

III.

NOTICE OF A CIST, WITH AN URN AND STRIKE-LIGHT OF FLINT AND PYRITES, AT FLOWERBURN, ROSS-SHIRE. BY MAJOR COLIN MACKENZIE, F.S.A. Scot.

On the 7th of November 1883, while staying at Flowerburn House, in the Black Isle, Ross-shire, I heard that when trenching a piece of waste ground during the previous spring, a small cist had been discovered, and that it lay almost exactly at the spot where an urn had been previously dug up. This urn had been destroyed by its careless finders, and only the bottom of it had been preserved, and given to me some two years before. I was informed that a large stone happening to come in contact with the plough, it had been determined to remove it, when it was found to form the capstone of a small cist. After a rough examination, the cist was filled in again, having been found by the labourers employed to contain nothing but decayed bones.

On the morning of the 8th, accompanied by the keeper, I proceeded in search of the cist. I first examined the capstone, which lay near the edge of a small wood bordering one side of the field in which the cist was situated. It was a rude whin boulder, somewhat in the shape of an irregular rhomb, the edges and angularities being smooth and rounded through weather-wearing. Its extreme superficial measurement was 2 feet by 1 foot 10 inches, its thickness being about 8 inches.

I then sent for the tenant of the ground, to point out the spot where the cist itself was situated. He pointed to a small hollow lying on one side of what seemed to be a natural mound, and here two or three strokes of the pick succeeded in finding a resisting mass a little way below the surface. Its position was upon an inclined surface, and, through the scanty soil, the rock occasionally cropped out. On the N. and W. sides the declivity of the mound was gentle, running into the upper portion of the slope of the ground, while on the E., and particularly on the S. (where the road had been cut through the edge of it), it was more abrupt. The highest point of the mound was the highest

point in that part of the field. The measurements which I took showed the shorter axis of the mound, E.N.E. by W.S.W., to be 109 feet, and the longer, N.N.W. by S.S.E., to be 119 feet. The centre of the cist about to be described lay nearly W.S.W. of the highest point of the mound, distant about 20 feet. The mound had at one time borne a small natural plantation of birch and fir, but judging by the remains and the poorness of the soil, the trees must have been of but small size, sharing the scanty nourishment obtainable with whins and junipers.

Having succeeded in finding the site of the cist, we began with great care to remove the superincumbent earth. This was in no part very deep. Upon the natural trap rock rested about 3 feet of hard yellow sand, and above that another foot or so of black mould, giving a total depth of 4 feet. We first removed the soil from an area of some 8 feet square. We found the resistance we had encountered to be caused by a number of small whin boulders, mixed with small slabs of red sandstone from 6 inches to 1 foot in length, 4 inches to 6 inches in width, and 1 inch to $1\frac{1}{2}$ inches in thickness. The sandstone is natural to the district, the weather-worn whinstones, which are turned up in all directions in the fields, seem to have been carried thither by glacial or other action. The stones in question had formed the top course of the cist, which had been built like a sunk fence, the interstices being filled in with small stones and hard sand. In removing the capstone previously, this course had been destroyed by the labourers, and, when it was determined to shut up the cist, these stones had been merely heaped on the top and covered over. We carefully lifted out the stones, and uncovered the second course of the cist. The interior was found to be pear-shaped, its longest axis E. by W. being 1 foot 10 inches, and its shortest N. by S., 1 foot 6 inches. It was well and substantially built, the top width of the second course varying from 1 foot to 1 foot 6 inches. The interior was found to contain black mould and yellow sand, mixed at the top through previous disturbance, but the bottom portion contained sand only.

Both mould and sand contained osseous remains, the portions in the mould being very fragmentary, and those in the sand larger, though very few recognisable pieces, except portions of the skull, were noticed. With

the bones were a number of small pieces of charcoal. Proceeding further, the bottom of the cist was found to consist of hard yellow sand which had never been disturbed, and which contained no bones. From the top of the second course to the bottom of the cist was 1 foot 9 inches, and I conjecture the cist, when perfect, to have been about 2 feet 6 inches deep. The bottom portion of the wall of the cist was formed by eight flat stones of irregular height, from 1 foot to 1 foot 6 inches high, and 5 to 7 inches broad, placed upright on edge, and after these had been built round outside, and their heights equalised by the addition of smaller stones, the two courses, already alluded to, had been built upon them, the remains deposited within, and the capstone placed over the whole. The contents of the cist seemed to have been but little disturbed, and nothing save the soil, charcoal, and bones were found within.

We now began excavating a trench all round the cist, about 2 feet wide. The cist was found to have been constructed, as far as we could judge, in the hard sand alone. This outer sand contained no remains and we now proceeded to remove the black mould all round for some little distance, and to sift it with great care. Portions of compact black mould, containing many minute fragments of bone, were first found; and it seemed that this, from its resemblance to the mould containing bones within the cist, had been removed along with the top course of stone. Colour was further lent to this by finding, along with this mould, several small sandstone slabs, similar to those used in the construction of the second course of the cist.

We now began to widen the area of our operations. On examining the mould taken from a spot about a yard to N.W. of the cist a piece of rude pottery, accompanied by pieces of bone¹ and charcoal, was found. A diligent search revealed several other pieces, apparently forming the lip and a portion of the side of a rude baked clay urn, the pottery being reddish coloured outside, but black in the fracture. No portion of a bottom was found, and I am decidedly of opinion that these pieces of pottery formed part of the urn which had been discovered two or three

¹ One piece of bone resembled a finger or toe joint. A friend has suggested that it might have formed a portion of the *fibula*.

years previously near this spot, and which was broken at the time by an ignorant labourer. Having submitted the bottom of the urn, as well as the portions of the lip found by me, to Dr Joseph Anderson, he concurs in the opinion I had formed, and says :—"The urn has been a large and wide vessel, but not exceptionally so. Unfortunately, we have not enough of the pieces to discover the height and diameter at the mouth." The missing pieces may probably be accounted for, as having been taken away attached to the bottom and afterwards broken off and lost, the material being very brittle.

I am convinced that this urn was not originally within the cist. When it was first discovered, no mention was made of the cist. And again, when the cist was discovered in the process of trenching early in 1883, it appeared never to have been disturbed before, and those who were present are positive that no urn was noticed. The urn therefore must have been deposited in the soil outside the cist, and probably without any protecting structure. Such a burial is by no means uncommon in the British Islands and Scandinavia, and wherever large tumuli exist, it is customary, as all archæologists know, to find enclosed in them burials of different periods, both crematory and non-crematory.¹

I have already mentioned that the mould and sand within the cist contained very many fragments of bones and charcoal, but nothing further was found which could positively be connected with the cist-burial, which was manifestly one by cremation, judging, not by the charcoal alone, but also by the condition of the bones and the size of the cist, which could not have contained a skeleton, even in a contracted posture. I have also stated that some detached pieces of bone were found in the soil outside the cist, with pieces of charcoal and portions of an urn; and, taking everything into consideration, I conclude that these point to cremated remains having been originally deposited within the urn, as the pieces of bone differ in size from the very fragmentary bones found in the black mould of the cist, and as the larger pieces of bone found imbedded in the sand of the cist had never been disturbed till removed by me.

¹ Greenwell, *British Barrows*, p. 12 *et seq.*; L. Jewitt, *Gravemounds, and their Contents*, p. 7 *et seq.*; O. Montelius, *La Suède Préhistorique*, pp. 75, 76.

Want of time prevented a further exploration of the mound, which might have resulted in the revelation of other sepultures. But I am of opinion that our exploration proved that two separate burials were represented, one in a cist, the other in an unprotected urn, but both cremated.

Whilst gathering together the broken pieces of the urn, a round-nosed flint flake or scraper¹ (fig. 1), chipped at the edges, was found amongst the débris, and proved to have a bluish tinge, as if it had been subjected to the action of fire. Close beside it there was found a round piece of iron pyrites, flat on one side—in shape somewhat like the half of an egg, divided lengthways, only smaller (see fig. 1). Dr Joseph Anderson

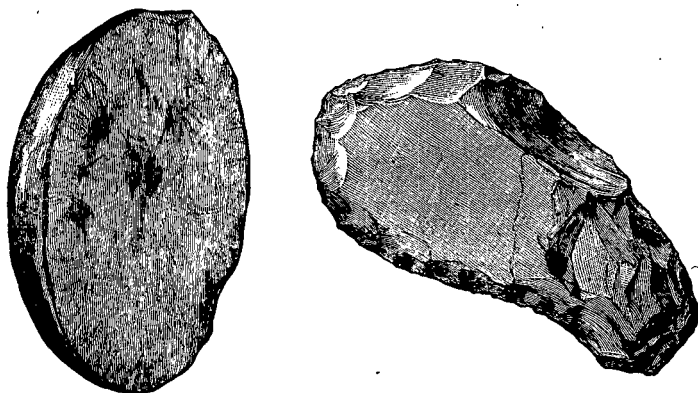


Fig. 1. Nodule of Pyrites and Scraper of Flint, found at Flowerburn.

at once recognised this as forming, along with the solitary flint, nothing less than a prehistoric “strike-light” apparatus, only one example of which is recorded, I believe, as having been found in Scotland,² and

¹ No flints are noticeable in that part of Ross-shire, and both Mr Davidson of Cantray, and Dr Mackenzie of Fortrose (to whom I showed it), as well as myself, were impressed with the importance of this flint scraper. Every effort was made, and the closest search instituted, in the hope of coming across other scrapers or flakes of flint, but without success; and I am perfectly satisfied that the implement in question was the only one present.

² At Tyneside Farm, near Minto, Roxburghshire, by Lord Rosehill; Greenwell, *British Barrows*, p. 266, note, and *Proc. Soc. Ant. Scot.*, vol. viii. p. 137.

but few elsewhere. As the flint and pyrites were found on the same spot as the fragments of urn, it is most probable that they formed part of the same burial. It is possible even that they were about the person of the corpse when cremated, and colour is lent to this supposition by the fact that the flint bears traces of the action of fire. As to whether the "strike-light" was contained in the urn, that is another question, on which in the circumstances no sufficient evidence is forthcoming.

As the flint and pyrites (sulphuret of iron), now before the meeting, is the first example of a prehistoric "strike-light" which has been brought before this Society, I may be pardoned if I make some remarks relative to "strike-lights" in general, with a view to render clearer, if possible, the antecedents of this one in particular. The first point is to prove that these two objects do actually form a "strike-light," or to answer Mr Evans' pertinent question—"We have instances of the association of lumps of iron pyrites with circular-ended flint instruments in ancient interments. Can they have been in use together for producing fire?"¹

We will first consider the flints. Mr Evans has remarked that nearly similar forms of flint flake or scraper have served undoubtedly dissimilar purposes. For besides those which are believed to have been used for cleaning hides, &c., "we find some of these instruments with the edge battered and bruised to such an extent that it can hardly have been the result of scraping in the ordinary sense of the word."² He argues that as fire must have been one of the primary necessities of prehistoric man, we must consider whether he was in possession of any method for generating fire, other than that of the slow and laborious process of friction; and he cites the example of two widely-distant races, the Esquimaux and Terra-del-Fuegians, who obtain fire by striking sparks into a ball of fungus, and whirling it round till it bursts into flame. He further remarks:—

"There is yet another argument. In many instances these circular-ended flints, when found upon the surface, have a comparatively fresh and unweathered appearance; and, what is more, have the chipped part stained by iron mould. In some cases there are particles of iron, in an oxidised condition,

¹ Evans, *Ancient Stone Implements*, p. 282.

² *Ibid.*, p. 281.

still adherent. Such iron marks, especially on flint which has weathered white, may, and indeed commonly do, arise from the passage of harrows and other agricultural implements, and of horses shod with iron, over the fields ; but did the marks arise merely from this cause, it appears hardly probable that in any instance they should be confined to the chipped edge, and not occur on other parts of the flint."¹

And he finally clinches his argument by the results of his own experiments. For he finds that by working "a flint and a steel or *briquet* together, much the same bruising of the edge is produced as that apparent on some of the old 'scrapers,'" and he comes, "therefore, to the conclusion that a certain portion of these instruments [flint flakes] were in use, not for scraping hides like the others, but for scraping iron pyrites, and not improbably, in later days, even iron and steel for procuring fire."²

We now turn to the iron pyrites, and ask, Is it possible that the nodules of this substance, found in connection with chipped flint flakes, can have been in use for any other purpose than that of obtaining fire ?

Mr Evans has remarked upon the presumed use of iron pyrites for obtaining a red pigment, that—

"It is hard to imagine any other purpose for which pyrites could be scraped by flint except for producing fire. It cannot have been merely for the purpose of producing a paint or colour, as though the outer crust of a nodule of pyrites might, if ground, give a dull red pigment, yet the inner freshly broken face would not do so ; and, if it would, the colour would be more readily procured by grinding on a flat stone, than by scraping."³

Canon Greenwell, writing on the same subject, also observes—

"It is true that certain ores of iron have long been employed by savage tribes as a source from which to obtain a red pigment, whether for their own personal adornment or for colouring articles of dress and implements, but the particular ore to which the nodules [of iron pyrites] under notice belong is not adapted for producing any pigment when in a fresh and unoxidised condition ; neither are the appearances of wear upon the pyrites those that would have resulted from a scraping process necessary in the production of such a substance. There certainly are the marks of what may perhaps be called scraping along the middle of the fractured surface of the nodules ; but that is just the part

¹ Evans, *Stone Implements*, p. 283.

² *Ibid.*, p. 283.

³ Evans, *Stone Implements*, p. 285.

where the ore would be quite fresh and unoxidised, and therefore the least available for use in providing a pigment."¹

We may therefore, at once, and safely, assume that none of the nodules of pyrites found in connection with flints were in use for any other purpose than that of strike-lights; and that the flint and pyrites, now before the meeting, form together a veritable strike-light, an assumption which other discoveries, to be subsequently referred to, will fully substantiate. A nodule of pyrites, with a deep scoring upon it, found in one of the Belgian bone caves—the *Trou de Chaleux*—has been engraved by Dr E. Dupont, who regards it as having been used as a fire-producing agent.² This takes us back to an era contemporaneous with that of our own Kent's Cavern at Torquay, in which, however, no remains of pyrites of iron have yet been discovered.

Several instances of the occurrence of pyrites and flint in British burials are on record, while "part of a nodule of pyrites may be cited which had apparently been thus used, and was found in the Lake-dwelling of Robenhausen."³ Engelhardt found pieces of pyrites, apparently having been used as fire-producers, at Thorsbjerg, "with iron and other antiquities of about the fourth century of our era. He says that steels for striking fire are not at present known as belonging to the Early Iron Age of Denmark."⁴ The Abbé Cochet describes some of the flints found with Merovingian interments [from the middle of the fifth to the middle of the eighth century], as resembling gun-flints. One of these was apparently carried at the waist, in a purse with money and other necessaries.⁵ Passing to more modern times, we know that pyrites was in use as a spark-producer some two hundred years ago. About the year 1530, the match-lock was superseded in England by the wheel-

¹ Greenwell, *Brit. Bar.*, p. 267.

² The flint that produced the scoring appears to have had a pointed rather than a rounded end. Possibly the wearing away of the ends of certain flakes, for which it has been difficult to account, may be due to their having been used in this manner for striking a light.—Evans, *Stone Implements*, p. 286; Dupont, *Les Car. de la Belgique*, ii. pl. ix. 2.

³ Evans, *Stone Implements*, p. 14; Morlot, in *Rev. Arch.* (1862), v. 216.

⁴ *Ibid.*, p. 14, note; Engelhardt, *Thorsbjerg Mosefund*, p. 65, Eng. ed.

⁵ *Ibid.*, p. 382; Cochet, *Normandie Souterraine*, p. 258.

lock, which had been invented in Nuremberg seventeen years before. The wheel-lock remained in partial use as late as the reign of Charles II. It "consisted of a steel wheel rasped at the edge, which protruded into the priming pan; a strong spring; and a cock into which was fixed a piece of pyrites (sulphuret of iron). . . . When it was required to discharge the gun, the lock was wound up by means of a key or spanner which fitted on the axle or spindle, and the cock was let down to the priming pan, the pyrites resting on the wheel; on the trigger being pressed the wheel was released and put in motion, when sparks were emitted which set fire to the powder in the pan."¹ This was probably the last occasion when pyrites, as a fire-producer, was employed for any purpose of practical utility.²

Mr Evans is of opinion that the late use of pyrites "affords strong evidence of iron and steel having been unknown to the makers of flint implements;"³ and he has further more shrewdly observed, that "the lower beds of our English chalk are prolific of pyrites, though not to the same extent as the upper beds are of flint; and it is not impossible that the use of a hammer-stone of pyrites, in order to form some instrument of flint, gave rise to the discovery of that method of producing fire."⁴ In view of this prolificacy, it may prove a matter of surprise that no more than eleven cases (including the one now before the Society) are on record, in which pyrites and flint have been found in ancient British graves, under such circumstances as to warrant their being classed as strike-lights. Flint scrapers, which, however, are almost indestructible, are certainly found in many parts of the country, notably in places which had once been centres for the production of worked flints.⁵

¹ School of Musketry, *Text-Book*, p. 94.

² There is, however, one little machine, still in use, as a cigar-lighter, which reminds me forcibly of the wheel-lock. It consists of a small silver or steel box, containing a "rat's tail," or cotton match, which is ignited from a spark obtained by a steel rasp working against an emery wheel which is made to revolve.

³ Evans, "*Stone Implements*," p. 14, note.

⁴ *Ibid.*, p. 281.

⁵ At Cisbury Hill, near Worthing, Sussex, the author has collected hundreds of scrapers and chips, and here the ancient shafts or workings were explored some years ago, under the auspices of the trustees of the British Museum, but with little result.

But though flints may be numerous, it is not so with nodules of pyrites. This, however, may be partially due to the fact which Evans remarks, that "when exposed upon or near the surface of the ground, pyrites is very liable to decomposition, and even if occurring with ancient interments it would be very likely to be disregarded."¹

This latter is the real, or at least the chief, point of remark. The flints and nodules of pyrites found in graves do not seem to have been conclusively regarded as strike-lights, until the investigations of Evans and the discoveries of Greenwell brought them into prominent notice, and practically demonstrated them to be so. Many, therefore, have in all probability been cast aside unrecognised and unrecorded.

It may, therefore, be of some importance to notice the instances in which pyrites and flint have been found in British graves. Evans states that "nodules of pyrites occurred in such numbers in a barrow at Broad Down, near Honiton, as to suggest the idea of their having been placed there designedly, but none of them are described as abraded." It was in the year 1844 that the late Mr Thomas Bateman, when opening a barrow in Elton Moor, Derbyshire, found near the head of a skeleton "a piece of spherical iron pyrites, now for the first time noticed as being occasionally found with other relics in the British tumuli." Along with the same skeleton was found a "drinking-cup" [*i.e.*, a clay vessel of drinking-cup shape], "a flat piece of polished iron ore; a small celt of flint, with the peculiarity of having a round polished edge instead of a cutting one as is usual; a beautifully chipped cutting tool; twenty-one circular instruments, almost all neatly chipped; and seventeen pieces or rude instruments, all of flint."² At Green Lowe, Derbyshire, Mr Bateman further found with a skeleton "a piece of spherical pyrites, and a flint instrument of the circular-headed form," also a drinking-cup, and splendid flint dagger, some barbed flint arrow-heads, and instruments of bone.³ Again, at Dowe Lowe, Derbyshire, Mr Bateman discovered a skeleton which "was accompanied by a fluted bronze dagger, and an amulet or orna-

¹ Evans, *Stone Implts.*, p. 281.

² Evans, *Stone Implts.*, p. 282; Bateman, *Vest. Ant. Derb.*, p. 53.

³ Evans, *Stone Implts.*, p. 282; Bateman, *Vest. Ant. Derb.*, p. 59.

ment of iron ore, with a large flint implement which had seen a good deal of service."¹ In a barrow at Brigmilston, Wiltshire, Sir R. Colt Hoare found, with an urn containing ashes, some "chipped flints prepared for arrow-heads, a long piece of flint, and a pyrites, both evidently smoothed by usage."² In a barrow at Angrowse Mullion, Cornwall, a pyrites was found with a deep groove worn on the flat surface, in company with an urn and a bronze dagger.³ Evans says:—"Mr Franks has called my attention to another half nodule of pyrites preserved in the British Museum, which is somewhat abraded in the middle of its flat face, though not so much so as that from Yorkshire. It was discovered, with flint flakes, in a barrow in Lamborne Down, Berkshire, by Mr E. Martin Atkins, in 1851."⁴ Greenwell states that:—"Lord Rosehill found with a burnt body in a cist at Tyneside Farm, near Minto, Roxburghshire, a slice of a nodule of iron pyrites, together with a long and thick flint flake, apparently a flint and steel."⁵

We now come to the instances of the occurrence of pyrites with flint discovered by Greenwell, and very accurately figured and described by him as well as by Evans. Greenwell thus describes an interment examined by him in a barrow in the parish of Rudstone, East Riding of Yorkshire:—

"Immediately beneath the child was an oval grave, north-east and south-west, 8 feet by 4½ feet at the bottom, and 9 feet by 8½ feet at the surface-level, and 6½ feet deep. It was filled in with chalk. On the bottom of the grave was a quantity of charcoal. At the bottom of the grave, about the middle, was the body of a man, laid on the left side, with the head to S.E. by E., the right hand being up to the face and the left on the upper part of the stomach."⁶ [The following articles were found with the body:—a white stone of mica-schist, an engraved jet ring, a plain jet button, a jet button engraved with a Maltese cross, and a bronze knife-dagger, and rivets which had once held an ox-horn handle:—] "A little nearer to the face were two articles, a 'flint and steel,' not hitherto noticed as such in their relative capacities, though

¹ Greenwell, *Brit. Bar.*, p. 266; Bateman, *Vest. Ant. Derb.*, p. 96.

² Evans, *Stone Impls.*, p. 282; Hoare, *South Wilts.*, p. 195.

³ Greenwell, *Brit. Bar.*, p. 266; Borlase, *Nenia Cornubiæ*, p. 235.

⁴ Evans, *Stone Impls.*, p. 285.

⁵ Greenwell, *Brit. Bar.*, p. 266.

⁶ Greenwell, *Brit. Bar.*, p. 263.

they have been before found with ancient British interments. The steel had been made from a round nodule of iron pyrites split in half; the flint was placed below the split nodule which rested upon it, the flat surface being downwards; the flint is $2\frac{1}{4}$ inches long and $\frac{3}{4}$ inch square. Both show signs of continued use, in their worn and smoothed edges, but the spark of fire seems principally to have been obtained by rubbing the end of the flint along the flat surface of the nodule, which is worn into a considerable groove in consequence. The nodule has had a portion ground off on the rounded surface, probably in order to remove a projecting piece which rendered it inconvenient to handle."¹

Evans thus describes this half of a nodule of iron pyrites, and the long round-ended flake of flint (see fig. 2) which lay underneath it—²

“A portion of the outside of the pyrites has been ground smooth, and a projecting knob has been ground down so as to bring it to an approximately

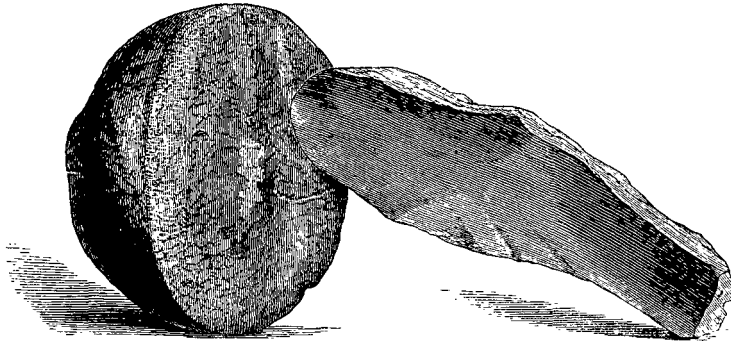


Fig 2. Flint Scraper and Nodule of Pyrites, found in a grave at Rudstone, Yorkshire.

hemispherical shape, and adapt it for being comfortably held in the hand. The fractured surface, where the nodule was broken in two, is somewhat oval, and in the centre, in the direction of the longer diameter, is worn a wide shallow groove (see fig. 2), of just the same character as would have been produced by constant sharp scraping blows from a round-headed flake or scraper, such as that which was found with it. The whole surface is somewhat worn and striated, in the same direction as the principal central groove;

¹ Greenwell, *Brit. Bar.*, p. 264.

² The Society is indebted to Mr John Evans for this and the following woodcut from his *Ancient Stone Implements of Great Britain*.

and the edge of the flat face of the pyrites is more worn away at the top and bottom of the groove than at the other parts. The scraper (see fig. 2) is made from a narrow thick external flake, the end of which has been trimmed to a semicircular bevelled edge; a portion of one side has also been trimmed. At the end, and along some parts of the sides, this edge is worn quite smooth, and rounded by friction, and there are traces of similar wear at the butt end.”¹

Greenwell discovered another specimen in the same barrow—

“At the south-west end of the first grave there was an extension, forming a second one, not so deep as the first by a foot. It extended 7 feet to the south-west, with a width of $4\frac{1}{2}$ feet. At the north-east end of it was the body of a man, laid on the left side, with the head to S.E., the right hand being up to the face and the left on the stomach. The body was but slightly contracted, the head being $3\frac{1}{2}$ feet away from the knees. Behind the back were two jet buttons, placed one upon the other; close to them, on the north, was another ‘flint and steel,’ almost indetical in form and appearance with those found in the preceding grave, but both of the latter showing signs of having been a longer time in use. As in the first instance, the nodule of pyrites was placed upon the flint.”

Mr Evans, referring to the occurrence of the pyrites and flint in the second grave in this barrow,² says :—“There can, I think, be no reason-

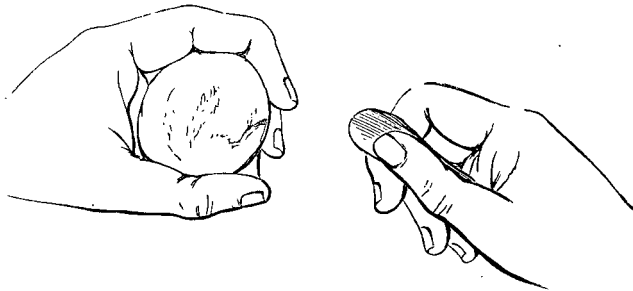


Fig. 3. Method of using Pyrites and Scraper of Flint for striking a Light.
(From Evans' *Ancient Stone Implements of Britain*.)

able doubt of their having been, in these instances, fire-producing implements, used in the manner indicated in the annexed figure (see fig. 3). The finding of the two materials together, in two separate

¹ Evans, *Stone Impls.*, p. 284.

² Greenwell, *Brit. Bar.*, p. 265.

instances, in both of which the pyrites and the flint present the same forms and appearance, establishes the fact of their connection."¹ Speaking of the Rudstone barrow, Greenwell observes that it presents some features which seem to require a more particular notice than the mere record of their occurrence:—

“The most important matter is the discovery of two articles which cannot have been anything else than a ‘flint and steel,’ the means of producing fire. So far as I know, this is the first instance of anything of the kind appertaining to the Bronze Age having been specially recorded; and although the probability that in these early ages fire was obtained by such a process may have suggested itself to many, as it has indeed to myself, still, before this discovery of the ‘flint and steel,’ unmistakably adopted and also used for that purpose, there was no tangible evidence of the fact. This evidence seems now to be supplied by the contents of the present barrow; for not only were the two materials—the flint and the iron pyrites—found in such juxtaposition as to imply connection the one with the other, but both by their appearance clearly indicate the nature of that connection and mutual use; the bruised and smoothed edges and ends of the flints and the grooved surface of the pyrites showing tokens of long-continued reciprocal friction. . . . The marks in question have no doubt been made, as has already been mentioned, by rubbing the flint rapidly across the flat surface in the process of obtaining the required spark. The value of the evidence is further enhanced by the fact, that like articles occurred in connection with two separate interments, under precisely similar circumstances, and with exactly identical appearances of use upon them. It might be naturally expected that a people who had so far progressed in civilisation, as the various remains belonging to the Bronze Period attest that the inhabitants of Britain had at that time arrived, would have attained to some better mode of producing fire than the tedious process of rubbing two sticks together, or even by the use of a fire drill. There was, however, no evidence to show in what improved way so important an essential to human existence, especially in a climate like ours, might have been obtained at the time in question, until this important discovery in the barrow at Rudstone supplied the interesting fact. It might seem strange that a people who were dealing in this manner with an ore of iron should not have made the discovery of the possibility of smelting it, if we did not bear in mind that the different pyretic ores are intractable enough to bid defiance to the appliances of modern science.”²

The third instance in which Greenwell discovered flint with pyrites

¹ Evans, *Stone Impls.*, p. 285.

² Greenwell, *Brit. Bar.*, p. 256 *et seq.*

TABLE OF INSTANCES OF THE OCCURRENCE OF PYRITES AND FLINT IN BURIALS IN GREAT BRITAIN.

Note.—The letter "F" stands for Finder.

No.	County.	Locality.	Finder or Authority.	Burial.		
				In	Character of.	Remains of.
1.	Cornwall	Angrowse Mullion	Borlase ¹	Barrow	?	?
2.	Wiltshire	Brimgillston	Sir R. Colt Hoare (F.) ²	Do.	Cremated	Urn with ashes
3.	Berkshire	Lamborne Downe	Now in the British Museum, Martin, Atkins (F.) ³	Do.	?	?
4.	Derbyshire	Elton Moor	Bateman (F.) ⁴	Do.	Inhumed	Skeleton
5.	Do.	Green Lowe	Do.	Do.	Do.	Do.
6.	Do.	Dowe Lowe	Do.	Do.	Do.	Do.
7.	Yorkshire	Rudstone	Greenwell (F.) ⁵	Do.	Do.	Do.
8.	Do.	Do.	Do.	Same barrow as above	Do.	Do.
9.	Westmoreland	Crosby Garrett	Do.	Cairn	Do.	Do.
10.	Roxburgh	Tyneside Farm, Minto	Lord Rosehill (F.) ⁶	Cist	Cremated	Burnt body
11.	Ross-shire	Flowerburn, Fort- rose	Mackenzie (F.)	Mound containing cist	Cremated	Urn with bones and charcoal

¹ Borlase, *Newia Cornubiæ*, p. 235; Greenwell, *Brit. Bar.*, p. 266.

² Hoare, *Ancient Wiltsh.*, vol. i. p. 195; Greenwell, *Brit. Bar.*, p. 266; Evans, *Ancient Stone Implements*, p. 282.

³ Evans, *Stone Implements*, p. 285; Greenwell, *Brit. Bar.*, p. 266.

⁴ Bateman, *Vestig. Ant. Derby.*, p. 53; Evans, *Stone Implements*, p. 282; Greenwell, *Brit. Bar.*, p. 266.

⁵ Greenwell, *Brit. Bar.*, pp. 263-268, pp. 390, 391; Evans, *Stone Implements*, pp. 284-285.

⁶ Greenwell, *Brit. Bar.*, p. 266; *Proc. Soc. Ant. Scot.*, vol. viii. p. 137.

Character of other Articles found in Burial, viz., of					
Pyrites.	Flint.	Pottery.	Stone.	Metal.	Bone, &c.
1. Half nodule with deep groove	None mentioned	Urn	...	Bronze dagger	...
2. Smoothed by age	Bearing marks of wear	Urn (sepulchral)	Flint arrow heads	...	...
3. Half nodule somewhat abraded in middle of flat face	See "Stone"	...	Flint flakes	...	...
4. Spherical	See "Stone"	Drinking cup	Flint celt (round edge), chipped cutting flint, 21 circular chipped flints, and 17 flakes	Flat piece of polished iron ore	...
5. Spherical	Round headed	Drinking cup	Flint dagger and arrow-heads	...	Bone instruments
6. Amulets or ornaments of iron ore	Large. Had seen service	...	...	Fluted brass dagger	...
7. Split nodule, worn and grooved	Smoothened edges and worn	...	Whetstone	Bronze knife dagger	Jet button, engraved button, jet ring, 2 jet buttons
8. Split nodule, longer in use than above	Longer in use than above	...	...	...	Perforated hammer of red deer's horn.
9. Piece of iron ore, much oxidised	Long thick piece of chest, end worn smooth by long use	...	Chert knife	...	Jaw of fox
10. Slice of nodule	Long and thick flake	Urn (sepulchral)	...	...	...
11. Half nodule abraded	Showing signs of wear	Urn (sepulchral)?	...	...	...

in an interment, was in a cairn in the parish of Crosby Garrett, Westmoreland. He thus describes it:—

“The first of the three cairns was of rather an unusual form, being markedly oval, 66 feet long and 40 feet wide, with the longer diameter north and south. . . . There cannot have been fewer than a dozen unburnt and burnt interments, and it is probable that there were more. . . . Five feet south of the present centre, but probably at what had in the first instance been the centre, and if so then the primary interment was the body of a young man, from twenty to twenty-four years of age, which had happily almost entirely escaped disturbance. He was laid on the right side, with the head to N. and the hands up to the face. In front of the knees was a hammer, made from the brow end of a red deer’s antler. . . . Between the humerus and the radius and ulna of the right arm was a long and thick piece of chert, triangular in section, and having the lower end worn quite smooth by long continued use. In the right hand was a piece of iron ore much oxidised, no doubt the ‘steel’ with which, in combination with the chert flake just described, this ancient Briton had obtained fire. This is the third instance where I have met with a man buried with his ‘flint and steel,’ the other two having both been in one barrow near Rudstone. In front of the face was another and thin flake of chert; it is $2\frac{1}{2}$ inches long, $\frac{7}{8}$ inch wide, chipped along both edges, and has most probably served the purpose of a knife. Close to the body was half the lower jaw of a young fox.”¹

In order to render the foregoing information more useful as a means of comparison, I have prepared the preceding tables (pp. 366, 367).

A glance at these tables serves to bring forward several important facts:—

- I. That an 11th example of the pyrites and flint “strike-light,” has been added to the already recorded 10 found in Great Britain.
- II. That the area of finds, formerly ranging from Cornwall to Roxburgh, has now been extended to Ross-shire.
- III. That the northern counties of England have been the most productive of these finds, claiming 6 out of 11 (viz., Derby, 3; Yorkshire, 2; Westmoreland, 1), as against 3 in the southern counties, and 2 in Scotland, according to present geographical distribution.
- IV. That they are usually contained in barrows.

¹ Greenwell, *Brit. Bar.*, p. 389 *et seq.*

- V. That they belong to both the cremation and inhumation periods, and that they are found with skeletons, burnt remains, and ashes contained in urns.
- VI. That though the nodules of pyrites are sometimes spherical in shape, they are usually split, as affording a better surface for obtaining the spark, and they, as well as the flint, in most cases show signs of wear and long use.
- VII. That they were used cœvally with the manufacture of pottery, as evinced by the presence of urns and "drinking cups."
- VIII. That in Great Britain their use continued at least from the Later Stone Period till the Later Bronze Period, the latter being proved by the presence of 3 bronze daggers, one fluted.
- IX. That they continued in use until an epoch when art had made a considerable advancement in this island, as evinced by the fluted dagger and the engraved jet ring and button.
- X. That no article of wrought iron has been found in British burials, in conjunction with flint and pyrites.

We now come to the last portion of our inquiry, viz., the period to which, and the people to whom, these burials containing strike-lights belong.

We see, from the preceding table, that flint and pyrites were in use in Britain as strike-lights during a considerable period; and that the few examples found range over a considerable area. We also see that examples have been found in localities which produce neither pyrites or flint; and from this, and other circumstances, the strike-light seems to have been among the most treasured possessions of the early Britain, accompanying him even to the tomb. We further see that no articles of iron have been found with strike-lights in British burials. But the Thorsbjerg find proves that pyrites and flint were still in use during the Early Iron Age. We must therefore avoid laying down a hard-and-fast rule, though we may, I think, safely assume that the proper period of the strike-light ranges from the Later Stone to the Later Bronze Age. Until the crania of the barrows, in which strike-lights have been found, have been thoroughly described, we shall remain in considerable ignorance as to the race or races therein

interred; while in cremated burials we have, of course, no crania to guide us. Any opinions, therefore, as to the personality of the users of these strike-lights, must be based almost entirely on conjecture. I therefore merely start an idea in suggesting that these strike-lights were in use by our Celtic ancestors; as well, probably, as a Turanian race, allied to the modern Lapps or the Esquimaux (amongst which latter people we know pyrites and flint to be still in use for producing fire), who preceded them as occupants of these islands.