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ON THE POTTER'S FIELD AT HORNINGSEA, WITH A  
COMPARATIVE NOTICE OF THE KILNS AND FUR-  
NACES FOUND IN THE NEIGHBOURHOOD.

By Professor T. M<sup>c</sup>KENNY HUGHES.

PART I.

In endeavouring to make out the early history of any country there is perhaps no line of enquiry which might be expected to give more trustworthy data than an examination of the potters' fields. The nature of the clay employed, the convenience of obtaining fuel, the facilities for constructing deep or shallow kilns, combine to impress a character of its own upon the ware turned out from any pottery.

The conservatism of primaeval man and of the labouring classes of all ages tends to keep up a fashion in form and ornament. Moreover the requirements of a district as shown in the kind of ware most in demand, and the law of supply and demand, must have been much the same with regard to such commodities through all time, and therefore we may expect to find in the potters' refuse-heaps a record of the mode of life of the people amongst whom they found a market.

If there was any national style, or any family tradition as to the manufacture, it would be likely to be handed on and to change but slowly, and, with increase of population and its wider dispersal, with greater facility of transport and growing reputation for the quality of the ware, the range of distribution would increase.

How important therefore for those who are trying to make out the history of the races that have successively been absorbed, and now form the inhabitants of our islands, to collect carefully and arrange so as to facilitate comparative study every type of ware manufactured in each centre, in order that, when we are examining the various settlements scattered over the country, we may be able to say that the inhabitants used partly, chiefly, or wholly, the ware of certain potteries which

have become for us what the various mints are to the numismatist.

Thanks to the Treasurer of the Cambridge Antiquarian Society, excavations have recently been undertaken by it, and the occurrence of what appeared to be a potter's field at Horningsea induced those to whom the carrying out of the work was entrusted to commence operations on that site.

In all excavations of this kind it is important to bear in mind that many questions not before the explorers at the commencement of their work may arise out of it or may be asked about it in the future in consequence of knowledge obtained elsewhere, and therefore what is done in any locality should be complete, and the whole of the evidence preserved. Moreover care should be taken as far as possible not to hinder later investigations by leaving spoil heaps where there is a probability of further research being desirable, or merely cutting a trench to find the objects in the upper soil without clearing it out to the bottom of the made-ground. The exact area dug over should be indicated on a plan, and, if the circumstances permit, by stakes or other marks on the ground. These rules were followed as far as practicable in all our excavations.

In connection with these enquiries it is interesting to note how many of our ecclesiastical and monastic establishments were placed upon or near sites previously occupied by the Romans. The original of Barnwell Priory was on the Castle Hill, which, as well as the site to which the Priory was removed in the 13th century, is full of Roman remains.

The ground round St Sepulchre's Church was occupied by them; Chesterton has yielded a great many Roman relics and has part of its ruined friary still standing.

Round Biggin Abbey Roman bronzes and other relics have been found, and we find that there was a monastic establishment at Horningsea<sup>1</sup>, in the immediate neighbourhood of which the important discoveries now described were made and the various

<sup>1</sup> See Rev. Wm. K. Clay, *History of the Parish of Horningsey in the County of Cambridge* (Camb. Ant. Soc. Octavo Publications, No. vii.).

interesting objects brought together by Mr Saunders and now in the Archaeological Museum were collected.

Let us first consider what is the nature of the proof that we have at Horningsea the site of a potter's field.

The most important evidence is the occurrence of fragments of vessels marred in the making, that is to say burst, owing to there having been bits of lime or other stone in the clay, or deformed because the clay was not sufficiently firm when put into the kiln. The ground is covered with a thick layer of wasters, and these are seen to be mostly of one class of ware, that is, such as could be made of the same clay and baked in the same kiln. A few fragments of imported ware of a different kind and remains of the food and food-vessels and various implements used by the workmen occur among them, but they are the exception. Lumps of clay are found which seem to have been kneaded by hand and still show the imprints of fingers and even the pattern of the skin, the importance of which as a means of identification has been pointed out by Mr Francis Galton. These lumps are about the size that would be put on a lathe at one time in making earthen vessels. Some may be samples of clay on trial. They are sun-dried and sometimes slightly fired, and it may be that some of them, especially when moulded into a ring, were used to support or prop up the vessels while still soft.

Another proof of the existence of a potter's field is the occurrence of kilns. Unfortunately in the case of Horningsea no competent observer has seen any of the kilns which the workmen are said to have come upon in the course of gravel digging upon the site of the supposed pottery, and we have to rely solely upon hearsay. Other kilns have been carefully explored in the neighbourhood of Cambridge, but it is very doubtful if not improbable that any of these were used for firing earthenware.

In the year 1875 the railway cutting at Fulbourn Station was widened, and as I was informed some 30 or more human skeletons were found lying at full length at a depth of about two feet. I saw fragments of two skeletons lying about but in place I found only the skeleton of an ox at (a), see Fig. 1,

and some small human bones at (*b*). These were both interments. The surface was covered by a layer of mould (*c*) to a depth of from two to six feet. Where excavations had been made through this soil the surface soon got levelled up, and it was not easy to tell how much of the surface-soil had been formed since the excavation was made.

Below the surface-soil were some natural pockets and pipes (*d*) of sand and gravel, easily distinguished by their form and contents from the excavations.

The greater part of the cutting was in chalk-marl (*e*), which however was much contorted and shown to be *remanié* by the occurrence in it of (*f*) pockets and lines of reddish sand, scattered flints and pebbles of quartzite. At the bottom of the cutting the undisturbed chalk (*g*) was seen in places.

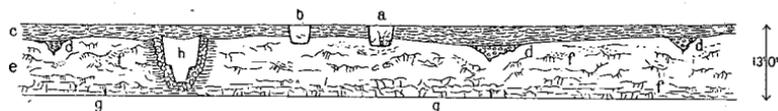


FIG. 1. RAILWAY CUTTING AT FULBOURN.

At (*h*) there was an excavation in the chalk-marl to a depth of about 13 feet, around the lower part of which a shelf ran. The whole was lined with stones selected from the gravel. There was a flue constructed round the base, and cross flues as if for the purpose of distributing the heat. Some coked wood and fern remained at the bottom, and the upper part of the chamber was full of burnt chalk, the top of which had been slaked into a soft white paste, while in the lower part it had run and crystallized in the interstices of the larger fragments, forming a hard chalk breccia. I found some broken Roman ware in the kiln but not of such uniformity of character as to indicate that it had been made there.

This looked like a lime-kiln which had been prepared, lighted, and then suddenly deserted.

Mr Carter<sup>1</sup> has recorded the occurrence of similar kilns and interments at an earlier stage in the progress of the work and

<sup>1</sup> Excavations, apparently of Roman date, recently discovered at Fulbourn by Jas. Carter, Esq., F.R.C.S., 1875 (*Camb. Ant. Soc. Comm.* iii. 313).

expressed the opinion that these furnaces were lime-kilns of Roman date.

At Chesterford, which is the most distinctively and exclusively Roman town we have in East Anglia, a kiln was discovered in 1879 in the pit immediately beyond the mill and public-house near the station, on the north side of the road leading up to the village. In digging gravel for road-mending the workmen came upon some masonry which they broke through, destroying the greater part of an elliptical window-like opening (see Fig. 2), which unfortunately happened to be on the side first approached.

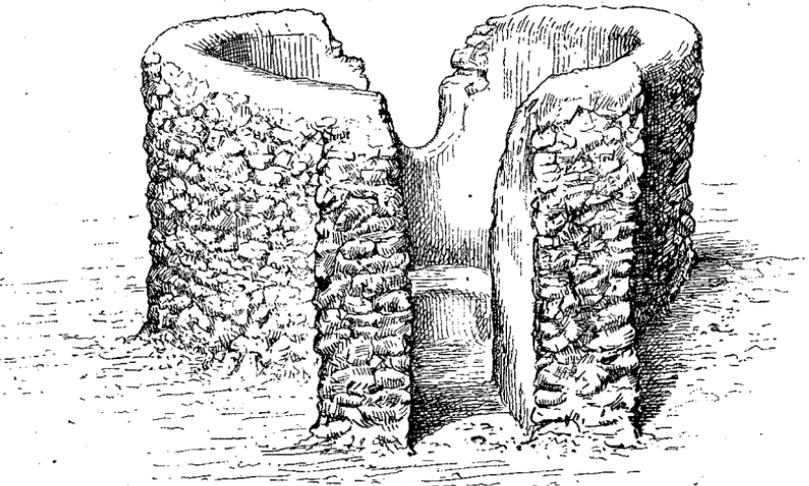


FIG. 2. KILN AT CHESTERFORD.

This masonry consisted of a wall lining a circular pit, the bottom of which was 15 feet from the surface. The top was destroyed and the pit, having been used in Roman times as a rubbish hole, was filled with the same kind of objects as those which occurred in rubbish pits all over the area (see Fig. 3). Its inside diameter was 12 feet at the top but decreased downwards, till at a depth of 10 feet its diameter was 10 feet 9 inches. Here a ledge (see Fig. 3)  $13\frac{1}{2}$  inches broad ran round the interior, reducing the diameter of the pit by just the width of the ledge. The pit then tapered off like the narrow end of

an egg with a flat bottom about 2 feet across. The plaster uniformly covered this ledge and the basin-like hollow of which it formed as it were the rim.

The kiln had been constructed by digging a circular hole in the gravel and lining it with a wall, 1 foot 8 inches to 2 feet in thickness, which was built almost entirely of stones out of the gravel or perhaps picked up on the flanks of the adjoining hills, the tops of which are covered with the boulder clay, which furnished far-travelled boulders to the gravel and to the surface soil.

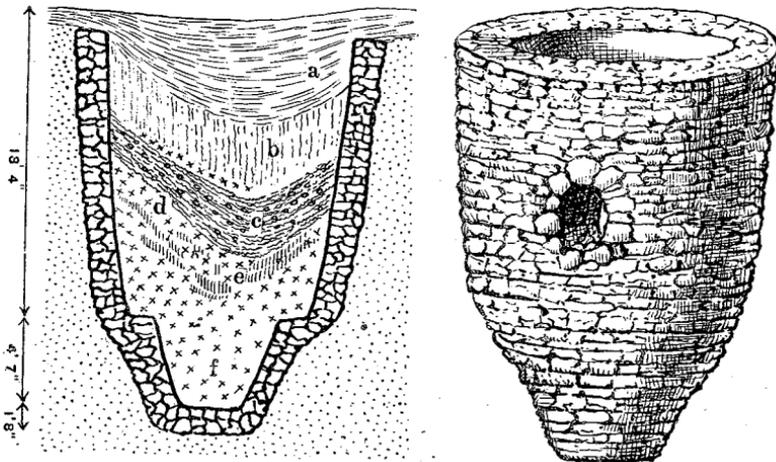


FIG. 3. KILN AT CHESTERFORD.

The stones consisted of carboniferous and other sandstones, gneiss, basalt, and, more rarely, flints and Jurassic limestones, both of which last were ill adapted for bearing the heat of the kiln and had often been nearly destroyed. A few Roman bricks were built in near the entrance. The whole of the masonry was cemented together with a slightly calcareous mud and the inside was plastered all over with the same, which was baked hard and flaked off easily. Opposite to the oval window there was a large door reaching down to the level of the ledge, with projecting plastered sides in continuation of and similar to the rest of the wall.

A passage cut in the gravel on the north side (see Fig. 2) led to the door and the gravel on either side of this passage was held up by a wall similar to that of which the kiln was constructed and similarly plastered.

On the opposite side of the kiln from the door at about 9 feet from the base was the elliptical opening mentioned above which appeared to have been about 2 feet in longest diameter (see Fig. 3) and carefully built in with blocks somewhat larger but otherwise similar to those in the rest of the wall.

The exterior of the wall was rough as it had been built up to the irregular surface of the gravel.

The top of the wall appeared to be broken all round so that we could not say whether it had been originally domed or open, and the large quantity of *débris*, similar to the wall with its burnt plaster, which was found inside especially near the base, proves that the kiln must have been originally much higher than when we saw it.

The kiln seems to have been given up in the time of the Romans so far as regards the purpose for which it was originally intended, and to have been used as a rubbish pit by them.

There was a slight depression in the surface of the ground and all the material that filled the kiln was looped downwards; showing that the lower layers had kept sinking in, especially towards the centre (see Fig. 3). On top there was a considerable accumulation of humus or common surface-soil (*a*) with some burnt earth and pottery at the base of it (*b*). Below this there was some blackish stony earth (*c*) with pottery, oysters, and snail-shells—also some bones and among them the horn core of a small ox (*Bos longifrons*). Then there was a quantity of burnt earth and stones (*d*), apparently the ruin of some of the upper part of the wall; the burnt earth being the plaster lining of the wall. Associated with this was a quantity of brown stony earth (*e*) like that seen outside the upper part of the kiln and in the adjoining rubbish pits, and suggesting that it was used as a rubbish pit while the upper part of the walls was exposed to the weather and was crumbling into the interior. The lower part was chiefly filled with the burnt

mud-plaster and the ruins of the wall (*f*) which represented the first collapse of the upper part of the kiln. All the relics from this kiln were carefully kept separate from other objects found in this area and were deposited in the Archaeological Museum. They were described in a communication made to the Society by Mr Jenkinson and myself and published in abstract in the Report of the Proceedings of the Society<sup>1</sup>.

A chamber constructed with so much care, having plastered sides and a smooth shelf running round the inside at 4 or 5 feet from the base was evidently intended for repeated and permanent use. But it appeared to have been given up and swept clean, so that no evidence of its original purpose remained, and, before the upper part of the wall crumbled in, it was used as a rubbish pit. There were no remains of unfinished vessels, no layers of charcoal at the base, no burnt human bones, no masses of slacked lime, caked in the basement or lodged on the shelf. Charcoal is almost indestructible and if there had been large quantities left we should have observed it, but we saw only the ashes and other burnt material of a kitchen midden scattered through the mass that filled the chamber.

For aught we could see in the contents of the kiln we might speculate freely as to whether it was intended for baking pottery which could have been conveniently stacked all round the centre on the shelf: or for a limekiln as suggested by its resemblance to the Fulbourn kilns, in which case the shelf or ledge would be useful to check the downward settlement of the great mass of chalk on to the fuel at the base: or for an *ustrinum* or crematorium, as we know that cremation was practised there but we do not know how it was done: or it might have been intended for an underground storehouse fired once for all to harden the plaster or periodically to dry and purify the interior.

Mr Wm. White in a letter addressed to me and published in the Report of the Proceedings of the Society<sup>2</sup>, contended

<sup>1</sup> *Camb. Ant. Soc. R.* xl. p. xvi.

<sup>2</sup> *R.* xxxix. p. xvii.

that its form was not that of any known pottery kiln of Roman date and strongly supported the view that it was a limekiln.

There is no doubt that the absence of any waste heap over the adjoining area which has since been cleared to a considerable distance beyond this chamber, as well as its general resemblance to the kilns at Fulbourn, support this view. Lime was largely used for mortar and plaster at Chesterford, and in those days could not well be carried far, therefore it is probable that there would be limekilns at hand, while there does not appear to be any clay close at hand of the kind usually employed by the Romans for the manufacture of earthenware. Earthenware moreover could be easily carried a great part of the way by river.

This interesting relic has not been preserved. I purchased it for £3. 10s. 0d., but when I visited the pit soon after I found that it had been pulled down and the large stones of which it was constructed removed. There was no use crying over spilt milk, and I had not time to follow the matter up any further.

There is strong reason for believing that there was a potter's kiln of Roman date somewhere by the alluvium between the grounds of Jesus College and of Sidney<sup>1</sup> from the character and condition of some pottery which has recently been found there, but no trace of a kiln has yet been discovered.

Some small furnaces have also been recently found in the War Ditches<sup>2</sup> near Cherryhinton, but they are more probably cooking ovens.

The potter's field at Babin or Babylon, near Ely, as far as can now be seen belongs to a quite recent period and different methods.

So it really appears as if in the present state of our knowledge Horningsea offers the only example of an ancient potter's field in our district, but unfortunately where we are sure of the potter's field we have to get our information as to the kilns from hearsay, and where we are sure of our kilns they were not potters' kilns.

The surrounding district shows evidence of occupation

<sup>1</sup> See *post*, p. 194.

<sup>2</sup> *Ibid.* p. 235.

through the Palaeolithic, Neolithic, and Bronze ages, and the actual site which we are examining is full of Roman remains.

We have no record of what it was called by the British or Romans. The Romanized British must have carried on the traditions for a short time. Then came the Saxons, and before the 9th century was out they in their turn were harried by the Danes.

The name<sup>1</sup> is by some derived from Horning, the son of Horn, and by others from Horningas, the descendants or clan of Horn. That however is not of much importance for our present enquiry. What is however of special interest for us is that all writers are agreed that the last syllable whether written *ea* or *ey* signifies an island. The small islands in the Thames are to this day called *eyots* or *eyts*. It may be that a place on the waterside and inaccessible for other reasons on the other side would be called an eye. There is a town in such a situation called *Eye* in Suffolk, and near it a manor named *Eye Hall*. One of the two hamlets anciently belonging to the parish of *Horningsey*, as we learn from the *Rotuli Hundredorum*, was designated *Eye*, and in this hamlet was a manor, styled sometimes by corruption *High Hall*, but more properly *Eye Hall* as the name used anciently to be written.... The island would appear to have soon ceased to exist as such. Therefore though *Horningescie* is in *Domesday Book* said to possess a mill, and from the date it could only have been a watermill, it may have been across some small stream quite independent of any which originally bounded the island or *ey*. The *Inquisitio Eliensis* asserts that there were two watermills at *Horningsea*. The island, the seat of the *Horningas*, constituted one of the two divisions of the parish; the other which was more than twice its size, so soon as the whole came to be considered from a parochial point of view (as it did, at least, by the year 700) being made up of that skirt land which bounded in some measure the island.

We frequently read of the parish of *Horningsea* in the *Liber Eliensis* as occupying, at all events in the ninth and

<sup>1</sup> Wm. Keatinge Clay, *A History of the Parish of Horningsea in the County of Cambridge* (*Camb. Ant. Soc.*, 8vo. Ser., No. vii.) 1865, p. 1.

tenth centuries, a conspicuous position among the inhabited districts round Cambridge, and learn that there existed here *monasterium regiae dignitatis* before 870, when the country was laid waste by the Danes.

We find the first abbot of Ely, Brihtnothus, residing occasionally at Horningsey in the tenth century, most likely at the monastery, or conventual church.

The soil of Horningsea was so good that the tenant had to furnish to Leofsinus, Abbot of Ely (in the time of Canute about A.D. 1030), about double as much as was required from others towards the maintenance of his monastery. Thus we have evidence more or less complete of the prosperous condition of Horningsea in the eighth, ninth, tenth and eleventh centuries.

Clayhithe is considered part of Horningsea, and its name is said to be "justified by the existence of a large manufactory of bricks and tiles, for which there is here, and always must have been, an abundant supply of the proper material." The clay referred to here is the Gault, and the probability is that the site was chosen not so much on account of the abundance of the *clay* as of the convenience of the *hithe*.

All this shows that the area was occupied as far as we can learn continuously down to the water's edge, at any rate from Roman times to the present day, and excavations for one purpose or another, mill leets, foundations, wells, &c., must have made the inhabitants well acquainted with the nature of the soil and the occurrence of alluvial clay suitable for pottery and Gault for bricks and tiles.

Creeks for loading and unloading boats have been cut from the river far inland towards the site of existing buildings, that is a little further north than the area over which the waste was thrown, and therefore presumably nearer to the actual pottery with its lathes and kilns. Some of these short canals may have been dug originally for the alluvial clay, which, as may still be seen in the banks, was of a lead colour, uniform texture and consistency, and altogether well adapted for the manufacture of earthenware.

I have already called the attention of the Society to the

interesting remains discovered in this locality<sup>1</sup> and have gathered myself and secured from Mr Saunders large collections which have been placed in the Museum, but I fear that the vicissitudes through which they have passed owing to the want of room and consequent difficulty in keeping the relics from different areas apart, has now lessened the value of this collection of pottery for historical purposes.

A terrace of gravel runs along the margin of the alluvium here, the next rise to the east being due to the Chalk-marl coming on over the Gault. In digging gravel along the lower terrace the workmen exposed first a surface-soil from 1 to 2 feet or more in thickness which indicated a considerable antiquity for the underlying deposit, but seeing that over this long-cultivated area it had not accumulated under natural conditions, this cannot be accepted as a perfectly trustworthy measure of time. Under the surface-soil was a layer made up in places almost entirely of potsherds. This attained a thickness of 18 inches opposite the old cottage, but thinned out north and south. It looked as if the rubbish may have been heaped up when first thrown out, but was spread at some subsequent time and the ground levelled for agricultural purposes.

The pottery of which it was composed consisted for the most part of fragments of large vessels of a coarse rough ware, but contained a considerable number of fragments of a much better quality and rarely a small bit of Samian. There was evidently some household rubbish as well as the wasters from the kilns lying about.

There is often a rough ornamentation such as incised markings or a frill round the neck. They were of every size, from vessels that probably stood two feet high down to the smallest crock used for cooking purposes. There was also a great variety of form from that of a common earthenware bread-pan to a more or less globular vessel with a constricted neck.

Some of the smaller vessels, for which a finer clay was used, were more carefully made. There were basins and pans and bottles and jugs of a dark-coloured ware on which a pattern

<sup>1</sup> R. LXV. xxxiii. May 4, 1885.

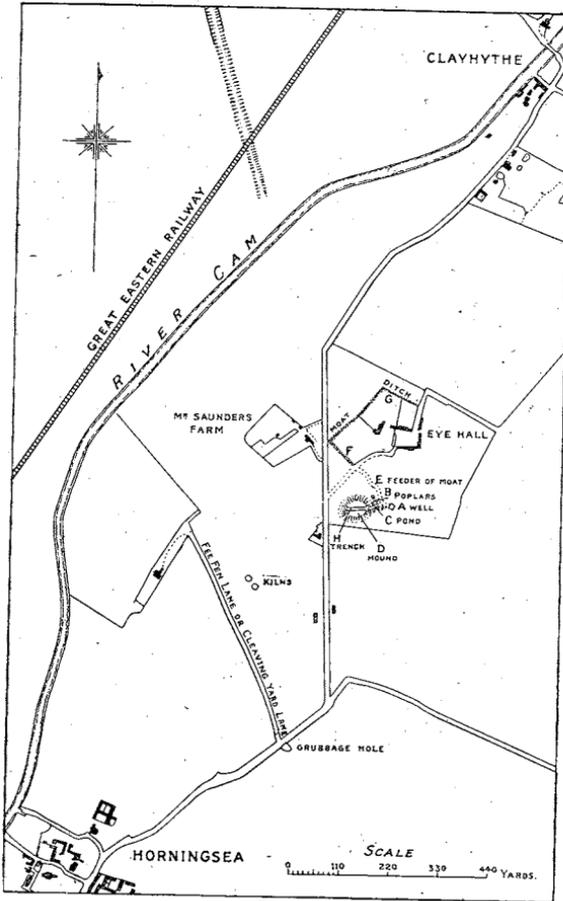
was produced by alternations of black and grey, and less commonly red and yellow, and sometimes by incised lines and crisscross markings. Pieces showing any kind of vitreous glaze were exceedingly rare, and those that did occur appeared to be due to accidental fluxing of the surface by over-firing than by the application of any matter such as salt or lead with a view to producing a glaze.

A smooth shining surface, which seems to have been given by rubbing or polishing on the lathe, was however sometimes introduced by way of ornament, the black burnished portion alternating with the original rough grey surface. Rarely bands of darker colour laid on vertically seem to indicate that some metallic or carbonaceous substance was painted on to produce a 'chiaroscuro' ornament and to assist the burnishing.

The site of the potter's field as far as already known is confined to a small area on either side of the road south of Eye Hall and of Mr Saunders' farm, but the collection made by Mr Saunders was chiefly from other sites near by. Some was from the garden on the north-east of the house, where, as Mr Saunders informed me, many Roman remains have been found which indicate a residence of people of wealth and taste;—such as highly decorated Samian bowls, black ware ornamented in slip and resembling the best Durobrivian, bronze cooking pans, fibulae, &c., &c. The relics found here were of a higher class and occurred in quite a different manner from the fragments of rough pottery which were spread over the surface of the ground on the south side of the farm.

Some of that which found its way into Mr Saunders' possession was, as I was informed, obtained during the extensive excavations for coprolites for which the whole of the rising ground east of the river was turned over, yielding a rich archaeological harvest, only an infinitesimally small share of which was secured for the University Museums. As far as I can learn none of the bronze and Samian vessels were found within the potters' field.

In at least two places over this area, at about 3 feet below the surface of the ground as I was informed, the workmen came upon what they called ovens. These, as de-



EXCAVATIONS AT HORNINGSEA.

scribed to me, were, beehive-shaped buildings about 8 feet in height. They were approached by a steeply-inclined path excavated in the gravel and entered by an arched door reaching about half-way up the building. Considering the water level and the depth of the excavations these estimates are however probably somewhat too large. They were filled with rubbish like that which lay around them, but, alas, there is no record of the details. I made a large collection of the varieties of ware found in the best part of the pit and placed them in the Archaeological Museum.

Such being the history of the district and such the character of the objects found upon the site, it was thought desirable to make a systematic exploration of the margin of it to see whether we could find a clue to any part of its history, and with this object in view we broke ground on the east of the road in the field south of Eye Hall (see plan, p. 187).

I must here acknowledge the kindness and hospitality of Mr Baily and his manager, Mr Nelson, without whose co-operation the work could not have been so successfully carried on.

South of Eye Hall the ground has been much disturbed, though fortunately the first field, in which the most interesting remains were to be expected, was not turned over by the phosphate diggers. We can therefore still see the reason for most of the existing features. Before the phosphate diggings around had altered the drainage of the area, it is evident that considerable springs were thrown out here and there from the base of the Chalk which rests on the impervious Gault. One of these springs was caught in the well or tank (*A*) which, though now dry, still exists on the brow of the slope at the back of the group of poplars (*B*). This spring fed a pond (*C*) below it out of which rose a mound (*D*) which was the principal object of our investigation on this occasion.

At some later time the water was diverted along a channel (*E*), which it is still easy to trace, in order to feed the moat (*F*), but the area of the pond was still permanently or occasionally under water, and the last episode was the drying of this pond and the adjoining low ground, which was still water-logged in

wet seasons, by a drain which was cut about the year 1884 to the south-west corner of the field.

We made no excavations along the moat (*F*) or the lighter ditches (*G*) to the north and east of it. They look like the moat and outer bailey of a mediaeval fortified mansion. The present house is not exactly on the site of the older buildings of which portions remain, but it is probable that the earthworks are much older than any masonry now seen within them.

Considering how rich the district is in Roman remains one would like to speculate on the possibility of our having here a Roman camp with its procestrium, but this is mere guess-work; as it stands, the modified structure is certainly mediaeval.

We dug some way down into the well (*A*) on the brow of the hill, east of the triangular hollow with poplars (*B*), and cleared the west face. It was found to be constructed of very strong coarse concrete faced with bricks and cemented on the inside and outside. It was therefore obviously intended to hold water. Mr Saunders informed us that he had cleared it out and that it was about 5 feet in depth and similarly cemented down to, and all over, the bottom; that he found no remains of any kind which would indicate its age; and that some dogs have been to his knowledge subsequently buried in it. We did not therefore think it worth while to go to the bottom of it again.

The bricks were red with a stain of creamy white penetrating to some depth and indicating that they had been set while dry and absorbent in a very thin mortar. They were small and thin, in form and size resembling the Ely bricks of about two centuries ago.

We next turned our attention to the mound (*D*) which rises out of a shallow circular depression in the field west of the poplars. We approached this, bearing in mind several possibilities:—

(1) That it might be a kind of island-dwelling protected by the marsh which we have above referred to as caused by the spring which was subsequently diverted.

(2) Seeing that we were certainly near the site of an ancient potter's field, it might have been raised round and over a subterranean kiln, and

(3) It might have been a raised floor on which the pottery was dried previous to being fired.

We therefore decided to cut a trench (*H*) across it from side to side due east and west through the middle, carrying it down to the level of the undisturbed gravel or Gault, whichever it might be found to rest upon.

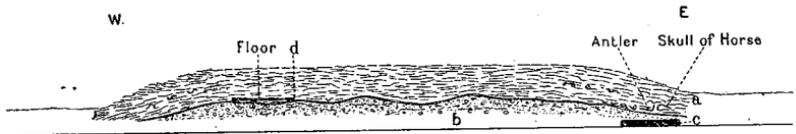
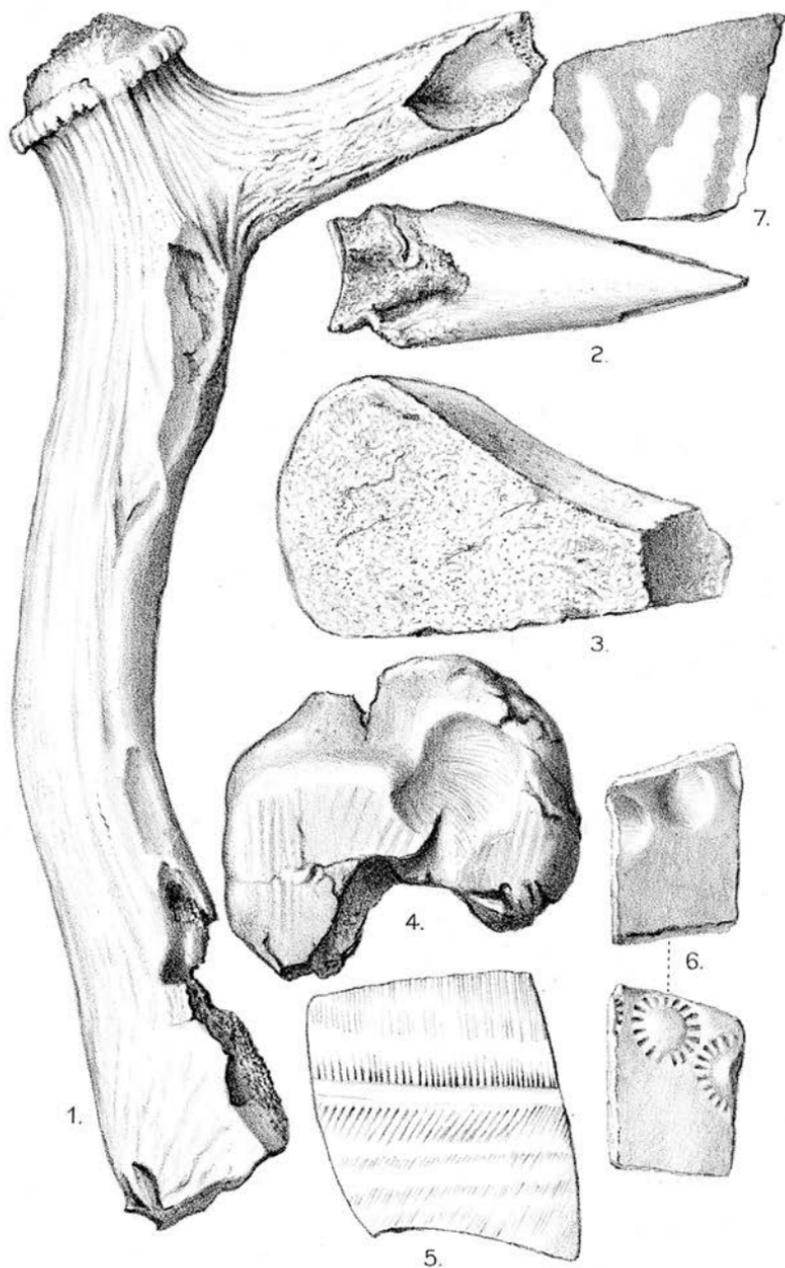


FIG. 4.

A pit was sunk to the Gault (*c*) at the east end of the mound (see Section, Fig. 4) which showed mould (*a*) with fragments of pottery and bones to 3 feet 10 inches, then sand 6 to 10 inches on Gault. This carried us about 3 feet below the level of the grass outside the mound. The proportion of sand in this part of the gravel was very large. The Gault was weathered and stained, showing that we had here the natural surface.

Between the centre of the mound and the west margin our trench crossed a floor (*d*) of fine clay which looked as if it had been exposed to great heat; but there was no charcoal or other evidence of fire in the surrounding earth. It was near the bottom of the made-earth and rested on a thin layer of mould such as might have grown naturally upon the surface of the sand and gravel. All the mould above it seemed to have been artificially heaped up, and here and there were lenticular masses of pond-mud full of large freshwater shells, *Planorbis corneus*, *Paludina vivipara*, &c., the condition and age of which showed that they had grown in a place permanently under water, and suggested that an excavation within the area of the pond might yield some very important results. This floor ran in a path or belt about 18 inches to 2 feet broad obliquely across our trench in which it was exposed for about 7 feet. It might have been the raised floor on which the vessels were placed to dry before being fired in the kiln. Whether it was made of burnt material or baked by lighting a fire on it or represented



OBJECTS FOUND AT HORNINGSEA

the floor of a kiln, it is, with the small evidence before us, impossible to say.

The mould (*a*) was of uniform character throughout and was all of made-earth, the pottery occurring down to the bottom where it rested on the sand and gravel. The fragments of pottery occurred throughout, but were most numerous about half-way down and at the base. We did not detect any difference in the character of the pottery at the different levels. The surface of the gravel was irregular, the thickness of mould varying from 3 feet to 4 feet 6 inches.

At the bottom of the mould, on the east margin of the mound, we found a large quantity of pottery and a considerable number of bones, among which we recognised ox, sheep, red deer and horse, of which there was a skull. Here we found a pick (Pl. IX., Fig. 1) made of the antler of a red deer which had been cut off immediately above the third point and whittled to form a convenient handle, while the second tyne also had been removed leaving the brow tyne only to form the head of the pick. This had also been chamfered off on one side so as to form an axe-like edge instead of a point as was more usual. This primaeval form of implement has been found also in tumuli of the bronze age at Upper Hare Park and in the fens and in the Lake Dwellings, and was used for excavating the chalk at Cissbury and Grimes Graves.

The pottery was similar to that previously found on the other side of the road; it did not however occur here in a thick continuous layer but sporadically throughout the mould or in small lenticular deposits here and there. Some points not observed before were noticed here as might be expected where the variety is so great, and the quantity of fragments found not only now but during many previous examinations of the adjoining area is so large that some generalizations are justified.

In the first place most of it appears to have been lying about on the surface so that the chances were that any large piece that did not lie flat and was not readily covered but offered projections and protuberances, was broken up and the fragments scattered about. Very rarely have any two pieces of

the same vessel been found except in the case of those which had obviously been just broken in getting them out.

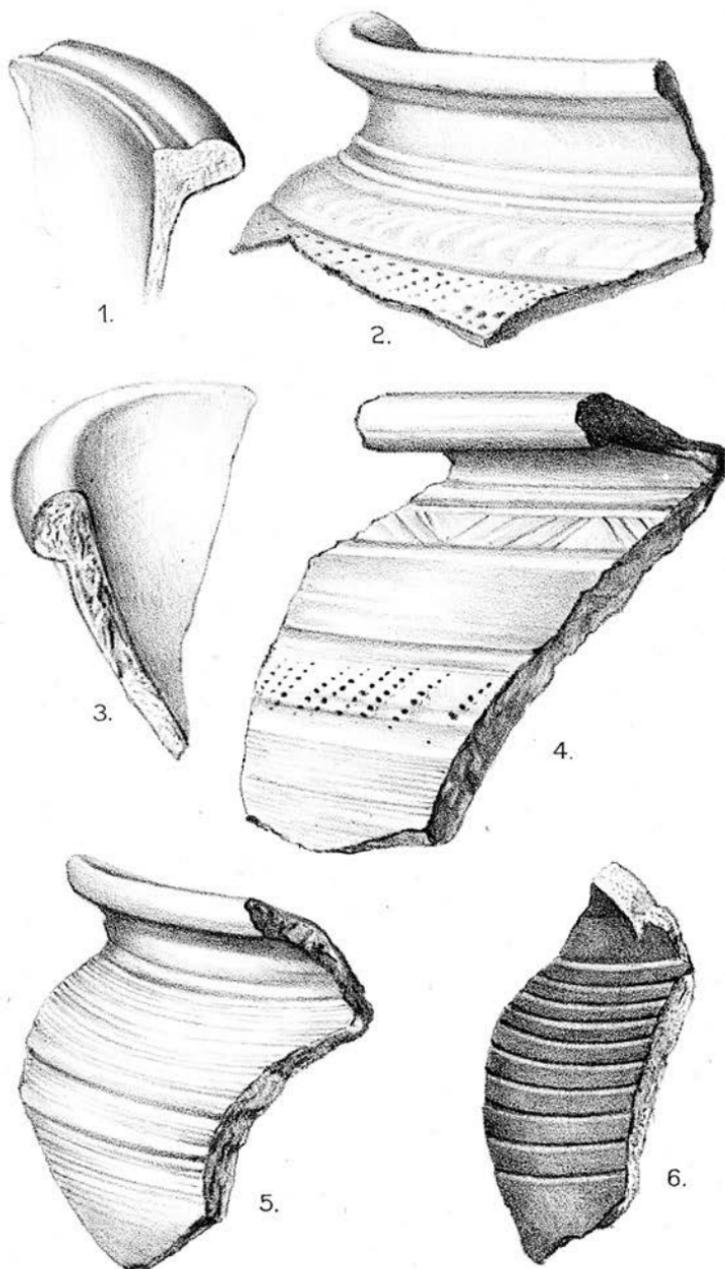
By far the greatest part consisted of fragments of coarse ware and of large vessels (Pls. X. and XI.)<sup>1</sup> which seem to have been moulded on a lathe, while a free hand was used for form and ornamentation. It is very difficult to find any two pieces of rim, for instance, exactly alike. Some of the pieces are about an inch in thickness and pieces half an inch thick are common. The rim is either widely developed with sometimes a pinched ornament (Pl. XI., Fig. 6), or strongly recurved (Pl. X., Figs. 9, 10, 11), in both cases allowing a good grip as if to facilitate the lifting of the vessel by its rim. This suggests that these large vessels may have been buried with grain or other provisions because it would have been very difficult, without such a rim, to lower the vessel into the hole intended to receive it or to haul it out again when necessary. There is every gradation of size from these large pans down to the small olla only a few inches in height.

The ware is generally of a lead-grey colour throughout, but occasionally, both among the larger and smaller vessels, we find some burnt red throughout, or burnt red on the surface only, or in patches. In some cases this may be due only to the accident of a current of air having got through part of the kiln, and produced a greater oxidization of the iron in the clay; as we see that where a clamp of white bricks has cracked, the bricks opposite the opening are burnt red.

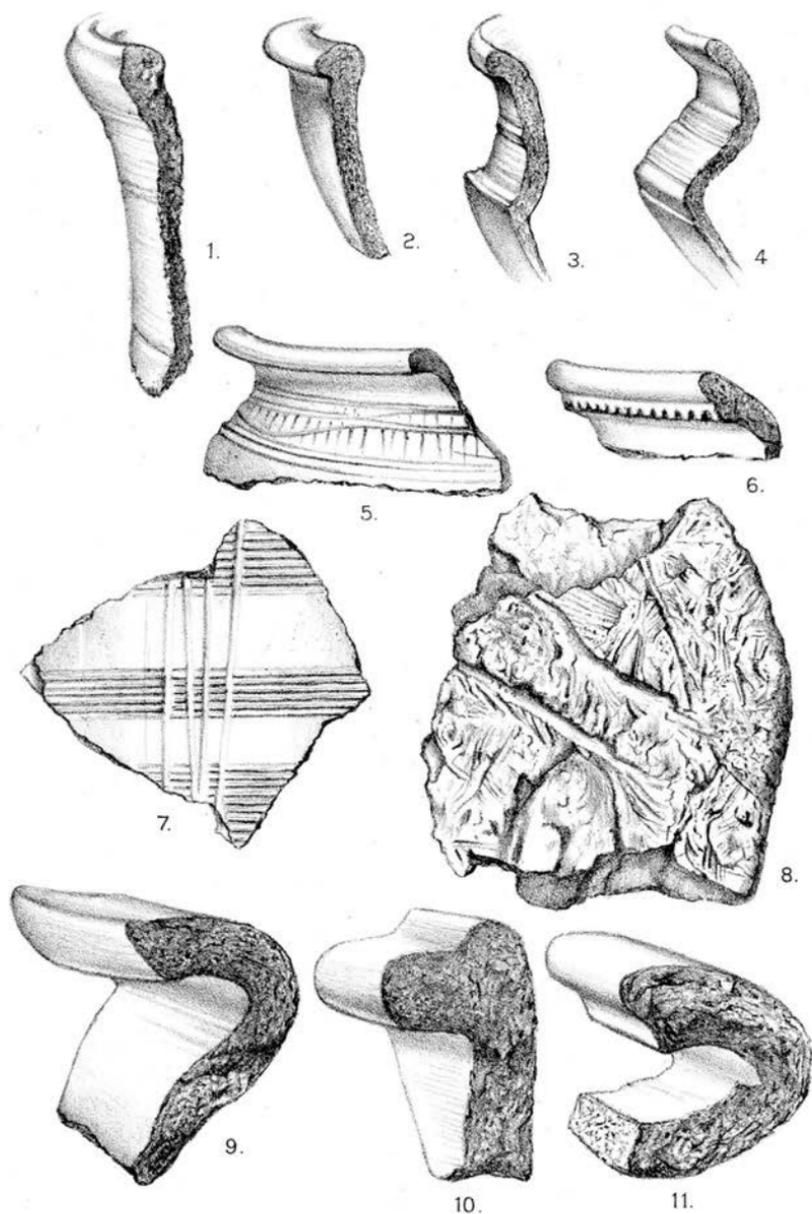
A few fragments of a higher class of pottery occur sporadically. Samian is very rare, as is also the fine wedgewood-like ware with the neck or other portions burnished on the wheel. One piece showed a sun-like *repoussé* boss about  $\frac{1}{2}$  inch across with short incised rays all round (Pl. IX., Fig. 6), while others were ornamented with vertical bands and dots about  $\frac{1}{4}$  inch broad. These remind us of Saxon work and suggest that the manufacture may have been still carried on here long after Roman times.

A very common object found with the fragments of pottery is a flat stand of dried clay which seems to have been formed by

<sup>1</sup> The figures are  $\frac{1}{2}$  natural size.



HORNINGSEA POTTERY.



HORNINGSEA POTTERY.

rolling a lump of clay into a ball and then squeezing it flat and pinching it into any required shape with the fingers. When it did not lie flat and give a horizontal surface above, it was pinched out into a kind of calkin or foot, as was commonly done in later times in the case of mediaeval vessels which had sagged a little in the drying. We can only guess at the use of these objects. They do not appear to have been baked, so that they were not used as stands for the vessels in the kiln, although they may have been intended as stands to lift the vessel above the ground on which it was placed to dry. These are special examples of the lumps of clay mentioned above (page 176) which show even the skin markings of the fingers that pinched them into shape.

There was also a fragment of a very thick basin-shaped object in sandstone (Pl. IX., Fig. 3). It was carefully ground all over and had been subjected to the action of fire. This may have been a kind of mortar but it is too small a fragment to furnish satisfactory evidence as to its use.

A fragment of a horse-shoe was found which showed the general form and bulging margin, due to the hammering out of the holes for nails, which is said to characterise the earliest known horse-shoes of Gallo-Roman times<sup>1</sup>.

These small bits of evidence taken together with the traces of native feeling in some of the ornament and the quantity of very coarse ware suggest that this potter's field began somewhere in the early ages of Roman occupation. The Horningsea waste heap furnishes us with samples of most of the common ware found at Chesterford, our most typical Roman station, and also of the common ware found in the War Ditches which I would refer to a much later date than Chesterford. While on some fragments we see an ornamentation suggestive of still later times, and also find a large quantity of ware exactly like that which occurs in the early mediaeval middens and laystalls of Cambridge. We have also negative evidence, but still evidence of a very trustworthy kind, that this potter's field ceased to be used in early mediaeval times, for there is in it

<sup>1</sup> See *post*, p. 256; also George Fleming, 'Horse-Shoes and Horse-Shoeing,' 1869.

no trace of the glazed pitchers and pans and jugs with a pinched base which are characteristic of post-Norman crockery.

In discriminating between these different classes of ware we are dealing with minute details which it is very difficult to explain even with the help of illustrations, and this shows the importance of classifying and labelling all the specimens found; and preserving them in such a manner that they may be readily accessible for comparison.

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### ON SOME INDICATIONS OF A ROMAN POTTER'S FIELD NEAR JESUS' COLLEGE.

By Professor T. MCKENNY HUGHES.

One of the most suggestive finds of ancient pottery that have recently come under my notice was that made in the early part of the year 1901 on the east or far side of the King's Ditch as it crosses Jesus Lane from the grounds of Sidney College and runs down Park Street by the Friends' Meeting House.

I have already described the mediaeval pottery found in the ditches of King John and Henry III. which here cross Jesus Lane and have referred some of it to the type that was the result of native work modified under Roman direction, and which, I take it, disappeared but slowly before the early Scandinavian and German incursions.

Over the adjoining area we have plenty of evidence of Roman occupation from the pottery and other remains; they cover the area in the neighbourhood of the Castle; they are common on the border of the marsh along Bridge Street and Sidney Street; they are abundant in Barnwell, and occur at intervals along the banks of the river here and there far out into the Fens wherever rising ground could be found.

The only limitation was that, although banks and causeways may have been already made in places, the Fens generally were not yet so far reclaimed as to make it possible for farmers

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