Some have a neck formed at the end of the blade, to tie a loose thong of leather round, to suspend to a girdle, to prevent their being lost. Even those which are known as flakes, because they are thin and were evidently struck off a core at one blow, were first intentionally

formed so that they would be suitable for knives by having slices cut triangularly off the upper side, to produce two cutting edges. We can easily imagine how useful these flint knives were to those early people, when we consider the various purposes for which we employ steel knives at the present time, for although they were incalculably inferior to sharp steel, yet to them they must have been a substitute for many tools which have been since invented.

Scrapers may be classed next to knives as the most useful and common implements which the aboriginal inhabitants of Bridlington employed for various purposes. They are both numerous and of a variety of sizes and shapes.

We may probably assign the first use of them to have been to clean raw skins, and to prepare them for clothing, as curriers do at the present time. They were also adapted for splitting willows, and for stripping off the bark, and cleaning them for wicker-work; and I am led to believe they were used for this purpose, from my having found a large size, and a very small size, in considerable numbers with wicker-workers' tools.

The thumb flint is a variety of scraper, as the modifications of its form is sufficient to prove. Some are quite round, others have a projecting side to fit the point of the thumb, and extends nearly its length, to give more resistance.

The most important use to which the scraper has ever been employed is, for giving an even, smooth surface to flat boards. To accomplish this, the aboriginal people invented a plane of flint, which was fixed to the front of a frame of wood; but this has since been changed by the modern application of the scraper, which is passed through a flat wooden frame, and fixed by a wedge. The original flint plane was made flat on the under surface, and elevated, more or less, on the upper, and formed straight on one side and obliquely on the other that it might scrape or cut as it was

forced forward. The cutting edge of the plane was formed by the sharp angle of the upper and under surfaces, which severed the rough surface of the wood by its oblique motion.

It is obvious that the ancient Britons could not get over the obstruction of constant fracture in a straight thin flint edge if forced forward over a rough surface; and, therefore, they adopted the angular oblique edge, which overcame the difficulty. I do not imagine that this implement could have been so efficient as the modern application of the square scraper; but it is evident that we are indebted entirely to the power of resistance of steel for the efficient work performed by the modern plane, and in point of scientific arrangement the oblique angular edge was not less ingenious than the subsequent application of the scraper, and the principle involved is the same in both implements.

CLOTHING.

It has been ascertained that a coarse texture of flaxen cloth had been fabricated at a very early period, and before the sheep had been imported into Britain; but the skin of the wolf was still worn by the people, with its warm fur next to their skin, to shield them from the inclement climate; and if skin clothing was commonly worn, it would be surprising if we could only find the implements with which the raw skin of the wild animals were prepared for use. I have found amongst the flint relics at Bridlington two sets of implements, that appear to me to have been employed in the manufacture of skin clothing. One of these is a variety of sharp-pointed flints, which I consider were used for making small holes in the skins, to pass a thread of some kind through, to fasten the skins and different parts of the garments together. The other implements were apparently formed to press the seams after they were sewn, and I have

found these two kinds of implements together, as if they had been used by the same person.

The sharp points are in some instances nothing more than carefully cut points of flint, about an inch long; others are short points projecting from pieces of flint of no definite form, whilst others are projecting points from the centre, or at one angle of a square piece of flint; but all indicate by their form that the point has been the only object for which these implements were made, and as it would require such a point to make holes in skins to pass a thread of any kind through them, I think the most natural use for which these points could have been applied is the one that I have assigned.

The seam pressers are made in a very definite shape. They are all flat pieces of flint on the under surface, and rounded on the upper; and there is a handle to most of them, which is formed by chipping the flint away, to leave a neck, dividing the handle from the body of the tool. I have a great many specimens of them, with very little variation of form.

FISHING.

The fish that abounded in Bridlington Bay must always have been a good source of supply of food for the inhabitants, and it is natural that various means should have been adopted for catching them. I have found many fishing-hooks of different sizes, but the shape of them is not exactly similar: some are very rough specimens, but when covered by a bait they were probably found efficient for the purpose; others are carefully cut, and appear to be as well adapted for holding large fish as any that are manufactured of fine steel. Great skill in the art of chipping flint into form is exhibited in the curved and rounded hooks, but to avoid the difficulty that most persons must have experienced to produce a perfect shape, a method of cutting the flint at first flat, and then

chipping out the hollow for the hook was adopted, which answered equally well for catching some kinds of fish; but to land the great sturgeon, cod-fish, and ling, must have required the best flint implement they could manufacture.

I have found also a great many spear-points, of a peculiar shape, that appear more appropriate for spearing fish than for the purpose of war, and I have little doubt that the fishermen in those days resorted to this means of securing some of the flat fish that lay on the sand, and those which will not take bait on a hook.

Added to these two methods of catching fish, there is little doubt that they made nets.

TOOLS.

In describing the different sets of tools which were used for various purposes, in my last Paper, I did not explain the variations of form which those tools had undergone during the period that the first tribes were inhabiting Bridlington; but I should not convey a correct idea of the active state of their minds in that very early age, and how much we inherit from them, if I left this untouched.

Amongst some of the best known implements in museums are the soft stone hatchets, which, from their size and excellent shape and finished form, have always been preserved by the ploughmen, and appreciated by the public. Real stone hatchets of this kind are, some of them, beautifully formed and finished, but they are all of them of a much later date than the flint implements which are found at Bridlington, as they did not exist before the grinding stone had been invented, as their surface bears sufficient evidence.

I have found a very ancient hatchet, that discloses its age by its form as well as its finish; it is quite distinct from those which are found outside the boundary of my search, from being made sharp-edged at the side, instead of at the end; and it is slightly curved at one end of the cutting edge.

Hatchets made of flint are very various in shape and size. I have already mentioned a small-sized hatchet which was used in fighting; there are other small hatchets which were evidently made for cutting off small willow sticks for wicker-work, and a specially small kind, carefully made, which appears to have been intended to sever the ends of the willows after the basket, or other object of their art, was put together; the cutting edge of these is not more than an inch wide. Some hatchets are large sized and nearer our modern shape, sharp at the edge, and heavy enough to cut off a large piece of wood.

The hatchet which I found with the carpenter's tools is a thin flake, chipped over the upper side, and sharpened at the edge, with a shank formed by cutting out a right angle with the blade to fasten the handle on to. Another kind of hatchet is similar to a wedge, which probably was the origin of the invention, as flint readily splits into the form of a wedge, with an exceedingly sharp cutting edge.

CHISELS.

The primitive shape of the chisel was very different to the form that was afterwards employed. I described one that I found partly rubbed down to sharpen the edge, and cut an exact chisel shape, as we now see chisels made of iron which are used by stone masons; but at the earliest period, when flint was the material of which they were made, they were only intended to chip wood with.

The first shape of the chisel was, undoubtedly, a rather long wedge. This form was varied by cutting two slices of flint off a core, in a slightly triangular pointed form, and then severing the chisel complete from the block, which left a broad head to strike upon, and a sharp edge, an inch wide, to chip with. This kind is found of various sizes.

I have found numerous small chisels, an inch to an inch

and a half long, cut moderately thin, carefully chipped into shape; they are miniatures of the long chisel, and appear to have been fitted into handles. This pattern was made longer, to hold in the hand without a handle, when the head was rounded; but before the true flat-sided chisel pattern was adopted, it was the custom to cut the whole length on one side nearly flat, and the other angular.

I have likewise some chisels three inches long, formed by being chipped off on both sides to form the edge, which is about an inch wide, with flat heads, but by no means carefully made.

In after ages, stone chisels went through various modifications, and all of them were ground down to a cutting edge, instead of being chipped. They then made some of an oval form, gradually reduced in size towards the striking end; while they made others long and narrow, and of an uniform width throughout, with triangular slices cut off their face.

Others were nearly flat, with rounded sides, and contracted throughout their length nearly to a point. Chisels of this description must have been continued in use down to the introduction of steel, and probably later, but none of them are found in the immediate neighbourhood of Bridlington.

There was another kind of chisel in very early use among the ancient inhabitants, made expressly for cutting out hollow surfaces, such as bowls, from solid pieces of wood. I have found them made of a curved piece of flint with a flat head and a sharp edge; and, likewise, made of a straight piece of flint chipped off at an acute angle at the back of the implement, with a pointed head to fit into a handle; and another, hollowed in a gouge shape, with a point to fit into a handle.

DRILLS.

The drill appears to me to have been gradually developed, until it assumed the form of the auger. It must have

originated in a sharp, long point of flint, of which I have found numerous examples. Then sharp edges were found of great importance, and they were formed by angular sharp sides being chipped the whole length of the long point of flint.

Another very distinct shape was given by chipping notches out on both sides of a round point of flat flint, to form a separate head, and bevelling both sides of this head in opposite directions.

Others are formed of a triangular sharp point, with another point at the reverse end to fit into a handle; and I have found natural flint screws sharpened to form drills, and others chipped crossway to make the screw.

Long points of flint, chipped carefully into form, were very much used, probably for cutting out holes that were too large to be drilled out, for mortising, or for punching out old wooden pegs.

I have a great many other tools, of peculiarly good form, but they are not represented by modern tools made of metal, and the use of them is consequently unknown; they were probably only useful during the period that flint was the hardest substance employed for mechanical instruments, and to persons in their primitive condition; but, notwithstanding our ignorance of their intention, the fact that they exist with so many which we do know the use of, conveys a most convincing proof that the people who made them and used them were active, intelligent, and persevering, and continually improving their resources and condition of life, and though their power of applying their genius was limited, from not having discovered the method of using metal, still whilst flint was in fashion, it was no doubt sufficient for their requirements; and we may conclude that the range of their invention was more strictly confined by their moderate desires, and the number of their population, than by the

degree of refinement which they had attained; for how can we call a people destitute of refinement, and of the comforts and conveniences of life, who joined in communities, and built their huts in the regular order of streets? who were acquainted with the uses of fire, which we know by their having made bread, and why should we suppose that their cooking was confined to this act alone? and who manufactured such a variety of weapons, both for the defence of what they considered their wealth, and to provide themselves with the best means to gratify their appetite for a variety of food—arrows for birds and the smaller game, darts and sling-stones for the larger animals, and hooks and spears for catching fish, and from the skins of animals fabricated clothing of the most comfortable description?

We may not be able to state the degree of refinement of their manners, nor describe their institutions of government, but we certainly can conjecture, from the nature of the relics they have left, of substantial, and even gigantic proportions, as well as minute flint implements, that they were no mean savages destitute of reason and depending upon their instincts for subsistence. What can be more characteristic of comfort, and a certain degree of refinement, than the knowledge of manufacturing wicker-work? and so excellently finished that the polite Romans, when they came as conquerors to the island, coveted the possession of their works of art and sent them to their Imperial city. And of what use would such tools as the flint saw, the chisel, the drill, the hatchet, the hammer, and the plane, have been to them if they had been mere savages? Depend upon it these were not playthings, or inventions of fancy, which wiser men than they have converted into useful implements. They are surviving records of the personal vigour and intelligent action of a people who possessed determination to promote their own happiness by the advancement of science and art.

And if their mechanical tools and farming implements are indications of their assiduous labour, are they not a direct proof that their line of improvement was in the same direction which their successors advanced, and which we are following at the present time? But probably the evidence of their appreciation of personal ornaments, which were elegant in design, assisted by a variation of colour and careful execution, although they were merely made of flint, is the strongest proof that they had attained a degree of social improvement which placed all human happiness within their reach; for illiterate savages are not manufacturers of works of art, but for ever remain content with natural productions to decorate their persons, and no people would commence with the beautiful and ascend to the useful arts, but, on the contrary, their first attention would be turned to the means of existence, and be followed by the gratification of taste.

DRESS ORNAMENTS.

I described the existence of dress-fastenings in my last Paper, but I went no farther at that time, because my collection of ornaments was by no means perfect. I have been fortunate in finding many more relics of this kind during this season. They consist of the dress-fastenings of various kinds, and of several patterns of brooches and breast-pins, and larger forms of worked flints, which were worn as ornaments. One of the commonest patterns of brooches is formed of a piece of flint, straight across the upper part, from two to three inches long, with a pointed or round projection nearly in the centre below, leaving the two ends extended for fastening to the dress; one of these ends being slightly pointed and longer than the other. There are large and small sizes of this pattern.

Another represents an obtuse angle of flint, half an inch wide, and a variety of other sizes.

Others are circular and triangular flints, which were set in some other substance, probably bone; and some have three, and some four equal projections from the centre.

Others form a large angular point of flint, with a lesser projecting point above it, and others are cut the ordinary lozenge shape.

A very pretty pattern has a curved neck, with a larger triangular-pointed head, which in the most perfect specimen represents a snake's head, very distinctly cut, but the workmanship degenerates in the ordinary examples into a mere curved piece of flint, with a small projecting shank for the neck.

There are also straight patterns of flint brooches, chipped out at equal distances, to make the line irregular, and some are cut in the form of a prism, and others are curved throughout the whole length, and straight pieces are left larger in the centre than at the extremities.

Dress pins are cut various lengths, either straight or curved at the upper end, while some have a knob rudely formed. There are two patterns that were much admired, if I may judge from their frequent use, one of them was a short pin, with a flat head, cut round, an inch in diameter. The other is a straight pin, with a cross head, of larger size.

The brooches and pins are almost entirely cut out of grey flint, which illustrates my idea that the people who used the grey flint were the same race of people who have shown such artistic skill in France, Italy, and Greece, from the earliest ages. That they were a distinct race of men, I have shown by their always having made their implements of this flint, and of a smaller size, compared with the red and the white, and invariably neater, and exhibiting great taste in the execution; at the same time expressing feebleness and a want of physical power, which the red flint implements so strongly develop. In expressing myself thus, I am follow-

ing my observation, that physical power and the energy of a strong will are always made evident in the grosser forms of whatever implements are invented and used by a people, and that taste and ingenuity and patient painstaking labour is characteristic of a more effeminate and delicate organization ; and that this difference of character has been distinctly developed in the races who have taken the lead in the world.

It would occupy too much time and space to enter into the details of this subject in this Paper, but I may mention the striking difference of features which identify two such races of people who have always inhabited Europe, and who have been separated as much by their natural peculiarities as by the boundary lines of their territory.

Herodotus gives us the names of two distinct divisions of people, but we cannot positively separate them by the light of his description. He says, "The Celts are beyond the pillars of Hercules, bordering on the territories of the Cynesians," and "inhabit the remotest parts of Europe, towards the west," and that "the Ister (Danube) has its source in their territory." We can only understand by this description, that the Celts were the people who dwelt close to the northern boundary of France in his day, and this people was known afterwards to the Romans as the Germans. They are, and always have been, a fair-complexioned, light-haired, robust family, and they claim to have possessed that territory from the remotest ages. The Cynesians were, in the lifetime of Herodotus, the inhabitants of France, but what race they were we can only conjecture, though the conjecture may be based upon very striking facts. France was named Gaul by the Romans, because the Gauls possessed it, and this is nearly all we know from that source about them ; but we must remember the ancient authors did not attend to the previous history of other people, particularly if they were their rivals.

Strabo, however, assists us by a word: he says, in describing the Britons, that "their stature was taller than the Gauls, and their hair less red." Now we cannot believe that the people who inhabited France were red-haired from all time, seeing as we do that they have since become black-haired, and the size of these two races are in every respect the antipodes of the other. Mr. Greenwell adds a link to this chain, by having found a plaited tress of hair in a vase buried in a tumulus at Pickering, which was auburn, or more German than the red. Now the Gauls can be traced from India to England, and the Calmucks are said to be red-haired men to this day. They were conquerors, who overran Asia and Europe, and settled in France, because the land extended no farther, but they were not the Cynesians. There has always been the race of people in Europe who have the distinguishing characteristic of a clear white complexion and jet black hair, rather small in stature, with slight muscular development; and the people with this coloured hair is still prevailing in France, Italy, and Greece. How can we account for this, unless it is the consequence of the black-haired race having been the aboriginal people who occupied that territory, as the light-haired people occupied Germany, and that their conquerors did not bring wives with them, but from preference took the black-haired women they found in the country, as the red-haired men have always done since the days of Acis and Galatea, and in a few generations the original stock prevailed? This has been the fate of invading armies in general, where they have not expelled the first inhabitants. And what has been the case in the British Islands? There are well-known black-haired and red-haired races in England, Wales, and Scotland, who are supposed to have been driven to the extremities of the island by the conquering German and Scandinavian races, who were light-haired or brown. Those who were expelled from the interior

were the descendants of the original black-haired and red-haired races, and those who inhabit their territory now are the light-haired races (speaking only with reference to the prevailing colours). The blending of these clearly distinguishable races has created much diversity of colour in the hair, but the broad fact remains; and if we look back to the earliest period, before any intermarriage had produced the variations which now prevail, it is easy to comprehend that where the light and black-haired races were following each other, and settling side by side,—as they clearly did at Bridlington, when flint was the only substance which was known for making the implements they used,—their habits and their tastes were different, as they ever have been on the Continent, where they came from; and from this cause we find distinct classes of flint implements where they lived.

At the conclusion of the Meeting, the members of the Society and the *élite* of the neighbourhood were sumptuously entertained at a banquet, given at the Red Lion Hotel, by the Mayor and Corporation of Pontefract, and at which about eighty ladies and gentlemen sat down. His Worship presiding.