

A P P E N D I X.

Extracts from the Proceedings of the Committee.

1864, *January 28th.* The REV. J. BULWER exhibited a latten ewer, about four inches in height, with a spout and handle, perhaps for consecrated oil, found in Salthouse fen, near Holt, in September, 1863.

MR. FITCH exhibited a copper roundel, enamelled, representing the head of our Saviour, or of a saint, with four mitres round it; apparently intended for a badge, or for the centre of a dish or bowl: thirteenth century. It was found at Framingham, near Norwich.

MR. FITCH also reported the discovery of a fine amphora, broken, at Thorpe by Norwich, on ground belonging to the Rev. W. Frost, near the spot where the antiquities reported in February and March, 1863, were found. The amphora was empty and clean, and the surrounding ground contained much charcoal and calcined flints.

March 3rd. A letter was read from T. BARTON, Esq., Threxton, informing the Committee of the discovery of a Roman flue at Saham, from which it is supposed that a hypocaust may exist, and offering facilities for excavation.

May 4th. MR. FITCH exhibited a circular leaden seal found at Ipswich: device, a double cross; inscription, “+ SIGILL: FELIPI: HALAT:” thirteenth century. Also an oval bronze seal, with a bird, inscribed “+ CREDEM NENHI,” also

found at Ipswich. And a copper die, or stamp, with a figure of David playing the harp, in a circle, inscribed “+ AVE : MARIA : GRACIA : PLENA : DOMINUS : TECVM”; above the circle, three small circles and a half, with a bird, apparently a swan, in each : thirteenth century.

July 1st. MR. FITCH exhibited a fine bronze seal of the fifteenth century, of the Abbey Talley in Caermarthenshire : device, the Agnus Dei, the words “Ave Maria” below, and the half-figure of a mitred ecclesiastic ; (described in the Norwich volume of the Archæological Institute.) Also a small bronze seal, found in Asylum Lane, Heigham : device, a lion, “SUM LEO FORTIS.” It was mentioned that this was the motto of the Albini family.

September 8th. MR. FITCH exhibited a bronze mortar, inscribed, JAN VANDEN GHEIN ME FECIT MCCCCLVIII.

MR. MANNING exhibited a copper purse-stretcher, enamelled in colours, with the signs of the Zodiac : thirteenth or fourteenth century ; obtained at Brussels.

December 8th. MR. MANNING exhibited a bronze seal obtained at Hadleigh, Suffolk, of the fourteenth century, with a female head, and inscribed + IE SV FLVR DE FIN AMVR.

MR. FITCH reported the discovery of a mural painting in Coltishall Church, on the north wall, and exhibited a drawing of it by Mrs. Gunn, and of two double-splayed windows, herring-bone masonry, &c.

The President, SIR J. P. BOILEAU, BART., communicated a letter to him from the Rev. J. F. Bateman, of South Lopham, stating that an examination had been made, since the Society’s visit to his church in the previous September, of the circular window on the north side of the nave, by which it was proved that it was double-splayed ; and that

other remains of former windows and doors had been found. This curious little window belongs to the same class as those discovered in Framingham Earl Church, noticed in a previous volume,* having had a hoop of wood inserted in a groove at the opening, pierced at the edge with eyelet holes, for the purpose of stretching cord across instead of glass.

1865, *January 26th.* MR. MANNING exhibited a gold ring, said to have been found in West Norfolk, of the fifteenth century; engraved with a crest, a cock's (?) head between two wings, out of a coronet.

MR. GUNN exhibited a large "marmot," or pot of bell metal on three legs, (broken) found in Bishopgate Street, Norwich, believed to be of the thirteenth or fourteenth century. Deposited by the late Sir J. P. Boileau, Bart., in the Norwich Museum.

A celt of white flint was also exhibited, found at Ormesby.

March 2nd. MR. J. S. BENEST exhibited a bronze candlestick, found in Rampant Horse Street, Norwich, in digging for the foundations of a house in the occupation of Miss Shearing.

March 30th. MR. MANNING exhibited, by permission of the Rev. J. W. Millard, of Shimpling, a MS. book of Swan Marks and Orders, 1598; also a MS. Herbal, in English, of about the time of Chaucer.

May 2nd. MR. GUNN exhibited a flint celt found by himself on the edge of Fritton lake.

August 25th. The REV. J. BULWER exhibited two spear heads and a breast pin, dug up from the peat, near Stoke Ferry, in 1864.

* *Original Papers*, vol. iv., p. 363.

1866, *May 31st*. A communication was received from MR. L'ESTRANGE respecting some consecration crosses on the *exterior* of All Saints Church, Norwich. He says:—

“These crosses are frequently found painted on the *inside* walls of our churches, and are often of graceful design, varying in size from six or seven inches in diameter to near two feet; occasionally they are accompanied by inscribed scrolls. At St. John de Sepulchre, Norwich, one is still preserved with ‘Adorabo ad templum sanctum tuum dn'e.’ At St. Saviour's there were two on the east wall of the chancel with these words: ‘Et porta celi,’ ‘Et aula vocabitur dei.’ At St. Peter per Mountergate two crosses had scrolls over them, respectively inscribed ‘Domu' tua' dn'e decet sanctitudo,’ Ps. 92, and ‘Beati qui habitant in domo tua dn'e,’ Ps. 83. There are particular directions concerning these internal consecrated crosses in the service, *De Ecclesie Dedicacione*, in the *Pontificale Romanum*, and Durandus in his *Rationale Divinorum Officiorum* fully explains their symbolical meaning. Pugin, also, in his admirable *Glossary*, has an article upon them which contains all that one could wish to know about them. He is the only writer, that I can find, who refers to those outside churches: he says, ‘I am inclined to believe, from the fact of their being *outside* the church, that the external walls were anciently anointed in this country.’ Some years ago, the Rev. James Bulwer, who, I think, intended to write a short notice of consecration crosses generally, and to have illustrated it with a plate, giving several varieties, told me that he had observed patches of plaster on the external walls of churches, upon which he had no doubt consecration crosses had been depicted. Since then, I have noticed several churches with similar remains; Ovington and Catfield occur to me. But at Newton St. Faith's there are actually twelve patches of plaster on the nave alone. (Twelve is the number required by the Rubric for the inside.) At Shotesham, I am told, the remains of colour still exist. But the only instance I have yet met with of stone consecration crosses is at All Saints. They are small circular stones, about six inches in diameter, with a plain cross in slight relief; each has, or had, a piece of iron, about the thickness of an inch and half nail, exactly in the centre. There is one cross under the east window of the chancel, one under each of the five windows on the south side of the church, and another near the south porch; there is another under the west window of the north aisle, and three on the north wall of the nave; these make eleven in all. The one required to make up the rubrical number of twelve, would be found most likely at the east end of the north aisle, against which the vestry is built. All the stones on the south side are in an advanced stage of decay; but those on the north side are more perfect, and the one at the west end of the north aisle is remarkably well preserved, and it was this which first attracted my attention about a year ago, and set me wondering what it could be, and led to my finding the others. The church is now being repaired, the most important discovery yet made is, that the stalls in the chancel were arranged after the fashion of those in St. Peter Mancroft and St. Peter per Mountergate, of which plans, &c., will be found in Mr. Minns' paper on ‘Acoustic Pottery’ in our last Part.”

The discovery of the jars here noticed, was also reported

by Mr. Phipson; they were sixteen in number, placed under where the stalls had been, their mouths opening into a trench on each side, as at St. Peter's per Mountergate Church, already described in this volume.

Mr. L'ESTRANGE also communicated an account of a brass inscription restored to the church of St. John Timberhill, Norwich, by Mr. Titlow, and of errors in Blomefield's *History* respecting it.

The same gentleman also sent a drawing by Mr. Spaul, of a coffin-slab at Hindringham Church to Abbot Hugo, of Langley.

MR. FITCH exhibited a large number of flint Implements from the drift, recently found at Thetford, some taken out of the soil by himself.

June 19th. MR. CARTHEW exhibited a brass shield, believed to have been taken from Ely Cathedral. Arms:—a lion rampant, impaling, chequy, on a fess, three martlets. Date about 1400—20.

MR. L'ESTRANGE exhibited a cast of a wood-carving of the head of St. John the Baptist in the charger, from a spandril of the doorway of the screen in Trimmingham Church.

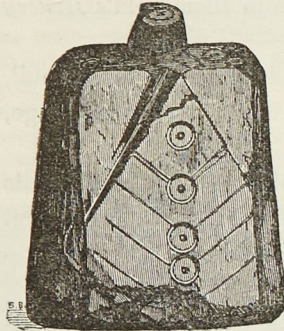
August 10th. MR. FITCH exhibited a silver seal found outside St. Augustine's Gates, Norwich, 1866, representing a female head, with the legend, +JE SVY SEL DE AMOUR LEL: *circa* 1350—1400.

The REV. E. GILLET exhibited a carved wooden helmet and crest, (a plume of feathers out of a coronet, with a crescent for difference) probably part of a monument; long preserved at Lincoln Hall, Beighton, formerly belonging to William de Waynflete: *circa* 1400.

SIR J. P. BOILEAU, Bart., President, exhibited some tracings of wall decoration, found at Hethersett Church, on

the wall at the east end. The chancel of the church had been taken down, but the paintings are of the fifteenth to the seventeenth century.

September 4th. MR. MANNING exhibited, by permission of the owner, a jet chessman, found at Thelton, Norfolk, in



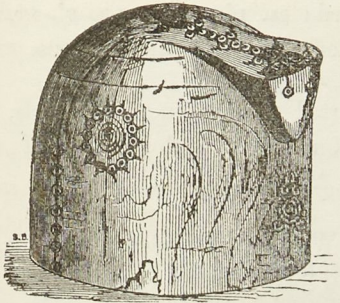
1866, belonging to T. E. Amyot, Esq., of Diss. It is apparently of the Saxon period, and may be of Norse manufacture. It is engraved with lines and circles, and is shaped like a small flat bottle, with a conical projection rising from the top. Not many chess pieces have been preserved in this material; two in the Museum at Warrington

are noticed in the *Archæological Journal*, ix. 304, and xiii. 180. This piece from Thelton has been exhibited to the Society of Antiquaries, and the woodcut published in their "Proceedings," vol. iii. p. 385, is here reproduced by their obliging permission.

The President communicated a sketch and notice from Mr. Elves, of Congham, respecting a stone hammer, and a bowl or mortar, recently found there.

MR. FITCH reported that a portion of a fine screen had been discovered at St. John de Sepulchre Church, Norwich. The figures are in outline, and represent St. James, St. Blaise, St. Ursula, St. George, St. Etheldreda, St. Gregory: *circa* 1400—1450.

November 29th. MR. MANNING exhibited, by permission of Mrs. Holmes, of Gawdy Hall, Harleston, an ivory chessman, believed to have been purchased by the late Mr. Sancroft Holmes. Of this piece it is remarked in the "Proceedings" of the Society of Antiquaries, (who have



kindly allowed their illustration of it to appear with the Thelton specimen described above) that "it is ornamented with minute dots and concentric circles, and probably is a knight. A similar specimen, but of larger size, is in the British Museum. It

is uncertain whether this specimen is Italian or Oriental."

MR. MANNING presented a copy of Mr. Alfred Newton's pamphlet on "The Zoology of Ancient Europe," containing some account of discoveries of remains of "Lake Dwellings," at Wretham Mere, Norfolk.

1867, *January 10th.* MR. FITCH exhibited a fine silver armlet or fibula, found near Chelmsford, Essex.

MR. MANNING exhibited a gold ring with a sapphire, dug out of a pit at Fressingfield, Suffolk: *circa* 1400.

MR. T. JECKYLL sent a sketch of a fireplace in a farmhouse at Fundenhall, with a frieze of plaster: *circa* 1600.

The REV. J. GUNN reported the discovery of mural paintings at Brunstead Church, representing the "deadly sins."

April 3rd. MR. FITCH exhibited a "costrel," or portable bottle, sixteenth century, found in Chapel Field, Norwich.

MR. L'ESTRANGE sent an extract from the will of Nicholas de Stow, P.C. of Snettisham, 1376, leaving five marks to the paving of the chancel of that church: confirming the statements in *Original Papers*, vol. i. p. 373.

The REV. J. BULWER reported that Mr. Bolding, in making excavations at Weybourne Priory, had discovered what he believed to be the plan of an older church.

MR. FITCH exhibited a gold coin of James I., found at

Hellesdon. *Obv.*: a rose crowned: IA. D'G. MAG. BR. F'. ET. H'. REX. *Rev.*: a thistle crowned: TUEATUR. UNITA. DEUS.

June 21st. MR. FITCH reported that seven gold angels, of the reigns of Henry IV., Henry VI., and Richard II., were found in making a road at Attleborough hall.

Sept. 24th. The REV. J. LEE-WARNER exhibited a rubbing of a brass legend at Wellingham, "Hic jacet e . . . Thomas Pecke, eremita." *circa* 1450.

MR. FITCH exhibited the brass matrix of the seal of the Deanery of Flegg, *circa* 1400; and a bronze wolf, said to have been found at Caister by Yarmouth; apparently the head of a staff.

November 5th. MR. MINNS exhibited a brass seal found at Castleacre: device, a priest with hands raised over a chalice on an altar: S'. ROB'TI. CAPIL'. DE. WRIDLINGTON."

CAPT. BULWER exhibited a brass locket, in the form of a heart, enclosing a cross, found in East Dereham churchyard, August, 1867.

MR. FITCH exhibited a silver ornament of square form, size $1\frac{1}{8}$ inch by $\frac{1}{2}$ inch, with the figures of St. Peter and St. Paul, and the letters "APS. 398," apparently a mould for taking impressions; also a leaden matrix found at Booton. "+ S'. WIL'MI. DE. SLOTH."

1868, *January 2nd.* MR. C. J. WINTER exhibited a drawing of a portion of a mural painting of a consecration cross at St. Andrew's Church, Norwich.

February 6th. MR. FITCH exhibited two flint Implements of the palaeolithic type, found at Santon Downham, Suffolk.*

June 2nd. MR. FITCH exhibited a leaden bulla of Pope

* Mr. Fitch read a Paper on the discovery of these Implements, at the Annual Meeting on the 19th.

Clement III., found in St. Giles' churchyard, Norwich, May, 1868.

MR. MANNING exhibited a polished flint celt found at Needham, near Harleston, Norfolk. Also some leaden objects found at Leverington, Cambridgeshire, viz.: a spindle-whirl, probably Saxon; a shield-shaped article with a lion rampant, pierced with a hole; and a roundel with the Royal arms, James I. (?); also a bronze pin of Roman date.

MR. L'ESTRANGE exhibited two deeds, with seals, of Gregory Draper, 1435, 1456, with merchants' marks differing from those of the same person noticed in the Society's *Original Papers*, vol. iii. p. 215. It was suggested that he had probably made use of another person's seal.

August 4th. The REV. PRECENTOR SYMONDS exhibited a small bronze celt, the cutting edge having a groove, purchased at Tours, France.

September 2nd. MR. FITCH exhibited a fine bronze seal, found August, 1868, in Norwich. It is the seal of the Hundred of Lothingland, Suffolk, and is similar to that of the Hundred of Wangford, figured in the *Archæological Journal*, vol. xi. p. 31. and in Suckling's *Suffolk*. It is inscribed, "S. regis in comit. Suff: Hundr̄ de ludingland."

October 7th. A communication was received from MR. HARROD respecting the extracts from the Lynn Subsidy Roll, printed in the Society's *Papers*, vol. i., stating that he had been able to confirm the date by comparison with a Roll at Ramsey Abbey, as being of the 19th year of Edward I.

MR. MANNING exhibited an iron javelin head with four blades, found in the bed of the river at the "Goldspur" bridge, Hoxne, Suffolk; probably Danish.

MR. F. WORSHIP exhibited a leaden "signaculum," said to have been found at Blackfriars Bridge, London, with the date 1021 in Arabic numerals. It is doubtless a forgery.

MR. FITCH exhibited a collection of ancient Carib conch implements,—chisels and hones; and a piece of Carib pottery, sent by the Rev. Greville J. Chester to the Norwich Museum from Codrington Estate, Barbadoes. (See Wilson's *Pre-historic Archaeology*; and *Archaeological Journal*, vol. xxvii. pp. 43, 71.)

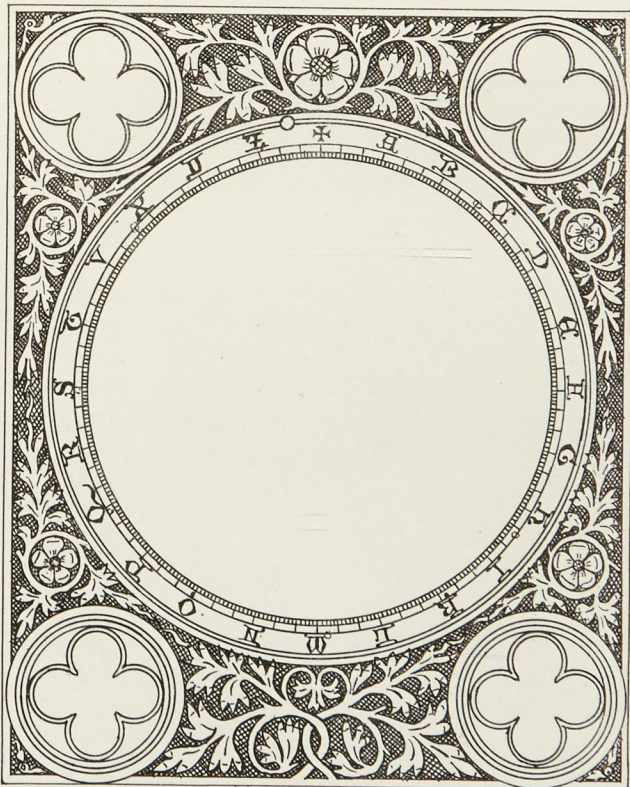
December 1st. MR. FITCH exhibited a fine collection of stone implements from Denmark, Sweden, and Ireland.

1869, *May 4th.* MR. MANNING exhibited a collection of Saxon antiquities belonging to Mr. A. Marsh, of Diss, consisting of bronze fibulæ, clasps, buckles; and about a hundred amber and glass beads, found at Kenninghall.

MR. FITCH exhibited a silver ring found at Earlham; a bronze celt found at Reedham; and a white flint implement from Lakenheath.

July 6th. A drawing was presented by the REV. E. J. HOWMAN, of a mural painting discovered on a splay of a window in Denver Church. The subject is uncertain; the date apparently *circa* 1360.

MR. MANNING exhibited a brass plate, (*see Illustration*) size 8 inches by $6\frac{1}{2}$, chased with foliage, and pierced with a large circle in the centre, and with four quatrefoils in the corners, the circles having round the edge the 360 degrees, and the letters of the alphabet, one to every fifteen degrees. It was procured from a farm-house at Bressingham, near Diss, and was among a collection of curiosities formed by a Mr. Harrison, resident there about 150 years ago, and mentioned in Blomefield's *Norfolk*, vol i. p. 73. It was inserted in a pantry door, and the central circle was used to pass the hand through to lift up the latch. This instrument being thought to be a portion of an astrolabe, the following remarks are added from a letter received from a



PORTION OF AN ANCIENT BRASS ASTRONOMICAL INSTRUMENT.

COWELL'S ANASTATIC PRESS, IPSWICH.

high authority on such subjects, Octavius Morgan, Esq., M.P.
He says :—

“It is, I think, certainly not a portion of an astrolabe, although the graduated scale is, like the limb or outer circle of an astrolabe, divided into 360 degrees. Here every division of fifteen degrees seems to be designated by a letter of the alphabet, while in every astrolabe I have seen, and I have three or four, and there are several in the British Museum, it is not so. The usual astrolabe was a circular instrument having several flat plates, rulers, and indices, revolving on either side of it, and was suspended by a ring by which it was held on the thumb when observations were made by it. The plate you have is doubtless a portion of some such instrument, but whether for vertical or horizontal use is not clear. The hollow centre must certainly have been filled by some moveable dials or plates, with perhaps a ruler, index, or sight, as in an astrolabe. The four quaterfoils I take to have been simply ornamental.”*

MR. FITCH exhibited a fine gold gimmel ring of five pieces, with joined hands.

A letter was read from T. BARTON, Esq., reporting the discovery of Roman coins at Fincham, and of Roman urns at Ovington.

August 10th. MR. FITCH exhibited a “drinking-vessel” of pale earthenware, British, found some years ago at Edgefield, Norfolk; peculiar from having a cross on the under surface.

December 1st. MR. FITCH exhibited a gold ring set with an uncut emerald, found at West Bilney.

1870, *May 3rd.* The Secretaries reported that they had visited “Grime’s Graves,” in Weeting, in company with Canon Greenwell and others; and that he had made very important discoveries there. These have been since communicated in a paper read before the Ethnological Society, in London. By the kind permission of Canon Greenwell, the principal part of his paper, so interesting and valuable to every student of pre-historic antiquities, is here reprinted.

Brandon (he says) is with one exception, the only place in England where the manufacture of gun-flints is still maintained. This is principally due to the

* See Mr. Morgan’s “Observations on the Astrolabe,” *Archæologia*, vol. xxxiv.

abundance of flint, of a superior quality, which the Upper Chalk of the neighbouring district supplies. The town is situated on the River Ouse, there forming the boundary between the counties of Norfolk and Suffolk; and the locality has been, in various ages, the abode of people who have used flint extensively, though for very different purposes. The drift-gravel, found at levels of greater or less height in the valley of the river, has been most prolific in implements of the time when man was occupying the country together with many extinct mammals. These beds, worked for road material, at Thetford, Downham, Broomhill, and Brandon Fields, have afforded an almost endless store of palæolithic implements, as the cases of many a museum bear witness. In very much later, but still in pre-historic times, the district was occupied by a large population, as is shown, amongst other indications, by the numerous articles of flint lying scattered upon the surface of the ground. In a country like that in question, where the soil is an infertile and drifting sand, it appears difficult, at first sight, to account for its having been so extensively occupied in those early days—an occupation which continued throughout Roman and Anglian times. Without taking into consideration the supply of flint, in itself a mine of wealth to a stone-using people, the isolation, and therefore defensible position of the locality, was, probably, one reason why it became the place of habitation of a numerous population. To a great extent it is separated from other parts by the Fens, which, under any circumstances, must always have presented a strong barrier against attack from the west and north. Besides the defence afforded by the Fens, they provided, in their forests and swampy thickets, a constant supply of game—one of the principal requirements in any place of abode selected by a people who to some extent subsisted by the chase. The country was then, as it is still, a very paradise of the hunter, whether the necessity of existence was the motive which impelled him to the exercise of his craft, or he was prompted thereto merely by the love of sport. The deer, the swine, and the ox were the wild animals which then rewarded the hunter's toil, now replaced by the hare, the rabbit, the pheasant, and the partridge.

As has already been stated, implements of flint, most of them belonging to the neolithic age, are found scattered over the surface of the ground throughout the whole of the locality in question. There are some particular sites, however, where such articles, together with large numbers of chippings and cores of flint, imperfect and broken implements, and the tools with which they were fabricated, are discovered in still greater profusion. One of these is situated about three miles N.E. of Brandon, and one mile north of the River Ouse, at a place called Grime's Graves, in the parish of Weeting and county of Norfolk. It is evident from the quantity of refuse pieces of flint, and the numerous fabricating-tools still remaining at the spot, that it was the place where a manufactory of flint implements had been carried on; and the purpose of this paper is to give an account of the examination of the pit-workings there, from which the material itself was obtained.

Before describing the pits themselves and the way in which the flint was worked, it may be well, in the first instance, to give some account of the implements, whole and broken, and of the articles in flint and other stone, found on the fields immediately adjoining to the pits. This appears to be necessary, because there can be no doubt that in them we have the result, to some extent, of the operations of the people who quarried the flint; and we may thus gain a knowledge of the implements they fabricated, and by that

means arrive at some conclusion as to the period during which the pits were worked.

By far the larger number, as might indeed be expected, are chippings of various sizes, the refuse pieces struck off from the block in reducing it to shape. These are in such quantities in a field immediately to the south of the pits, that in some places it is scarcely possible to put the foot down without treading on one. The next most numerous article is what at first sight might be taken for a round core, the remainder-piece left after all the flakes suitable for implements had been struck off. On a more careful examination these appear to have been chipped into shape by design, and to have been intended for hammers, to break up the flint and to flake it with; and many of them show, in their battered edges, the signs of a long-continued use for some such purpose. They were also probably used for splitting the chalk in the course of sinking the shafts and making the galleries to be described in the sequel.

Of such articles as may be denominated implements, the most frequent one is somewhat in the form of an adze. The greater part of these were broken; but a few perfect specimens have been found. The cutting-edge is not equally bevelled on each side as in an axe, but flat on one side and more or less convex on the other, thus having the shape best adapted for the purpose to which an adze is applied. These tools may have been intended to quarry the chalk on the spot, and may also have been used as hoes in cultivating the ground. I think it highly probable that stone-implements of the axe and adze form have served a double purpose, in the manufacture of wooden articles and in the processes of agriculture. Those in question vary considerably in size, and range from 4 inches to 8 inches in length.

The ubiquitous scraper, round and oval, is abundant, and attains to a large size, some being as much as $3\frac{1}{4}$ inches in diameter.

Drills or tools for boring are not unfrequent: most of them are very rough, though showing evident intention in the shape; but some have been carefully finished by elaborate chipping.

A few knives, or what may have been used for skinning and cutting, have occurred; and I found two implements, looking very much like the heads of spears or javelins: the one is hollowed out at the but, and approaches to the barbed form; the other is of an elongated leaf-shape. Besides these several weapons and tools, there are many enigmatical articles to which it is impossible to assign either use or name.

All these implements have merely been chipped into shape, and I have not met with one from the immediate neighbourhood of the pits which shows any trace of grinding.

Besides the articles of flint, numerous water-rolled pebbles of quartzite and other stone are abundantly found, showing in the bruised ends and sides that they have been used as hammer-stones, and principally, no doubt, for flaking flint, for which purpose, from their hardness and toughness, they are well adapted.

Though all these different implements, cores, and chippings are discovered for some distance round the pits, they become more frequent the nearer the pits are approached, indicating, as indeed might be expected, that the principal manufacture went on close by the place where the flint was procured.

This place, consisting of a large assemblage of pits, is called Grime's Graves. They are situated in a wood, upon ground sloping slightly towards the north,

and are about 254 in number, placed in an irregular fashion, generally about 25 feet apart, and covering a space from 20 to 21 acres in extent. It does not appear necessary to enter into the etymology of the name,* further than to mention that the place is in the Hundred of Grimshew, the first part of both words being taken either from Grime-an, a witch (and this is the more probable origin), or from some Scandinavian possessor of the district called Grim—a name by no means uncommon, and which is found in Grimsby, Grimsthorpe, and other places. There is a Grimsdyke in Hertfordshire and Buckinghamshire, another in Wiltshire, a third in Essex, and two in Oxfordshire. The same origin is, no doubt, to be found in Græme's Dyke in the south of Scotland. Another name of the same being who gave this designation to these various earthworks occurs in combination with Dyke in the Devil's Dyke. The English inhabitants, who were ignorant of the origin and purpose of the pits, attached the name of Grim to them, either taking it from the hundred, or giving it to the pits themselves in the first instance. However this may be, they called them Grime's Graves, that is, Grim's diggings or pits.

At the east side of the collection of pits is a mound, which has figured as a speculatorium, and a barrow; for Grime's Graves have been taken to be a British village, a Danish encampment, and other equally impossible constructions. The mound was cut through by the Norfolk Archeological Society, when nothing was discovered except a piece of a red deer's antler. It appears to be nothing more than a heap of the material taken out of one of the pits, possibly from the first that was opened, and when there was no other way of disposing of it, there being no existing excavation into which to throw it.

The pits are circular, and vary in diameter from 20 feet to 65 feet. In some cases they have run together, and form irregularly shaped hollows. This is probably caused by the falling in of the roof of the galleries, to be hereafter described, by means of which the ground between two or more pits has settled, and so destroyed the original outline. They have all been filled in to within about 4 feet of the surface, and present the appearance of a series of bowl-shaped depressions, having in some instances a slight mound round the edge, due to some of the excavated material not having been thrown back into the pit when it was filled in.

Having thus briefly introduced Grime's Graves, it becomes necessary to give a detailed account of the way in which they have been made, as shown by the opening and examination of one of them, as well as of the various manufactured and other things discovered during the operation.

The pit which was opened is situated on the east side of the series, near the extreme edge, and almost in the south-east angle of the space occupied by the pits. It is rather under the medium size, being 28 feet in diameter at the mouth, and gradually narrowing to a width of 12 feet at the bottom, which is 39 feet below the surface. It is cut through a deposit of dark yellow sand, 13 feet in thickness, here overlying the chalk. Interspersed at various places in the sand are irregular-shaped nodules of flint, of a coarse texture and not well fitted for the fabrication of implements. The chalk upon which this bed of sand rests has also, in the upper part, similar nodules of flint placed after the same fashion as those in the sand; but at a depth of $19\frac{1}{2}$ feet from the top of the chalk a regular stratum of flint of a somewhat better quality occurs. This is called by the present flint-workers the "wall-stone," from its being used

* See remarks on this subject in Mr. Manning's paper on "Grime's Graves," *ante* p. 173.

for building-purposes, and is not well adapted for the manufacture of gun-flints, on account of its want of fineness of grain, and from not possessing sufficient hardness to enable it to resist a continued percussion against steel. It was, however, used to a considerable extent by the people who made the pits, as is shown by the chippings, cores, and other articles made from it, found on the surface of the adjoining ground. In the pit itself, though much of it had been thrown back again unmanufactured, several flakes were nevertheless discovered, evidencing its having been made use of in the fabrication of implements. At a depth of $7\frac{1}{2}$ feet below the stratum of wall-stone, and 39 feet below the surface of the ground, a second bed was met with, called by the workmen the "floor-stone," and now worked for the material from which gun-flints are manufactured. The flint in this bed has an average thickness of about 7 inches, and is of the best quality in every respect. Though found at a much greater depth than the same stratum about a mile to the S.W., where it is now being worked for flint-knapping, it has more than twice its thickness, and is of finer grain and closer texture; and it is not improbable that the ancient workings were established at the place on account of these qualities in the flint.

It has already been mentioned that the pits have all been filled in to within about 4 feet of the surface. This seems to have been done by throwing into an open shaft the waste materials taken out of one or more pits in course of being excavated. By doing this the sand and chalk were at once removed out of the way, so that, if there was at any time a necessity to sink a shaft near to a former one, it might be done without incurring the additional labour of cutting through the *débris* from the pits. If the material taken out of the shaft and galleries had been left round the edge, the access to the workings would have been made more difficult. The shaft which I reopened had been filled in, apparently, from more than one pit; for the way in which the different materials were placed in it was such as could scarcely have happened if all had been taken from a single pit. The filling in for about 18 feet from the bottom was almost pure chalk, taken from that part which lies between the two beds of flint. Above that was a considerable thickness of sand, intermixed with flint nodules and some pieces of chalk; then came a deposit of chalk and flint chippings, in some parts of which the flint chippings very much preponderated; after that was chalk rubble, then sand, and at the top chalk rubble again. All these various deposits were so irregular that they could not be measured with any exactness; and in many cases a mass of chalk rubble at the centre did not extend as far as the sides of the pit, whilst in others it only reached from the side to near the middle. The whole appearance favoured the opinion that the pit had been gradually filled in, the operation being a work of considerable time. This impression was further confirmed by finding numerous animal bones (most of them broken to extract the marrow), charcoal, burnt sand, chippings and cores of flint, pebbles for flaking, tools of deer's horn, and other articles, to be specially mentioned in the sequel. These were found scattered indiscriminately throughout the whole of the material which filled in the pit. The quantity of charcoal was not very great; but at one place, close to the east side and at a depth of 28 feet, a layer of charcoal and wood ashes was found, 4 feet in width, and extending for a distance of 5 feet towards the centre. It appeared as if a fire had been lighted on the spot; for the chalk and flint below and in immediate contact with it were partially calcined. It is difficult to account for the occurrence of a fire in such a position, removed as it was at so great a depth

from the surface; but it is scarcely possible to understand how the underlying chalk became burnt in the way it was, unless a fire had been lighted there; for the throwing in of hot embers could not have calcined the chalk to the extent in which it was found.

Having noticed, by way of introduction, those secondary questions which appeared to require some explanation, it now remains to describe how the flint itself was worked out by the prehistoric people who made the pits. The process differs in some respects from that adopted by the present flint-raisers. The ancient workers sunk a circular shaft, gradually decreasing in size to the level of the stratum of the best flint, passing through the upper layer of the so-called wall-flint, but not removing any of that bed beyond what occurred within the limits of the shaft itself. When the floor-flint was reached, it was worked out to the extent of the pit; and then galleries were excavated in various directions upon the level of the bed of flint. In order that sufficient height might be obtained to enable the workmen to extract the flint, a considerable quantity of the overlying chalk has been removed, the galleries being on an average about 3 feet in height, though in some places the roof was 5 feet high. Their height, however, is very irregular, owing in some measure to the manner in which the chalk roof had given way in some places more than in others. In no case was any of the chalk below the flint bed removed—a practice contrary to that of the present workmen, who, in making their galleries, excavate the chalk both above and below the flint. The galleries vary in width from about 4 feet to 7 feet; and the flint was worked out beyond their sides as far as was practicable without causing the roof to give way. I had not time to examine them to the full extent of the workings; but they no doubt connect all the shafts. A side gallery, proceeding from the first gallery opening out of the pit which I examined, was found to extend for a distance of 27 feet to the west, where it ended in a pit, which still remains filled in. Nor can there be much doubt that the whole space occupied by the pits is a complete network of galleries, and that, if the chalk rubble were taken out of them, it would be possible to travel underground over the space in question. To do this would be a work of great labour; for as one gallery was worked out, it was filled in again with the chalk excavated from other galleries, so that nearly the whole of them are now filled up with rubble.

There were no steps cut in the side of the pit, or any provision of that kind for obtaining access to the galleries; so that the workmen must either have been drawn up by ropes, probably of hide, or have ascended by means of a ladder, which, if such was the case, was most likely made by cutting notches in a tree-stem.

The principal instrument used, both in sinking the shaft and in working the galleries, was a pick, made from the antler of the red deer, numerous examples of which were found in the shaft at various depths, and in the galleries. The pick, almost identical in form with that, of iron and wood, used by the present workmen, was made by breaking off the horn, at a distance usually of about 16 or 17 inches from the brow end, and then removing all the tines except the brow tine. The process of dividing the antler and breaking off the tines had been made more easy by partly burning the horn at the places where it was desired to divide it, most of them being partially charred at those parts. There were very slight indications of any of them having been cut through; but one antler from a slain deer, having part of the skull attached to the horn, it had

been attempted to make more handy by cutting off the piece of skull. This has evidently been done by flint flakes; and the work proving too hard, the piece of skull still remains attached to the antler, with the ineffective and irregular cuttings still upon it. Another antler, which had the brow tine projecting from it at an inconvenient angle, has had it removed by making a shallow groove at the base of the tine, and then snapping it through.

These tools had been used both as picks and as hammers, the point of the brow tine serving for a pick, and the opposite part of the brow acting as a hammer, to break off a projecting piece of chalk or flint, the adjacent parts of which had been previously removed by the tine. Nearly the whole of the tools show signs of use, in the splintered extremity of the tine and in the worn and battered brow; and numerous cuts upon the horns give indications of the sharp edge of the fractured flint having come into contact with the pick and hammer part of the antlers. In one instance a piece of flint was firmly fixed in the back of the horn, where the appearance showed that it had been used in splintering the flint. The marks of both pick and hammer were thickly scattered over the walls of the galleries, and appeared as fresh as if made but yesterday.

The chalk had also been excavated by another implement, one of which was found in the first gallery, 4 feet from the entrance. It is a hatchet of basalt; and the marks of its cutting edge were plentiful on the chalk sides of the gallery in which it was discovered.

A very striking occurrence in connection with the working out of the flint was met with at the end of the first gallery, 20 feet 8 inches from its mouth. The roof had given way about the middle of the gallery, and blocked up the whole width of it to the roof. On removing this, and when the end came in view, it was seen that the flint had been worked out in three places, at the end, forming three hollows extending beyond the chalk face of the end of the gallery. In front of two of these hollows were laid two picks, the handle of each towards the mouth of the gallery, the tines pointing towards each other, showing, in all probability, that they had been used respectively by a right and a left-handed man. The day's work over, the men had laid down each his tool, ready for the next day's work; meanwhile the roof had fallen in, and the picks had never been recovered. I learnt from the workmen that it would not have been safe to excavate further in that direction, the chalk at the point being broken up by cracks so as to prevent the roof from standing firm. It was a most impressive sight, and one never to be forgotten, to look, after a lapse, it may be, of 3000 years, upon a piece of work unfinished, with the tools of the workmen still lying where they had been placed so many centuries ago. Between the picks was the skull of a bird, but none of the other bones. These two picks, as was the case with many of those found elsewhere, had upon them an incrustation of chalk, the surface of which bore the impression of the workmen's fingers, the print of the skin being most apparent. This had been caused by the chalk, with which the workmen's hands became coated, being transferred to the handle of the pick.

The galleries extended so far beyond the side of the shaft, that it is impossible they could have been excavated without the aid of an artificial light; and it is probable that some rudely-made cup-shaped vessels of chalk had been used for lamps. Four of them were found, one in the pit, the others in the galleries, in one case placed upon a ledge of the chalk just in the proper position for throwing light upon the place being worked. The only objection to their having been lamps is the absence of any staining, either from the smoke of the

wick or the oil or tallow which, if used as lamps, they must have held. They can scarcely, however, have fulfilled any other purpose; and during the long interval which has elapsed since they were left in the pit any discoloration arising from the stain of fatty matter would probably have disappeared; and if the wick floated on the oil, there would be no remains of its smoke upon the side of the vessel.

I now propose to give a fuller and more detailed account than has yet been done of the various manufactured articles found in the shaft and galleries, and of the circumstances under which they occurred. The first place is due to the picks, of stag's horn, both on account of their number and from the primary importance they claim as the implements with which the work of excavating the chalk and flint was performed. These tools were found in great abundance, as well in the shaft as in the galleries, and sometimes lying many of them together, in one instance to the number of eight. With two exceptions, they are all made from the lower part of the antler, after the fashion already described; and they vary in length from 14 to 20 inches, the greater number being about 16 inches long. The brow tine used for the pick end had a length of 11 inches in one case, whilst in others it was worn down by use to a point not above three inches long. The exceptional tools have been made from the cup end of the antler, one tine being used for the handle, and another for the pick. None of these tools were found until the pit was cleared out to a depth of 17 feet; but from that point to the bottom they occurred here and there indiscriminately. There were more, however, in the galleries than in the shaft. The whole number was 79, many of them much decayed and broken; of these only 11 were antlers from deer which had been killed, the rest being all shed ones. The animals to which they belonged had most of them been of large size, and much beyond the average of the present Scotch red deer. In this they correspond with the antlers found in the Fens, and show that the deer in those times attained a greater size, and probably, as a rule, lived to a greater age. This is only what might be expected; for the red deer is now confined to a small area in Britain, and that of a high elevation, and almost entirely devoid of any vegetation except ling and very coarse grasses, whereas in prehistoric and much later times it occupied a country abounding in wood, and possessing a much more varied and nutritious flora than is now possessed by the Highlands of Scotland. The large number of tools found in the workings, apparently thrown aside, many of them when scarcely used at all, implies a great abundance of deer at the time, whilst the relatively small proportion of antlers of slain deer to the shed horns would lead us to believe that the capture of the animal was not an easy task. It is, I understand, by no means common to find shed horns, even where deer are plentiful; and when the abundance of them found in the pit is considered in connexion with this fact, a very strong impression of the plentifulness of the animal in the district is conveyed. One of the largest of the horns measured 9 inches round its base, immediately above the brow. Besides the picks, there were thirteen of the cup end of the antler, and many whole and fragmentary tines, the remains of damaged tools, or of tines broken off in shaping out the picks. The tines, except in two or perhaps three instances, where they have been partly cut through, have been simply snapped off. Many of the picks showed that they must have been continued in use for a long time before they were thrown aside; for the horn was worn quite smooth in those parts where the workmen's hands had come into contact with it.

Two other implements of bone were discovered in the shaft:—a pin or awl,

$4\frac{1}{2}$ inches long, at a depth of 17 feet, made from the fibula of some small animal, probably a roe deer, split and then rubbed to a point; and a rounded piece of bone $4\frac{1}{2}$ inches long, and 1 inch in circumference, carefully rubbed smooth, and showing signs of use at the ends. It may possibly have been a tool for making pottery, or an implement for taking off the lesser flakes of flint, in making arrow-points and other small articles. It somewhat resembles, though longer, the piece of deer's antler, inserted into a handle of wood or fossil ivory, used by the Eskimo for flaking.

It has already been mentioned that a hatchet of basalt was found in the first gallery, and that the marks of its cutting edge were distinctly seen upon the sides of the gallery, showing that it had been used in excavating the chalk. It is of a type not commonly found in East Anglia, but very usual in Yorkshire; and it appears strange that, flint being so plentiful, a hatchet of any other material should have been used. I shall have occasion to revert to this fact in the sequel, when the question of the people who worked the pits is considered. It is $7\frac{1}{2}$ inches long, $2\frac{1}{2}$ inches wide at the cutting edge, the other end being sharply pointed. In one of the pits, at the opposite side of the series, which Lord Rosehill partially examined, two rude adze-shaped tools of flint were discovered, showing that the material at hand was occasionally used in working the chalk.

Numerous water-rolled quartzite and other pebbles were found in the pit, at various depths, abundance of which, coming out of the boulder-clay, are scattered over the surface of the adjoining ground. Fourteen of these showed, in their bruised ends and sides, that they had been used as hammer-stones, and probably for flaking flint, for which purpose, as I can testify from experience, they are well adapted. They are quite small, one being not above $1\frac{1}{2}$ inch long, and they could not, on account of their want of weight, have been used for breaking up either the chalk or the flint whilst in the bed. Besides these stones, seven large rounded cores of flint occurred, which also showed signs of having been used for hammering. From their size and weight they might have equally served for taking off large flakes, or for breaking the chalk and flint in the block. Similar round cores are found abundantly on the surface of the adjoining fields, and have the same appearance of having been used as hammer-stones. At the end of the second gallery a peculiar-shaped flint nodule was discovered, which is very like a cat's head. It has been used as a hammer, and is most conveniently formed for the purpose.

Some cup-shaped vessels made of chalk have already been referred to as being probably lamps. Of these, three, almost complete, and a fragment of a fourth, were found. One of them and the fragment occurred in the shaft, at a depth of 26 feet, another on a ledge at the end of the second gallery, and the third in a gallery branching from the east side of the first one. They have all been fashioned and hollowed with flint flakes; and the marks of the cutting are as distinct upon them as when they were first made. They are rudely formed, circular, with a flat bottom: one is about $2\frac{1}{4}$ inches in diameter, another about $2\frac{1}{2}$ inches, the first being $1\frac{1}{2}$ inch high and the second 2 inches; the cup part in each is not quite an inch in depth; the third one is rather larger and much more irregularly formed.

Some other articles of chalk were found, the use of which it is almost impossible to determine. One is a roughly-shaped, flat and thin piece, pierced by a hole about the middle, which has been drilled from each side. But for the softness of the material, it might be taken for one of the so-called tool-stones

found not unfrequently in Ireland, though more rarely found in England. It occurred at a depth of 18 feet. Another is not unlike part of a human leg or arm. The marks of cutting, probably with flint flakes, are distinctly seen upon it; and the broken ends show that it formed part of a larger article; the present length is 10 inches, and it is 14 inches in circumference. A third may have been part of a finger; it is $1\frac{1}{2}$ inch long, $2\frac{1}{2}$ inches in circumference, and is only a fragment.

A number of animal bones, principally broken so as to extract the marrow, were found scattered amongst the materials which filled in the pit. They were discovered from within 4 feet of the top to a depth of about 28 feet, but beyond that point and in the galleries they were absent. I am indebted to the kindness of Mr. W. Boyd Dawkins, F.R.S., for their identification. The animal whose bones are the most numerous, putting aside the red-deer antlers, is the ox, of a small species, probably *Bos longifrons*. A very remarkable and instructive fact connected with these ox-bones is their being to a great extent those of very young calves. It would appear from this that a principal element in the food of these people was milk, and therefore they could not afford to keep the calves, which must have consumed a large portion of what would otherwise have been available for the use of the household. The herbivorous animal whose bones are next in order of number is the goat or sheep, followed by the horse and pig, and, after a long interval, by two bones of the red deer. Of the carnivora, the only animal whose remains were found was the dog. Bones of several individuals were discovered, all of them having been old when killed; and it is not improbable that when they were no longer, on account of their age, of much use for hunting, they were then made to serve for food.

The bones were all of domesticated animals, a fact which proves that the people who worked the flint had passed beyond the hunting stage. A similar condition of things prevailed on the Yorkshire Wolds at the time of the erection of the barrows there; and an examination of a large series of animal bones from those burial-mounds shows that scarcely any are of wild animals.

From the fact of these various bones, hammer-stones, cores, and chippings of flint being placed indiscriminately amongst the materials which filled up the pit, we may conclude that the people lived close by the mouth of the shaft. If this was the case, the remains of their food and the waste pieces of the flint struck off or left unworked in the process of manufacture would naturally be thrown into the adjoining pit, which was being gradually filled up by the chalk and sand taken out of other shafts. The shafts must have remained open at different levels for a considerable time, and would be most convenient places for the depositing of rubbish of all kinds; and it is surprising that more numerous and varied articles were not discovered in the pit which was examined. The absence of such things in the shaft may be accounted for on the supposition that it was an accident incidental to that especial pit, or that the people who worked the flint were not in possession of many implements and utensils. The not finding any remains of pottery is very remarkable, because, from its fragile and yet indestructible nature, it is one of those things which usually marks the site of habitation longer and more abundantly than almost any other article. It is impossible to believe that these people were ignorant of its use.

Until the examination of the pit at Grime's Graves, no ancient workings for flint have been explored in England with reference to their former purpose, though there can be no doubt that many similar places exist throughout the

whole of the flint-bearing districts of the country. There are two instances in the county of Norfolk where discoveries have been made, indicating the existence of workings of the same character as those at Grime's Graves. One is situated only a few miles distant to the north east, at Buckenham, where, in cutting a deep drain to carry away the sewage from the house, at a depth of 18 feet, some hollows were discovered in the chalk. At the time these were supposed to have been the hiding-places of smugglers; but there can be no question that they are ancient flint-galleries. Many deer's antlers were found in them, which, from the description I have heard, corresponded with the picks already described. At Eaton, close to Norwich, deer's antlers, broken off in a similar way to those at Grime's Graves, were met with amongst chalk rubble; but they do not appear to have excited any attention, having been regarded as ordinary shed horns, which had not been made use of by man. It seems probable that the chalk rubble in question was the filling-in of shafts or galleries, and that the site of an old flint quarry was there met with. In much later days, Norwich was earlier the seat of a gun-flint manufactory than Brandon; and the trade still lingers in the neighbourhood of the city.

Many pits in the chalk have been known for long, or have been discovered from time to time, in the counties of Essex, Hertford, Kent, and Sussex, which it is needless to specify; and many different conjectures as to their use have been hazarded. Some of these will, no doubt, prove to be prehistoric flint-workings; and it is to be hoped that they will all receive a careful examination, with the view of testing this explanation of their use. The extensive series of pits within the camp at Cissbury, so fully described by Colonel A. Lane Fox in the *Archæologia*, will probably be found to be the place whence the flint was obtained, as they certainly are the site where it was manufactured. The Pen Pits, in Wiltshire, described by Sir Richard Colt Hoare, Bart., may have had their origin in a similar process of mining; and there are other hollows like them in the same part of England, which may have to take a place in the same category.

In Belgium, however, the site of a flint-manufactory and the workings from which the material was obtained have been carefully examined. The neighbourhood of Spiennes has long been known to abound not only in chippings and cores of flint, but in implements, whole and fragmentary. The greater part of the implements found there are unground; but a few ground ones have occurred.

These various articles have been discovered on the surface of the ground. In the year 1842 the ancient workings were first noticed; and the mode in which the flint was obtained, by a system of shafts and galleries, is very similar to that of Grime's Graves. Many tools of deer's horn were found in the workings, but not of the same form as those from the pits in Norfolk. The Spiennes tools have been made by cutting off the horn just above the brow tine, which has been left on, apparently to serve as a handle. They must have been used as hammers rather than as picks, and they are by no means such efficient implements as are those from Grime's Graves. The chalk in the Spiennes workings seems to have been excavated principally with tools made of flint, many of which were found in the pits and galleries there. As was the case at Grime's Graves, a single pin or awl of bone was discovered at Spiennes, where specimens of pottery, coarse and badly baked, occurred in abundance.*

* Alphonse Briart, Florent Cornet, et Auguste Houzeau de Lehaie, *Rapport sur les Découvertes Géologiques et Archéologiques faites à Spiennes en 1867, Mémoires, &c., de la Société des Sciences, des Arts, &c., du Hainaut*, année 1866-7 (Mons, 1868), p. 355.

The question remains for consideration, Who were the people who worked the flint at Grime's Graves, and when did that work go on? There have been only two periods during which flint of the quality found there has been quarried as extensively as these workings imply. One is the age when stone was the material used in the fabrication of weapons and cutting implements; the other and much later one, when it was used in the manufacture of gun-flints. It is evident that the latter period was not that when these pits were excavated; for the animal remains alone point to an earlier one, without taking into consideration the fact that, since the invention of firearms, flint and chalk have never been quarried by other tools than those of iron. There remains, then, the period during which stone was used for weapons and implements. This period, no doubt, was to a certain extent contemporary with the age when bronze was also in use for certain articles. But before that time a pure stone age prevailed, when no metal, except perhaps gold, was known. To this earlier period, the Neolithic, I think these extensive workings must be referred. The quantity of flint that has been obtained from the pits at Grime's Graves is so great, and the supply of material for implements was so very large, that it is difficult to understand how operations on a scale so extensive could have been required when the use of stone must have been, to a great extent, superseded by metal. During the time when both stone and metal were in use, flint was required more for smaller weapons, such as arrow-points, and for articles like scrapers, saws, and knives, than for larger implements such as hatchets. The perforated stone axes, which were no doubt in use together with bronze, are never made of flint. We may regard these workings, then, as belonging to the neolithic age, when metal was unknown, but when the grinding and polishing of stone was understood. The palæolithic age, when flint was most extensively used in the same district, cannot have been that of the working of these pits; for, apart from the fact that nearly all the drift implements have been made from surface flints, and those generally not belonging to flint of the quality obtained at Grime's Graves, the greater part of the animal remains found in the pit do not belong to the fauna of the drift, nor were any bones of the most characteristic animals of that period discovered there.

The time occupied in working the whole series of pits and galleries must necessarily have been a long one; for even with a large population such extensive operations could not have been undertaken in a short period. There could scarcely, however, have ever been a large population settled in the locality; for such could not have been supported—the supply of game, large though that may have been, being quite inadequate to afford food for more than a people of limited number, and pasturage for domesticated animals being very scanty and poor. The evidence supplied by the pits themselves very strongly supports the view that a long period of time must have been occupied in quarrying the flint. A single pit, with its galleries, would afford stone sufficient for the manufacture of thousands of implements, even allowing for a most lavish and wasteful expenditure; and when it is considered that the pits number about 250, some idea may be formed of the enormous quantity of implements which must have been supplied by the Grime's Graves workings alone. There is, however, good reason for believing that this series of workings is only one out of many others in the same district; and if such is the case, imagination almost fails to conceive the vastness of the supply of material for the people of the stone age provided by the chalk of Norfolk. But flint was worked by means of pits in other

chalk-bearing counties, besides being obtained on the surface, and in the shape of rolled pebbles on the sea-beach; so that we have to add many other sources of supply to that of Grime's Graves and other Norfolk workings. Taking these facts into consideration, we seem to require a very extended period for the neolithic age itself, as well as for the time during which the pits in question were in operation. We have no certain factor, however, at present, by which to measure that period.

Another and important question which arises is whether the flint was worked by a population in possession of the district, or by various tribes, who came there from different localities for the purpose of obtaining so essential a material for their wants. There are certain kinds of stone in North America and in Australia to which different tribes have been in the habit of resorting to obtain what they required for one purpose or another. In some instances the people of these tribes travelled from places at a great distance to that where the particular stone is found. Was a similar practice in use amongst the people of the neolithic age in Britain? A possession so valuable as an almost inexhaustible mine of flint must have been, could only have been retained by a people powerful enough to resist any attack which might have been made by neighbouring tribes, unless there was a political system so complete that the law of nations was in force in a stronger way than it was in times long subsequent to that in question. It appears unlikely that any single tribe could have been allowed a quiet possession of such a material by any common consent of the adjacent communities; and we must therefore conclude that, if these pits belonged exclusively to one tribe, the tribe in question must have been a more powerful one than any of its neighbours. We have no evidence to show how the country was subdivided at the time, if it was so parcelled out, or whether it was all in the hands of one large community or of a confederation of tribes. Be this, however, as it may, it seems on the whole more probable that the flint was the property of a single people, and not of the whole country, and worked by different tribes temporarily settling at the place from time to time. Not only would any occasional residents have found great difficulty in subsisting during the long extended period necessary to sink shafts and work galleries, but the regular and systematic way in which the flint has been obtained seems to require a set of workmen habituated to the mode of quarrying this stone. The finding of a hatchet of basalt, of a type not usual in the district, in one of the galleries, may seem to favour the view that the pits were worked by people from other parts of the country. It certainly does appear strange that if the flint was raised by a permanently resident population, a material so generally inferior to flint, and at the place so much scarcer, should have been used for making a tool to excavate the chalk. This particular tool, however, may have come into the hands of the workmen in some accidental way; or, from being superior in toughness to flint, it may have been a more useful implement than a hatchet of that stone. This single fact, even if it does favour the view of the pits having been worked by tribes foreign to the district, is not sufficient to set against the very strong probability, on the other hand, that the flint was the property of and worked by a native population, to whom it must have been a most valuable possession.

The quantity of flint obtained at Grime's Graves, as has already been noticed, was very great; and the traffic that went on in it must have been in consequence extensive. It is, however, most difficult to say what was obtained in exchange for it in the way of barter. If the pits had been worked during the

bronze age, we might understand that the medium of exchange was that metal ; but upon the whole, it seems most probable that they were in operation principally, if not altogether, before bronze was known. Gold, amber, and jet were all substances used by the people of that age, and which would have formed fitting materials for barter ; and it is possible that such and other like products were exchanged for the flint. But if we are to judge by the contents of the barrows in the neighbourhood, we must attribute great poverty in such articles to the people living there. Lord Rosehill opened seven barrows near Grime's Graves, finding in them deposits of burnt bones, and those only in one case placed in a cinerary urn ; but in none of them did he discover any thing associated with the interment. It is not necessary to suppose from this that the people were destitute of any thing in the way of ornament, &c. ; but it could scarcely happen, if they were rich in such things, that nothing of the kind should have occurred in so many burial-places as were examined. As the people who worked the flint appear to have subsisted mainly upon domesticated animals, it is not improbable that these formed the product given in exchange for the flint ; and indeed, on account of the poverty of the soil, it is not easy to understand how any large quantity of domesticated animals could have been permanently reared and sustained in the district.

MR. MORANT communicated a note on the painted scroll-work, of Norman or early English date, found on the vaulting of the Jesus Chapel, in the Cathedral, MR. ALFRED BARNARD, of Stoke Holy Cross, also reported as follows :—

“Some years ago it was found that the Norman capitals over the south-east door of our Cathedral Church were decorated in colour, and indications were also observed that the vaulting of the aisle adjoining was similarly treated. Very recently I observed that the vaulting in several other bays of the aisle still bears traces of painting : I need not remind you that the vaults are formed simply by the intersection of two hemispheres, and are without ribs or groins. In their places, however, are painted bands and double rows of serrated or indented ornament ; and in one bay in particular, I found the whole space between two of these *pseudo* ribs re-diapered with a lozenge, or some pattern of a similar description ; whilst in another instance it appeared that a quatrefoil had been painted at the intersection of these bands of ornament. These facts, although in themselves of comparative insignificance, cannot be entirely devoid of interest, as illustrative of the history or antiquities of our Cathedral Church.”

June 12th. A letter was received from the REV. H. T. GRIFFITH, reporting the discovery of some Roman pottery at Bessingham, near Cromer ; and the existence of a mound or barrow there, locally called “the Castle.”

The discovery of the interesting mural painting in Starston Church, in taking down the north wall of the nave, was reported by the Secretaries. This has been described and

illustrated in the present volume ; and has since called forth numerous observations from writers of experience, in the volumes of "Notes and Queries" for 1871.

MR. FITCH exhibited some flint implements, of the palæolithic class, found in pits at Milford bridge, Thetford. Pottery, apparently British, was found in the same pits.

September 13th, MR. FITCH exhibited a collection of Saxon antiquities found at Thetford, consisting of spindle-whirls, an ornamented clasp (?) knife, keys, &c., bone implements, and portions of urns.

December 1st. MR. FITCH exhibited the following antiquities : a bronze seal of John de Annersly, with a squirrel as a device ; a silver seal of the North family ; seven badges, some of them enamelled, with devices from the arms of the Morley, Harsick, and other families.*

1871, *March 14th.* The REV. J. GUNN exhibited a very large ground stone roller, from Mr. Ewing's chalk pits at Eaton, near Norwich ; length 1 ft. 3in., diameter 4 in. It was associated with ancient stag's horns.

The REV. J. J. SMITH exhibited a drawing of a coffin lid, found in Loddon Church, with a cross on it, and an unusual form of head, being rounded instead of square.

May 4th. MR. FITCH exhibited a small bronze figure, of Roman work, found at Caistor by Norwich ; and a bronze celt, from Thetford.

MR. MANNING exhibited a drawing of an altar stone in the Jesus Chapel, Norwich Cathedral, with the usual crosses at the corners, having another small square stone, of Purbeck marble, inlaid in it, having also the five crosses. *See*

* A Paper was read by Mr. Fitch at the Annual Meeting, 1871, upon these and other Badges exhibited by him.

"Notes and Queries," 4th Series, vols. vii. pp. 360, 399, 485; viii. p. 192.

July 7th. The REV. W. BOYCOTT reported that in repairing Burgh St. Peter's Church, near Beccles, some mural paintings had been found, "representing knights on galloping horses, and a sanctuary and altar," which he thought might be an illustration of the murder of Thomas à Becket. They were obliged to be obliterated, but a careful sketch was previously made of them.