

THE
RECENT DISCOVERY OF POTTERY

AND
ANIMAL REMAINS

AT THE
READING GAS WORKS,

BY
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THE remains which are now brought to your notice were found during last summer while some excavations were going on at the Reading Gas Works. They consist of pottery of various kinds and periods, together with the bones of animals, some of which are now, and, indeed, have been long extinct in England; and implements of various kinds, manufactured from bones which belonged to animals of the same species as those among which they were found. A considerable number of the bones were thrown out in making a narrow cutting along the south margin of the Kennet River; but the larger proportion, including the rarer specimens, were met with on the north edge of the stream. They were carefully collected by Mr. Smith, Foreman of the Gas Works, to whom we are indebted for the preservation of objects which would otherwise have been lost. As the section was made for the purpose of finding a solid basis for the iron bridge now being constructed over the Kennet, the superstructures were cut through down to a depth of about 18 feet, the floor of the Thames valley at this point appearing to consist of a sandy marl with some chalk-flints. Considerable difficulty attended the efforts to make an accurate diagnosis of the stratifications on account of the necessity of buttressing the face of the embankment with planks as the work proceeded; but the follow-

ing, consisting of about 17 feet on the whole, will be found practically sufficient, arranged as expressed in the accompanying diagram :—

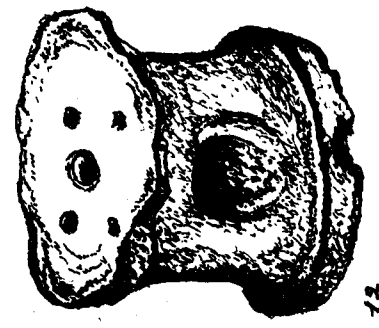
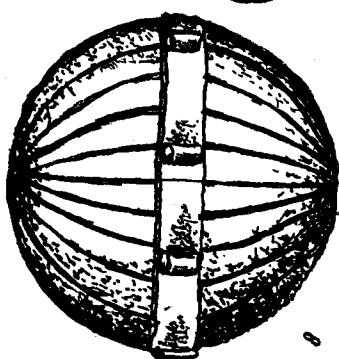
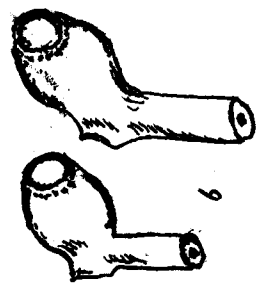
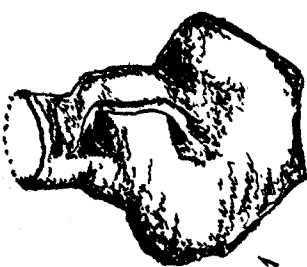
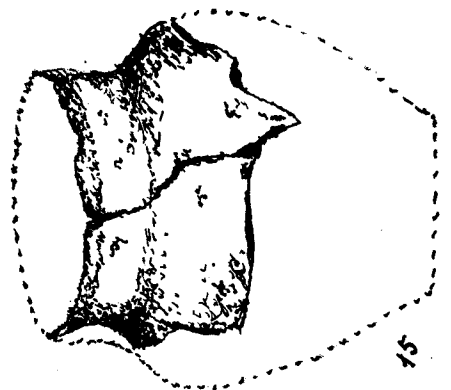
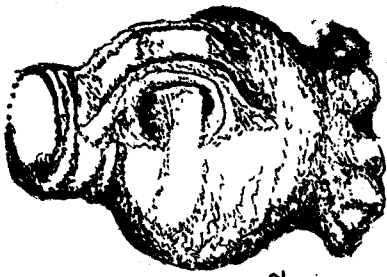
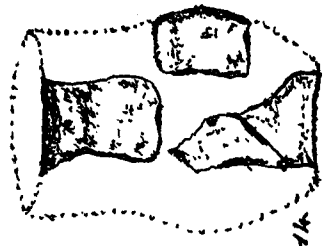
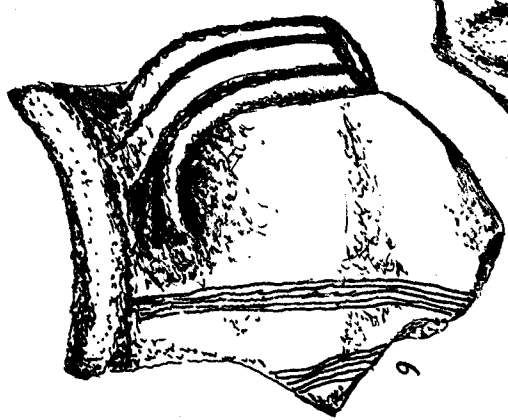
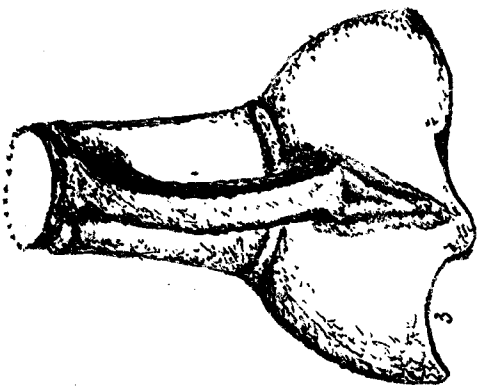
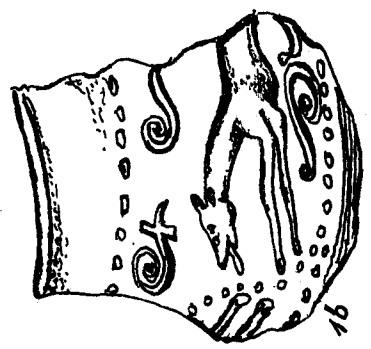
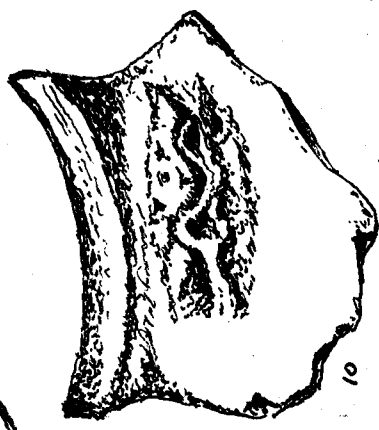
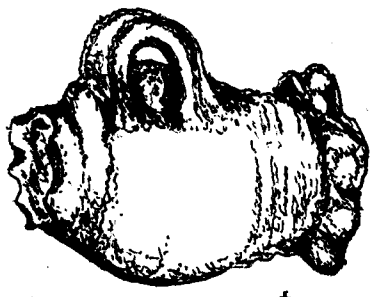
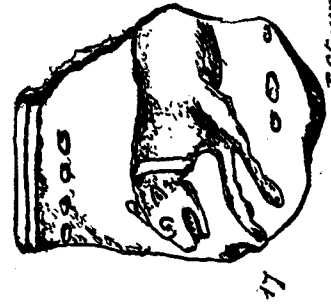
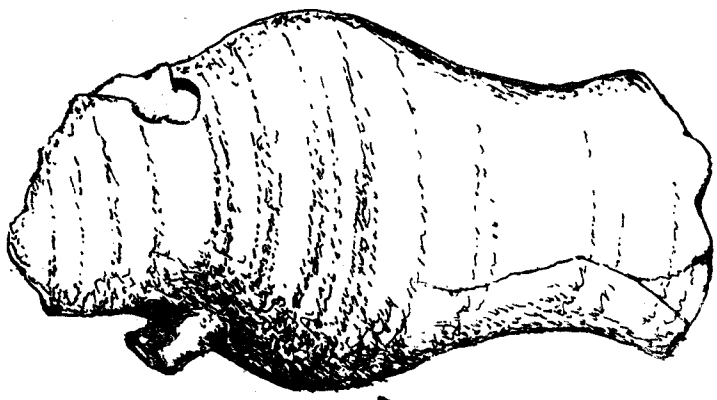
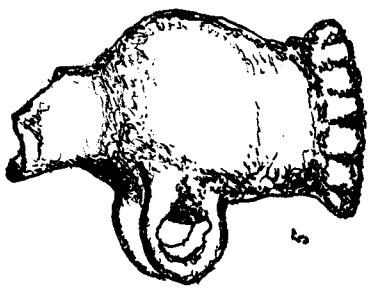
Top Soil—Black Mould, Peaty	3 feet.
Bed of Old Kennet River, consisting of Mud, } Sand, and Coarse Gravel	5 "
Peaty Matter	3 "
Shell-Marl, consisting of Comminuted Chalk, } Coarse Sand, finer Gravel, land and } river Shells, &c.	6 "

The whole 17 feet.

The remains may be considered as naturally falling into three groups, although there could have been no discontinuity between them, representing historical stages superposed one on the other, and ranging downwards from a period comparatively modern almost to pre-historic times. The first is identified with the base of the black mould, and the silt of the Kennet bed ; the second by the base of the Kennet bed, and the upper part of the peat ; and the third by the base of the peat, and the whole of the shell-marl. There is no doubt that in cutting out and dredging some of the articles became intermingled ; but on the whole the sequence was sufficiently well maintained, as the relics themselves demonstrate.

Of the contents of the upper division, animal bones formed a large portion ; but, as these consisted of the bones of domestic animals which had been used for food, they require no particular detail. Other relics are, however, of considerable scientific value in introducing almost the dawn of art in this country, in a form of rude pottery, of which there are several examples, mostly fractured, consisting of bottles and jugs of different kinds (Plate I, Figs. 1, 2, 3, 4, 5), the plates and dishes at that period being chiefly made of other materials. It is a hard, coarse, well-baked stone ware, in some instances glazed on both the exterior and interior, in others exteriorly only. The colour is dark stone or stone brownish mottled. The frilling around the base appears to be due to pressure with the point of the thumb. It is probably German pottery of the 16th Century. There are no indications of ornamentation such as is seen on the "Greybeards," or as they were styled in derision of Cardinal Bellarmine, "Bellarmine's," of the same period. Marryat states that "the pottes made at Cullein," called drinking stone pots, were imported in the year 1581.* And stoneware was chiefly brought to this country from the Low Countries until the Spanish war interrupted the supply, when some of the potters immigrated to this country, where they established manufactories. The earliest document that we have concerning the introduction of pottery is a petition from William Simpson, addressed to Lord Burghley, dated 1581, on the subject of establish-

* History of Pottery and Porcelain, Marryat, p. 166.



ing a pottery of stoneware in England. As early as 1561 Queen Elizabeth had granted a patent for settling various Dutch artificers.

Until the year 1680 the glazing employed was plumbiferous, a silicate of lead, which formed a glass coating over the vessels. But about 1685 white and brown stonewares were made by Mr. Thomas Miles, of Shelton, in Staffordshire, who used the salt-glaze. It appears that in 1680 glazing by means of salt was discovered by accident. A servant maid of Mr. Joseph Yates was boiling salt in water used for curing pork, and during her absence the mixture boiled over, and falling on the sides of the earthen pot containing it, the pot became red hot, and when cold was found to be glazed. Mr. Palmer availed himself of this accident, and commenced glazing common brown ware by means of salt, the practice being soon followed by other manufacturers. Two rude scraps of pottery show early attempt at ornamentation. They are of the 17th century. The paste is a soft cream, and would not be sufficiently substantial without the coating of glaze. After careful inspection I can find no potter's mark impressed on any of the pottery.

Of other objects found in relation with the pottery are sundry small tobacco pipes (Plate I, Fig. 6), known as "Fairy pipes," the smaller specimens of which may perhaps be assigned to any period since the reign of Elizabeth. The period at which their manufacture took place is established by the fact that the incorporation of the craft of tobacco-pipe makers took place on the 5th October, 1619. They must have thriven well, since they had sufficiently established themselves to petition Queen Anne to grant them a charter of incorporation, which was denied them. The manufacture of pipes, however, originated in England, and passed over to Holland, as the working tools used in that country in 1748 bore English names. From the large number of pipes found it would seem that the use of tobacco must have been general during the 17th and 18th centuries. The smallness of the bowl in the earlier specimens is remarkable. The fairy origin of these pipes was a common article of faith among the peasantry of England; and in Ireland they were held to belong to the Cluricaumes, a mischievous fairy-demon, and when discovered they were broken, or treated with indignity, as a kind of retaliation for the tricks which their supposed owners had played off. Pipes of this form were found in the parish of Old Swinford, Worcestershire. And the country folk there had a tradition that it was a favourite spot for the resort of Queen Mab and her Court, and that among other appendages of royalty was a fairy-pipe manufactory, of which these were the remains. Some of the "Elfin pipes" are met with under such conditions as to point to a period for them long prior to the time of Sir Walter Raleigh and the Maiden Queen; and would appear to indicate the use of older narcotics than tobacco, of which probably hemp might have formed one, indeed, Wilson* speaks of the old wives of Annandale having

* Pre-historic Annals of Scotland, p. 680.

smoked a dried moss gathered on the neighbouring moors, which they declared to be much sweeter than tobacco; and to have been in use long anterior to its introduction. In Queen Elizabeth's time tobacco was sold five pounds the ounce; and it was the custom in later times for those who indulged in the luxury to throw five-shilling-pieces in the opposite scale; but it is obvious that the diminutive size of the bowls at this period is not traceable to the expensiveness of the indulgence, inasmuch as in the middle of the 17th century the capacity of the pipe increased with the increased duties on tobacco, and continued enlarging until the time of William of Holland.

A coin appeared at this time, which was placed in my hands by Mr. Baker, Manager of the Gas Works. It has a bearing on the date of the relics at this point. It reads, *Obverse*, LUD. XIII. FR. ET NAV. REX. Louis XIV, which would be about the middle of the 17th century.

Some antique keys, which I should regard as belonging to a similar period, form items in the catalogue. They are of the plain annular pattern (Plate 1, Fig. 7), which stamps them as later than mediæval, the earlier specimens of key bows being of much more elaborate design. In the 13th and 14th centuries the bows were of a lozenge pattern. But in the 14th and 15th centuries they were of a trefoil shape; and there were considerable varieties. When annular they were not infrequently filled in with designs participating of the architectural decorations of the period. Later, in the 16th century, keys became very varied and fanciful in design, the passion for decorations in keys reaching its climax in the reign of Elizabeth, when scrolls, cyphers, crosses, and crowns were tastefully interwoven in the most ingenious manner.

Whether the globular body, which appears to be the centre of a chandelier, should be placed in this division, is attended with some doubt. It is not certain for what purpose it was intended; but its character points to the application already stated. It is of silver, in weight $1\frac{1}{2}$ lbs, and measuring 28 inches in circumference (Plate 1, Fig. 8). The fluted band around its centre appears to have been intended to carry light branches to bear, perhaps, wax tapers. It has, from a sketch, been assigned by Mr. Franks to the 17th century, there being, as he observes, "nothing Gothic about it." Mr. Brock, one of the secretaries of the *British Archaeological Association*, writes that "it is almost a counterpart of similar brass chandeliers still in use in old churches, about 200 years ago; and serves to call attention to the fact that these are traditional forms derived from others of earlier date."

It has been suggested by Mr. Nash that the object is what was known in mediæval times as a "trendell," which was a form of chandelier or centre to which branches were attached to bear the candles which were lighted in front of the Rood. As it is possible the relic might have come from the Abbey, it would probably be of silver, instead of brass or wood used for their construction in less

costly churches. Mr. Nash has supplied some entries regarding the "trendell." In St. Giles' Churchwardens' Account Book, Reading, a notice occurs, 1523, "Paid for making the trendell xviiiid." The St. Laurence's Churchwardens' Account Book speaks of money spent in adorning the trendell in various ways. The arms which held the candles are noticed:—"Pd. for making iij branches before the Rode." Mr. Parker, in his *Glossary*, notices that the rood lights were kept burning, especially at festivals. Thus, at St. Helen's, Abingdon, a notice occurs, "Received for the Roode lyghts at Crismas 23s. 2d." The lofts and the lights were mostly taken down at the Reformation, the accounts of St. Helen's, Abingdon, recording the selling of the lights:—"Received for the Holye looft lyghts 33s. 4d." The price paid appears to show that those lights must have been of silver. There are eight sockets in the circumferential band of the Reading relic; and the body is manufactured of lengthened ellipses of metal.

Arriving at the second or mediæval division, the chief items consist of portions of various vessels, which are of especial interest on account of the scanty reminiscences of the potter's art found at this period; and thus the simplest scraps of earthenware traceable to a date when fictile ware was comparatively unknown are not without scientific value. The earliest specimens of decorative ware which we possess subsequent to the Norman Conquest are the ornamental tiles with which most of our churches and Abbeys were paved. They commence about the year 1200. Here are some specimens from Wherwell Priory. The devices impressed on the tiles consist for the most part of foliage, heraldic bearings, crosses, symbols, and grotesque figures.

In the tiles the patterns were more commonly inlaid. After the patterns had been impressed with a mould, the sunk portions were filled in with white clay, and the whole covered with yellow glaze, producing a bright yellow pattern on a brown ground.

The manufacture of ornamental earthenware in the Middle Ages was not extensively practised in England; and vessels of this kind are rarely mentioned in inventories. A plain form of ware was manufactured as early as the 13th century, confined to jugs and pitchers; but the fabrication appears not to have extended to plates and dishes. The costly wares were supplied to the English nobility from Italy and Flanders; while wooden ware was universally employed for household purposes. Caliban rejoiced that he should "scrape trenchers" for Prospero no longer. As late as 1633, Mr. Pepys, who was remarkable for his politeness, records that on dining at the Lord Mayor's feast, it was "unpleasing" to him to see the meats served in wooden dishes, and to be allowed no napkins or change of trenchers. Among the middle and lower classes, and at the hall tables of the gentry, pewter was substituted. In the payments made by the Executors of Queen Eleanor, wife of Edward I.; an entry occurs of 8s. 6d. paid to Juliana, the potter, for 300 pitchers. Earthen vessels

are also mentioned in the regulations for the household of Edward IV. (1461-1483); and in the household book of Sir John Howard (15th century). In the Household book of the Earl of Northumberland (1512) are directions to purchase leather vessels instead of earthenware, doubtless on account of the destruction of pottery by breakage. In the houses of the wealthy, silver was largely used. Thus, in the regulations for Royal Households, published for the Society of Antiquaries 1790, p. 78, office of Pitcher House:—"The chief yeoman of this office hath in charge under the Sarjeant of Sellar the keepinge of all the pottes and cuppes of silver, and leather tankards, and earth asshen cuppes, &c." Leather bottles were in use until quite recently by shepherds and farm labourers; and in some cases among the better classes the bottles, which were known as "Black Jacks," were ornamented with small silver bells to ring "peales of drunkenness." It was then called a "gingle boy."

Heywood, in his "*Philocothonista*," 1635, furnishes an inventory of the various drinking vessels used at that period:—"Of drinking cups divers and sundry sorts we have. Some of elme, some of box, some of maple, some of holly, &c. Mazers, broad-mouthed dishes, naggins, whiskins, piggins, creuzes, ale bowles, wassel bowles, court dishes, tankards, kannes, from a pottle to a pint, from a pint to a gill. Other bottles we have of leather, but they are most used amongst shepherds and harvest people of the countrey. Small jacks we have in many alehouses of the citie and suburbs, lipt with silver; black jacks and bombards at the Court, which when the Frenchmen first saw they reported at their return into their countrey that the Englishmen used to drink out of their bootes. We have, besides, cups made of hornes of beastes, of cocker-nuts (*cocoa-nuts*), of gourds, of eggs of ostriches; others made of shells of divers fishes brought from the Indies and other places, and shining like mother of pearle. Come to plate, every taverne can afford you flat bowles, French bowles, prounet cups, beare bowls, beakers; and private householders in the citie, when they make a feaste to entertain their friends can furnish their cupboards with flaggons, tankards, beer cups, wine bowles, some white, some percell guilt, some guilt all over; some with covers, others without; of sundry shapes and qualities."

The knowledge that pottery in early times was chiefly confined to the dwellings of the wealthy impressed me with the idea that the remains must have come from the Abbey. The place where it was found is in the immediate vicinity of the Abbey. And some of the osseous remains at this point had been so artistically severed as to lead to the idea that the animals had been cut up for culinary purposes. The impression conveyed was that this might be a refuse heap or Abbey kitchen-midden. We have the authority of the Reading historians that the Abbey was a Royal residence after the time of the Dissolution of Religious Houses. It is stated that it was the occasional resort of Queen Elizabeth; and in the reign of James I

Camden describes it as "a Royal seat with fair stables, and princely and most generous steeds." With all the courtly characteristics of Queen Elizabeth her table appears to have been of the plainest, as in 1592 the daily and ordinary service consisted of trenchers, and white wooden cups which were served to the Queen and her officers, as appears from the inventory of "expenses of bottles, jugs, &c., for the Queen's drink."

The introduction of stone ware in the 16th century, and of delft ware soon afterwards, and the superior cleanliness of the Staffordshire earthenware, gradually superseded pewter dishes and plates, which, however, were to be seen in some old fashioned houses in the country during the last half century.

The pottery of the Middle Ages is characterised by a peculiar dark yellow or greenish glaze, splashed with black, and so irregularly disposed as not always to be uniformly spread over the surface of the vessels (Plate 1, Figs. 9, 10). The object of the glaze was to render the pottery more capable of containing liquids, it being often so soft and porous from the inferiority of the paste, and unscientific baking. Some of the vessels are tall and slender as Fig. 11, which is a thin red form, twelve inches in height, glazed partially in bright brown. It is of the 14th or 15th century. Scraps of pottery of this period are of rude bottles; and there are bases of straining vessels, with drain holes (Fig. 12). Some of the mediæval vessels have holes in them for some purpose. A holed jug is recorded by Dr. Wilson* as having been found on a farm in Scotland in 1792; and as it was filled with coins of Edward I. and II. of England, the date of the ware must be as early as the 13th century. It was perforated at nearly uniform intervals with holes. Pegged tankards were used as "wassail" cups, each person drinking down to his peg and removing it before passing the tankard to his neighbour; and it is thought that this custom originated the symbol "Pig and Whistle." Other fragments of 15th century ware, if they are not earlier, have thumb marks impressed on the exterior, and corresponding finger nail indentations on the interior (Fig. 13). In some of the "crocks" the paste is stronger than in others, notably in the scraps of red ware of the 14th or 15th century. The use of lead-glaze was continued to a late period. It was chiefly applied to coarse wares, which wares were made probably all over England, as the transport of articles so large in bulk, and not intrinsically valuable, would not have been profitable. The embellished neck of a large Dutch vessel is of the 17th century. The manufacture of Delft, at Delft, where it was first made, was carried on in Holland in 1310; and the articles were imported into England as early as the reign of Henry IV. The term Delft expresses labour, digging; delf, Anglo-Saxon *delfen*, to dig—

"When Adam delfed and Eve span,
Who was then a gentleman?"

* Pre-historic Annals of Scotland, p. 679.

Arriving at the lowest sub-strata, the base of the peat, and the shell-marl, the animal remains, the pottery, and particularly the implements formed from the bones of animals, reveal Reading under widely different circumstances. We now arrive at Roman times; and the rude British tribes who were at that time the subjects of Roman rule. Favourably as Reading is situated at the confluence of two such rivers as the Kennet and Thames, as an available centre for Roman colonization, it is remarkable that so few relics of that enterprising people should have been found here. That the district was a place of occupation by the earliest pre-historic races of whom we have any traces is rendered apparent by the presence in the drift, in company with the remains of extinct animals such as the mammoth, of stone relics of the rude tribes who lived along the Thames valley; and the fields around Reading furnish tools and weapons of the later Celtic people, who fished and hunted in the streams and forests of the district, long anterior to the invasion of Cæsar. Indeed, at a late meeting some specimens of funeral pottery, undoubtedly of the Celtic period, were brought to the knowledge of this Society (Plate 1, Fig. 14). To the same early period belongs the well-wrought, polished axe of greenstone of the Kennet-bed series (Plate 2, Fig. 1). It is of similar type to a ground hatchet shown in Fig. 59, in Dr. Evans's Work, *Ancient Stone Implements of Great Britain*. Its length is $4\frac{1}{4}$ inches, the edge is sharply wrought, and the side angles are slightly rounded.

There is considerable difficulty in defining the period and character of the singular figure depicted on the same plate (Plate 2 Fig. 2). The effigy represents a female head, and the nature of the pottery, which is red earthenware coated with a thick yellowish crimson glaze, appears to imply its period to be of about the 16th century; and the mode of dressing the hair seems to refer to that period. The figure has rudimentary horns, and is hollow as if intended for a lantern effigy. Its uncouth character implies such as might have been introduced in the revels or festivals of Reading, or it possibly might have formed the head-piece of some rude design in the Mystery Plays, which were held in the Forbury as late as the 16th century. The figure is coarsely wrought, the eye holes being evidently punched with the finger; and the indentations of the head dress are made with the point of the thumb. Various suggestions have been offered regarding it; that being horned the effigy may allude to what Othello designates "the forked plague;" or that, as the figure represents an aged female, it might have been employed during the orgies attendant on the execution of witches. The height of the head is 7 inches; and its circumference is 28 inches.

As a people, however rude, could hardly have lived for any lengthened period without leaving traces of their presence in the place names of the district, particularly to the features of greater prominence and duration, as the forests, hills, and rivers, some indications of the Celtic element may, I think, be traced in such

names as Emmer or Hemmer-Green, and Hemdean, probably from the Celtic s. f. *hem*, a hem or border, and *mer*, a pool or lake, and *den*, a hollow, meaning the margin of the pool or hollow. These gorges were excavated by water, and might have been swampy inlets of the valley in Celtic times. In some of the fields over-looking these hollows there are abundant evidences of a pre-historic people, in the shape of cores, flakes, hammerstones, scrapers, fabricators so-named, wedges, "pot-boilers," and other rude paraphernalia in flint, indicative of the working sites of stone-using races. Reading, again, which has been traced by the local historians to the Celtic *rhyd*, a ford, might be referred to the Anglo-Saxon *ræd*, the colour of the soil; but it is more likely referable to an earlier root. Catsgrove, later called Katesgrove, stated by Stukeley as a place showing in his time some signs of the entrenchments thrown up by the Danes, might have come from the Celtic, s. m, *cat*, a plot or piece of wood. However this may be, and confirmed as is the place historically as the site of some interesting passages in Danish and Saxon history, at the time the West Saxon kingdom was in jeopardy from the incursions of the Danes, there appears to be no such traces of military roads and fortifications as to lead to the opinion, advanced by such authorities as Leland, that Reading might be regarded as *Pontes* of the Itinerary; or by Dr. Beeke and Mr. Reynolds that it is the site of *Calleva*. That Reading was occupied by the Romans there can be no doubt; the relics found sufficiently establish that. But Dr. Beeke appears to have formed his opinion on Richard of Cirencester, an authority not now thought to be reliable. His suggestion that Coley may be derived from *Calleva* is difficult to understand. The prefix *Col*, which has its synonyme in the Latin *collis*, signifies a small hill, or a crest or ridge connecting hills. No association of Reading with other places named in the Itinerary to make it available as *Calleva* can be brought about without such repeated corrections of the distances as to render the position untenable; and the same holds good with regard to *Pontes*. It is not necessary to enter on this subject further than to remark that, judging from the remains, Wallingford must take precedence of Reading as a military station. While as regards *Calleva*, the weight of opinion, not merely from the military remains existing there; but from its situation relative to other well-known stations laid down in *iters* vii., xiii., xiv., and xv. of the Itinerary, leans to Silchester.

In the peat and marl forming the base of this cutting, the remains appear to have come mostly from the upper part of the marl at the base of the peat. Many of the bones have evidently been in contact with peat, they being stained with iron derived from vegetable decomposition. That they were embedded in the marl is evident from the calcareous incrustations on many of the bones; as well as from the land and freshwater shells, and other constituents of the marl, which were found filling the interior of many of the skulls. From the cranium of a horse I took shells of various species, besides fish-bones

and teeth, shells of hazel-nuts, small teeth of deer, a cherry-stone, and a wooden bead, which it is likely is Romano-British. These must have been entombed in their animal mausoleum for over 1,500 years.

The shell-marl is composed chiefly of comminuted chalk, flint gravel, and sand, with chalk flints at the bottom; together with the shells of mollusca, of species which inhabit the land, and muddy and stagnant water in pools and ditches, as well as those which live in flowing water, from which it is to be inferred that at the period of the marl the valley at this point was more lacustrine than at present; although the lacustrine conditions were associated with running water. The Kennet has evidently never greatly shifted, there being no signs of a river bottom in the sections now being made in the marsh immediately north of the river; and the superintendent of the dredging informed me that most of the relics in the shape of pottery and animal remains were found in the river bed below the Gas Works, showing that this part must have received the refuse of the town from time immemorial. The peat on the surface of the marl implies that the valley must have become marshy, most likely periodically inundated, which would have given rise to aquatic plants such as duckweed, watercrowfoot, aquatic convolvæ, and other organisms, which are the usual accessories in the formation of peat. These becoming submerged and gradually decayed formed a nidus for the growth of others on its surface, in the end forming a mass of material known as submerged peat. In the peaty layer of this section several species of leaves of Exogens are traceable, such as the alder, willow, hazel, blackthorn and cherry, showing that trees of considerable stature were growing about the marshes. That these remains are observable in the peat, evidences that it could at no time have assumed the character of emerged peat, in which traces of the vegetable tissues are mostly lost.

Of the animals found in the peat and marl, some were *feræ naturæ*; while others were such as had been domesticated by the Romano-British people. When it is considered that we are dealing with a period when the whole of the deep clay lands of the south of England were covered with forest, it need not excite surprise that the wolf, the wild boar, or the great Caledonian ox should have left his bones in the turbaries or sub-turbary marls. Remains of this kind might have found their way to the spots where they lie buried in various ways, as the spoils of the hunter, animals that had been used for food, or of forest animals which had become mired and died, and were washed down during flooded periods, and lodged in angles and reaches along the river courses.

In a communication which is published in the second volume of the *Transactions of the Newbury District Field Club*, Mr. Walter Money states that, until the year 1226 the Royal Forest of Windsor extended as far as Hungerford, in which year the Kennet Vale was disafforested by Royal Charter. Independently of this there is no doubt that forest had a wide range in Roman times, the clearances

for purposes of agriculture being chiefly due to the Saxons. In north Hampshire where a large portion of the county is a chalk subsoil the forest oak will not flourish; but where the old tertiaries have become mingled with the chalk surface forming clay-with-flints, copses have always extended, and it is only as recently as the last 150 years that large tracts of woodland have been grubbed, and the land brought into cultivation.

Had we not the bones of extinct animals to fix the antiquity of the relics, there is no doubt that the river marl has landed us in Roman times, in the well-marked pottery of that period which was thrown out, together with some scraps of iridescent Roman glass. The ware is of the ordinary culinary kind common at Romano-British sites—sections of bowls or basins (*patinæ*), saucers (*pateræ*), necks and fragments of earthen pitchers, etc. Some pieces are coarser than others; and amongst them are scraps of the common blue-black pottery so abundantly present in the Upchurch marshes, where it was largely manufactured. Two fragments of the upper portion of a large urn proclaim an earlier date (Plate 1, Fig. 15). They belong to the rude, hand-made, unburnt ware of the British period, although it might have been fabricated in Roman times. Portions of the community might in sequestered districts have used the same rude appliances as their forefathers long after Roman arts had been introduced into Britain. The pottery is such, however, to which the term Celtic is usually applied. The lines should not be drawn too hard and fast in assigning distinct eras to objects of particular classes and characters regardless of the fact that a high degree of art may co-exist with usages characteristic of a much lower grade of civilization. It has lately been clearly demonstrated by Dr. Arthur Mitchell, in the *Rhind Lectures on Archaeology*, and which was many years ago pointed out by Hugh Miller, that the spindle and the whorl believed to be among the oldest objects in point of invention, are still found in common use; spindle-spinning being still practised in a country claiming to be advanced in civilization, and using complex machinery. And that rude, hand-made, globular vessels called *Craggans*, in size and material somewhat like the early Celtic urns, are still manufactured and used by the natives of Barvas and other places in the Isle of Lewis. Querns are still made for sale in some parts of Scotland; and the Beehive houses of the Hebrides, many of which are at the present time in occupation, resemble the early circular habitations in Wales and on Dartmoor. That the inhabitants of the Western Isles are Celtic renders the adherence to these primitive usages less remarkable.

We might pause for a moment on the inquiry regarding the probable people who lived along the Thames prior to Roman times. An old map in Stukeley, copied in Mr. Hewett's *History of the Hundred of Compton*, places the British tribe, the Atrebatas, along the Kennet; the Dobuni lying northward of the Thames river. The Segontiaci, who are thought to have occupied Silchester (*Callewa*), are placed

south of the Kennet ; and yet farther south the Belgæ, who are supposed to have held North Hants and Wiltshire. The question is worth proposing, could the Atrebates, after their conquest by the Romans, have been the makers of the rude tools found in the Kennet bed ?

Old bones are proverbially dry, yet even they become peculiarly interesting when we consider their associations with the past conditions of our country ; and when comparisons are made regarding the social state of the country then and now. When its resources, civilization, its rude arts, are contrasted with ours, the subject grows into more than one of interest, it assumes proportions in mind-culture as great as any that can be presented to us. The animal remains testify how vastly different the country must have appeared when the great Urus was a wild inhabitant of the woods ; and the noble red deer roamed amidst the wooded glades ; and when the wolf, wild boar, and brown bear had their lairs in the primeval forest.

In the list of animals the following have been recognised up to the present time :—

Gigantic Ox, or Urus	<i>Bos primigenius.</i>
Long-fronted, or Celtic Ox	<i>Bos longifrons.</i>
Wild Boar	<i>Sus scrofa.</i>
Wild Boar (Marsh variety)	<i>Sus scrofa palustris.</i>
Goat	<i>Capra hircus.</i>
Wolf	<i>Canis lupus.</i>
Fox	<i>Vulpes vulgaris.</i>
Dog	<i>Canis familiaris.</i>
Beaver	<i>Castor Europæus.</i>
Horse	<i>Equus caballus.</i>
Red Deer	<i>Cervus elaphus.</i>
Fallow Deer	<i>Cervus dama.</i>
Roe	<i>Cervus capreolus. (?)</i>
Sheep (two varieties)	<i>Ovis.</i>

The bones of some smaller animals have not yet been satisfactorily determined—perhaps wild Cat or Otter ; also of several species of birds, which from their size and character appear to be those of Swan, Goose, Duck, and some other wild fowl. There are leg bones of a stout, short-limbed mammal, which appear to be those of Badger (*Meles taxus*).

It has been stated that some of the remains found in Reading are indicative of the earliest pre-historic races. The term pre-historic comprehends an enormous period of time ; and is classified according to the stages of human progress which it presents. It is considered to include the pleistocene or drift period, when man shared the possession of Europe with the Mammoth, Cave Bear, the Woolly Rhinoceros, and other animals now extinct. It includes also the Polished Stone Period, called Neolithic ; and the Age when Bronze was used for arms and cutting instruments. Lastly may be included in it, in Europe, the early Iron Period ; although at this point the

frontier of history may be considered as reached. Not but that there are records of people who employed iron, and bronze, and even implements of stone in early times; but it is to the introduction of these materials in Europe of which history gives no voice. These three stages of human culture, viz., the Ages of Iron, Bronze, and Stone have been fully verified by investigations in various parts of Europe into the pre-historic habitations and burial-places of man. One pre-historic phase is that which is characterised by the arrival of the domestic animals in Europe under the care of man, viz., the dog, swine, horse, horned-sheep, goat, *Bos longifrons*, and the larger ox descended from an ancestor, according to Rüttimeyer of the type of the *Urus*, the ancestors of the animals, in short, whose remains lie before us. This was the period comprehending the *Neolithic* stage of civilization. *Bos longifrons* and possibly the *Urus* are thought in some instances to have reverted to feral conditions, in the way the horses and oxen did after their introduction to America and Australia. The remains of these animals, as they appear here, are not unfrequently found in association with domesticated animals. The domestic horse, the variety of hog descended from the wild boar, and the domestic cattle derived from the great *Urus* mentioned by Cæsar, may possibly have passed under the yoke of man in Europe, since the wild stocks are to be found in that area, both in the pre-historic and pleistocene times. The same cannot be affirmed of the swine descended from the southern variety of *Sus Indica*, or of the Celtic ox, of the sheep, or goat, since their wild ancestors were not indigenous in Europe. These animals must have been domesticated in some area outside Europe; and since Central Asia is the region where the wild stocks now exist, from which all the domestic animals are descended, it is reasonable to suppose that they were domesticated in that region, and thence introduced by a race of shepherds and herdsmen into our quarter of the world.*

Of the gigantic *Urus* (*Bos primigenius*) there are specimens but little inferior to the elephant in size, its huge proportions having been noticed by Cæsar on his invasion of Britain. The animal had a lengthened residence in this country, it being contemporary with the mammoth. Indeed, its remains, with those of the mammoth, have been found in association with implements of flint in the Thames Valley, at Reading. It was wild in Celtic times. There were in the Kennet bed, bones, and horn-cores of a smaller kind of bovine animal of similar character, which might have been a domesticated descendant of *bos urus*. And the Chillingham cattle are thought to have derived their ancestry from the same source. Cuvier and other naturalists are disposed to believe that our domestic cattle are the degenerate descendants of *Urus*. Bell, in his *British Quadrupeds*, says that he considers it extremely probable that these large fossil remains belonged to the original wild condition of our

* "Cave Hunting," Boyd Dawkins, p. 137.

domestic ox. It is the great disparity in stature which makes remains of this kind so puzzling. The specimens here are not nearly so huge as they are sometimes met with. A magnificent specimen of the skull and horns of this animal is present in the museum at Newbury; and another representative, mentioned in the *Transactions of the Newbury District Field Club*, was found to have a portion of a flint arrow-head in its skull. Examples are in existence, notably a specimen in the collection of Mr. Wickham Flower, measuring 3 ft. 3 in. in the length of the outer curve of its horn-core; the circumference of the core at the base being 18 inches; diameter 6 in. The chord of the arc described by the core is $7\frac{1}{4}$ inches; from the middle line of the forehead to the tip of the core is 2 ft. 2 inches.

The specimen on the table measures $11\frac{1}{2}$ inches round the base of the core; and the span of the skull is about 10 inches across the orbits; but there are arm and thigh bones which indicate an animal of very much larger stature. The horn-cores in Urus have an extremely graceful bend, first backward and upward, then downward and forward, and lastly inward and upward, describing a kind of double curvature. They are tuberculated at the base, and impressed lightly with longitudinal grooves and irregular perforations. These animals were evidently hunted during the Neolithic stone period; a case in point being that of a skull of *bos primigenius* found in a Cambridgeshire fen with a flint axe ground at the edge embedded in the skull, the implement and skull being now in the Woodwardian museum.

Probably of the entire bones, not less perhaps than half a ton thrown out during the excavations, quite half consisted of bones of the Celtic Ox (*Bos longifrons*), the species whose remains are so commonly present at Roman sites throughout Britain. It was essentially the source of animal food among the Roman-British people. A peculiarity observable among the bones found at the Gas Works, was their mutilated condition, probably for the extraction of the marrow. The skulls were all more or less smashed; and the long bones split open or sawn through; and in some cases the softer extremities of the long bones had the appearance of having been gnawed by dogs or wolves. It is considered that *bos longifrons* had been domesticated by the aboriginal Britons before the invasion of the Romans; but it is thought by Mr. Boyd Dawkins as not an animal of the drift period. Had the Urus been the progenitor, it might be expected that the Highland and Welsh cattle would have retained some characteristics of their origin; but the kyloes and the runts are remarkable for their small size, and for their short horns, as is *bos longifrons*, or by their absence. There are varieties in size in this species, some specimens being very diminutive, the difference being perhaps ascribable to sex. In distinguishing this sub-species, apart from its inferior stature, the horn-cores are shorter, and smaller and differently directed, the forehead being somewhat convex. The horns describe a single short curve outwards and forwards in the

plane of the forehead, rarely rising above the plane, and rarely perhaps sinking below it. *Bos longifrons* was probably the only domestic breed in pre-historic and Roman times.

The Wild Hog (*Sus scrofa*) is represented among the series by some fine tusks. There are also jaws, tusks, and teeth of what appear to be a domesticated variety; and of *Sus scrofa palustris* (*Marsh Hog*), a kind of semi-wild form. It was less fierce and wild than the wild boar, perhaps a domesticated animal that had somewhat returned to feral conditions. The wild hog was extinct as a general inhabitant of the forest ranges of this country before the time of Charles I.; as is testified by the fact of that Monarch having introduced wild pigs into the New Forest; their survivors now being the "Badger-pied pigs" of the cottagers, which are still suffered to rove in the forest during the pannage period, in order to avail themselves of the mast and acorns. But that the animal lingered on in some districts is authenticated by notices that it was present in Lancashire in 1617; and in the South of England the wild boar was hunted at Windsor by James I. and his Court.* The red deer of the New Forest, introduced by Charles II. from France, are extinct; and the fallow deer, the great subject of contention in past times, are nearly so. Wild forest ponies have almost become a myth, there being no horses without owners. In the lives and habits of the forest cottars there is much which characterised their Saxon ancestors. We all remember Sir Walter Scott's description, in *Ivanhoe*, of Gurth, the Saxon swineherd—the swineherds' jacket of tanned leather, with the hair so worn off in places as to render it difficult to determine to what animal the skin originally belonged, the sandalled feet, the bare knees, the broad leathern belt round the waist bearing a scrip, and a horn for blowing to the pigs, the knife also stuck in the belt which bore the name of a "Sheffield Whittle," showing, at this early date, that Sheffield was noted for cutlery. Then follows a description of the swineherd's person—the shock head, protected only by matted hair; while the most remarkable appendage was a brass collar soldered round the neck, stating the wearer's name, and that he was the born slave of his master. If we add to this Mr. Wise's happy description of forest life at the present day it will be apparent that the old forest usages still cling around the forester's home:—"The peasants," he (Mr. Wise) writes, "still value the woods as they did in the Conqueror's time for the crop of mast and acorns—still peel off the forest turf and cure their bacon by its smoke. The charcoal burners still builds the same round ovens as in the days of William the Red. Old English words to be heard nowhere else are daily spoken. The last of the Old Forest Law Courts is held every forty days at Lyndhurst. The bee-master—beoceorl—still tends his hives, and brews the old English mead, and lives by the labour of his

* "Nature," March 10th, 1881, p. 12.

bees. The honey buzzard still makes her nest in the beeches round Lyndhurst, and the hen harrier on the moors near Bratley." *

There is little doubt that of the pigs which were suffered to frequent the forest in Saxon times some reverted to semi-wild conditions. Berkshire has been fortunate in furnishing remains of wild pigs, as I find bones of the animal have been discovered at Newbury and at Abingdon. At the latter place the remains lay under some peat on a stratum of sand, and were associated with enormous quantities of hazel-nuts in a blackened state. The specimens were presented to John Hunter, the great anatomist, by Mr. Jones, a surgeon of Abingdon; and were placed in the Museum of the College of Surgeons. In a letter to Mr. Hunter on the subject,† Mr. Jones writes:—"That several tusks have been found, and they were all worn in the manner you will observe these to be; and the quantity of nuts was very considerable, and seemed to lay in a layer of sand between the strata of peat. From whence could they come? Is it possible they could remain there ever since the Deluge?"

Remains of the Goat (*Capra hircus*) both of the male and female are numerous. Skulls of the sheep also (*Ovis*), of the horned and unhorned varieties. The horns have been cleverly sawn from the head. It will be observed that in the sheep the greater diameter of the horn is across the longitudinal axis of the head; in the goat it runs almost parallel with it. The sheep appear from the crania to have been a small mountain variety. Of deer can be enumerated Red Deer (*Cervus elaphus*); the Fallow Deer (*Cervus dama*); and although it has not yet been recognised, there is no doubt the Roe-buck (*Cervus capreolus*) will be found among the numerous jaws and other portions of the deer tribe forming the series. The red deer has been associated with mammoth and other relics of mammalia in Western Europe from a very early date; and became extinct in England only so recently as Queen Anne's reign. It still lives in a half-wild state in the Scotch Highlands. The Reindeer was living in Caithness as late as the year 1159. Among many other portions of the red deer we have an antler. As the palmate portion of the horn, or "tray," in the *patois* of the forester, is considerably developed, it belongs to what is known as a "Hart." At about the fifth or sixth year the antler is not so completely palmated, when the animal is known as a "Stag." In the "Crowned Hart," the summit or sur-royal expands, and sends off a number of short "snags" from a funnel-shaped cavity, which has space sufficient to contain a thrush's nest, whence the park keepers designate such antlers "throstle-nest-horns." The fallow deer has probably been an inhabitant of Western Europe since the Neolithic stone period.

The Wolf (*Canis lupus*) in most of its structure is indistinguishable

* The New Forest, Wise, p. 12.

† Owen's Fossil Mammals, p. 430.

from the larger varieties of dog; and the difficulty in making the distinction is enhanced by the fact that there are varieties in wolves, some being of greater stature than others. The jaw bones in size, form, and in the arrangement of the teeth agree with those of the dog.* The experience of comparative anatomists teaches that the teeth and bones of the existing wolf are not distinguishable from those of the larger varieties of dog.

Cuvier states how difficult it is to distinguish the skeleton of wolf from that of the "Matin" (wolf-dog or Irish greyhound, or a shepherd's dog of equal size). Daubenton finds the same difficulty. He has noticed that the wolf has the triangular part of the forehead behind the orbits somewhat narrower and flatter; and the occipito-sagittal crest longer and loftier, and the teeth, especially the canines, proportionately larger; but these shades of difference are so slight that they are frequently more marked between two individual dogs, or between two wolves. They are evidently of the same species. Blainville, writing of the *Dingo*, or wild race of dogs in New Holland, expresses its configuration as being undistinguishable from the wolf.

Wolves inhabiting islands are of smaller stature than those roving over extended mainlands. Hence it is hardly to be expected that the remains of such found in Britain are equal in size to Arctic wolves. Mr. Darwin writes that two kinds of wolves range over the Catskill Mountains in America, one of which is more like the greyhound, and obtains its living by hunting deer. The other is heavier with shorter legs, and lurks about sheep-folds, doing much damage to the flocks.† The wolf abounded in Britain in pleistocene and prehistoric times; and varied in numbers in the historic period in proportion to the waste lands. It was the subject of many legal enactments, and grants of land were held for its capture. In testimony of the dread of the wolf in the 11th or 12th century may be cited the following extract from the Litany of Dunkeld current in Scotland:—"A ceteranis et latronibus, a lupis et omni mala bestia, Domine, libera nos." Wolves were sufficiently abundant in the Wealden forests in early times to eat up the corpses of the Saxons killed at the battle of Senlac by Duke William. An account of the wolves and boars in the Wealds of Sussex in Saxon times receives mention in a paper in the *Sussex Archæological Transactions* (Vol. 4. p. 83); also of the names of various places derived from wolves. In the reign of Edward I. a wolf-hunter general was appointed, and a *mandamus* was issued calling upon all bailiffs, etc., to aid in destroying the wolves. Among the Royal warrants of the first Edward the following has been furnished to me by the Rev. R. S. Edwards:—"Anno 9 Edw. primo: Rex omnibus ballivis, etc., Sciatis quod injuntimus dilecto et fideli nostro Petro Corbet, quod in omnibus forestis, et parcis, et

* British Fossil Mammals, pp. 129, 130.

† Origin of Species, p. 71.

aliis locis infra comitatus nostros, Gloucester, Wygorn, Hereford, Salop, et Stafford, in quibus lupi poterunt inveniri, lupos cum hominibus, canibus et ingeniis suis capiat, et destruat, modis omnibus quibus viderit expediri.* In the "Patent Rolls," May 21st, 1212, there is a record of a gift of five shillings to the groom of Master Ernald de Auckland for a wolf caught by his Master's dogs at Fremantle, near Kingsclere.

The animal had a price set upon its head by statute in 1621; the price paid for one wolf in Sutherlandshire was six pounds, thirteen shillings and fourpence. In Ireland, in 1683, "for every bitch wolfe the price was six pounds, for every dog wolfe five pounds, for every cubb which preyeth for himself forty shillings, and for every suckling cubb ten shillings." It was obvious from these large prices that the wolf was becoming rare in Scotland and Ireland in the middle of the 17th century. The last of the British wolves was killed in Scotland in 1743 by MacQueen, a man remarkable for his stature and courage, who died in the year 1797. The memory of the exploit is still preserved by tradition. In Ireland the animal lingered until 1770. The wolf was at length extinguished in England in the reign of Henry VII.

The Dog (*Canis familiaris*), and the Fox (*Vulpes vulgaris*) are both represented. The dog has been recognised by its remains in bone caves, Dr. Schmerling having obtained its bones in the caverns of Liège. The frontal elevation of the dog exceeds that of the wolf; and the skull appears to indicate increased cerebral development from domestication. The cranium of the fox is narrower, and contracts more rapidly anterior to the orbits; and the forehead is more contracted and flatter than in the wolf.

There appear to have been two well-marked types of the dog in use among the Romano-Britons, judging from the figures in relief on the finer specimens of Durobrivian pottery (Plate 1, Figs. 16, 17), the one being of the greyhound or deerhound kind, and which generally appears in subjects representing the chasing the stag or hare; while the other is evidently a strong and fierce animal of the mastiff or bull-dog character, capable of contending with the wild boar, wolf, or bull. This animal is represented in boar-hunts. In some rare instances figures of men are introduced, urging on the chase, or spearing the stag or boar. It is well known with what characteristic fidelity the Romans executed their designs. The figures bear out the descriptions of the British dogs given by the classical writers, who not unfrequently allude to the dogs of Britain. In his enumeration of the dogs peculiar to different countries, Claudian speaks of the British breed as capable of contending with bulls:—

"Magnaue taurorum fracturæ colla Britannæ."

That British hounds were exported for hunting purposes we have the testimony of Nemesian. The more speedy dog above mentioned

* Harleian Miscellany.

appears similar in type, judging from the shape of the skull, to one in the present series. It appears to be the skull of a dog of the stature and character of the Scotch deerhound.

Perhaps the most interesting specimen is a skull of the Beaver (*Castor Europæus*), an animal which has been non-resident in this country since the time of the first Crusade, when it was hunted in Cardiganshire for its fur. It has been a very old inhabitant of the rivers of Europe, it having been found associated with the mammoth, rhinoceros, hippopotamus, hyæna, and other mammalia in river-drifts. It thus lived at a period long pre-Roman. The Kennet Valley must have been a favourite haunt of the creature, inasmuch as it has also been found in the shell-marl of Newbury, in association with the remains of wild boar, roebuck, goat, deer, and wolf, an assemblage of animals corresponding with those before us. The beaver was rare in the 5th and 6th centuries; and according to Giraldus de Barri (*Itinerarium Cambriæ*) it was scarce in Scotland in the 12th century, although it would appear to have still existed there. According to Boethius it was taken in Lockness for the sake of its skin towards the end of the 15th century. There can be no doubt that this powerful and ingenious rodent has been an effective agent in the production of peat, by its habits of blocking up the river courses with its dams and weirs, and thus causing swamps and marshes favourable to the development of peat. The Marquis of Bute has of late introduced the beaver into the Island bearing his name, where the animal is increasing rapidly and building its dams. The process of naturalisation is evidently not difficult in this country.

Of the Horse the sub-species *Caballus* is present. There is a difficulty in separating it from another sub-species, *Placidens*. The chief distinction rests in the modifications observable in the teeth.* In *placidens* the first upper molar is hardly so long and pointed, and there is considerable difference in the disposition of the folds or plications of the enamel. The canines are rudimental in the female, and small in the male. Some of the more available of the smaller bones of this animal, notably the external metacarpal or splint bones, have been turned into awls or borers. Similar examples have been found in Berwell fen; and are present in the Celtic series in the collection of Mons. Boucher de Perthes. Such also have been discovered in Swiss Lake Dwellings.

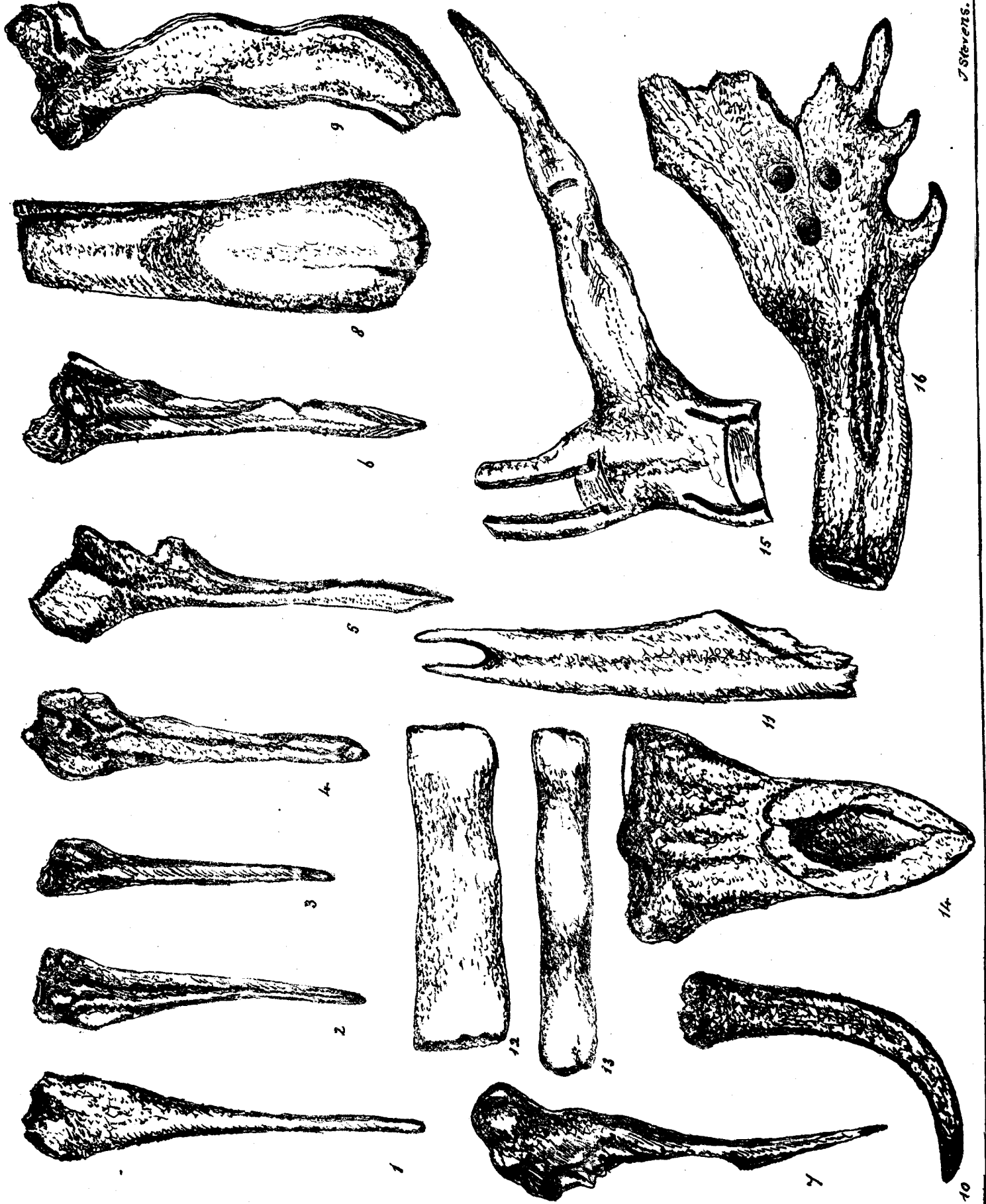
Some relics of early date were found in the Plummery ditch. They are in the possession of Mr. William Palmer; and consist of bones of a large ox or bison, and osseous remains of an ox domesticated by the Romans. Bones also of horse, dog, and a fragment of a human skull, and pottery of rude character, and some pieces of glass form part of the collection.

Amidst the larger bones a variety of smaller objects were thrown out which had been cut in various ways, and many of them evidently

* Owen's British Fossil Mammals, p 392.

shaped for use as implements, in some the polished extremities denoting that they had been used. Their form appears to imply that they must have been constructed for awls, punches or bodkins (Plate 3, Figs. 1, 2, 3, 4); even if some might not have been intended for spear-heads (Plate 3, Fig. 5, 6). The bones employed are chiefly the ulnar bones of bos, red deer, and perhaps goat (Plate 3, Figs. 4, 5, 6, 7). Their points have been shaped since the separation of the bones from the radius; and occasionally the olecranon has been removed (Plate 3, Figs. 4, 5, 6). Splint-bones or external metacarpals (rudimentary) of deer and apparently of horse have also been selected (Figs. 1, 2, 3). The upper extremity of a radius has been improvised perhaps for a chisel (Fig. 14). The coronoid processes of lower jaw bones are sawn off; and in the bodies of several scapulæ holes are observable, which appear to have been made during life; and point to the place where probably the death wound was inflicted. Several spinous processes of dorsal vertebræ have been cut from the vertebral bodies and used may be for knives (Fig. 9). A large rib of bos is shaped for a chisel or perhaps a scoop to remove marrow from the long bones (Fig. 8). Marrow has ever been greedily sought after by savage people; and I have been informed that it was utilised in the preparation of skins. "Snags" of deer horn have been cleanly removed, and the points are polished as from usage (Fig. 10). The "coronet" of a large red deer antler is neatly bored as if for suspension, and a piece of red deer horn is wrought as if for hafting (Fig. 15). As the tine attached is partly sawn through, could the article have been intended for a suspension peg? Picks of red deer horn were used in early times for the purpose of extracting from the chalk the flints for shaping instruments. An example of the kind was exhibited by the Rev. Bryan King, at the late meeting at Devizes of the *British Archaeological Association*, which he thought might represent the tools with which Wansdyke was excavated. But Wansdyke is too extended and military to be referable to the stone period, and more likely belongs to the age of bronze. The implement before us is too cleverly cut to be assigned to the time of stone tools. Fallow deer antlers are bored triangular-wise (Fig. 16). It has been suggested as a forest mark; but such could hardly have been the case as the animal sheds its horns annually.

But the more interesting series is that of some instruments which have been wrought from the lower jaw bones of bos longifrons and deer; and as more than 100 specimens were found in the small section cut through, the inference is that they were largely made in that neighbourhood, indeed, that they evidence a local industry. The instrument is shaped from a thin plate of the base of the jaw from between the angle and the symphysis; and one end is neatly forked or looped, the other left rough as split off (Plate 3, Fig. 11). The smoothness of the points show that the implement has been used. Pieces of ribs, mostly of uniform length, were found at the same time some of which were polished and worn with use (Plate 3, Figs. 12, 13).



It is evident that these tools were intended to serve one purpose; rendering it almost certain that the one was employed as a single-looped shuttle; the other as the mesh for forming the loops in netting fish or forest nets. I am indebted to a lady, Mrs. H. Cunnington, of Devizes, for a small piece of netting made with these rude implements, which goes far to prove that such was their intention. In sending the netting, Mrs. Cunnington writes her belief in the following words: "I cannot but think that the bones were used for making nets, perhaps to catch the Thames fish, at any rate they would be used for this purpose in lieu of more civilized implements, as you will see by the little piece enclosed." The loops appear about the size of rabbit-net loops; but it is likely that the size varied with the dimensions of the ribs, of which there are different sizes (Figs. 12, 13). A single implement of this kind receives mention as having been found in the Newbury peat.* It is not to be considered that the cut bones are all of one period; some of them are so neatly sawn that they should be assigned to a later period; but the rude bone implements are not later than Romano-British.

Of land and water snails, whose shells help to form the marl, I have been able, with the assistance of Mr. H. M. Wallis, to recognise 30 species, one or two of which, however, are somewhat doubtful. Of these, the *Helices* are land dwellers; while the various species of *Lymnæa* and *Planorbis*, which are among the commoner of the water snails, vary in their habits, some living in stagnant muddy pools and ditches, others in flowing water. *Zonites cellarius* affects, as its name implies, drains and cellars; and *Succinea* is to be found in mud flats. The list comprehends species which range widely in their habits, from dwellers on dry land, through those which abound on the edges of marshy pools, and in stagnant muddy ditches, to such as live in lakes, canals, and gently running streams.

The following is the list:—

<i>Helix nemoralis.</i>	<i>Valvata piscinalis.</i>
„ <i>fasciolata.</i>	<i>Neritina fluviatilis.</i>
„ <i>rotundata.</i>	<i>Succinea elegans.</i>
<i>Lymnæa limosa.</i>	„ <i>putris.</i>
„ <i>palustris.</i>	<i>Zua subcylindrica.</i>
„ <i>truncatula.</i>	<i>Bythinia tentaculata.</i>
„ <i>auricularis.</i>	<i>Ancylus fluviatilis.</i>
<i>Planorbis corneus.</i>	<i>Cyclas lacustris. (?)</i>
„ <i>vortex.</i>	„ <i>ovalis.</i>
„ <i>albus. (?)</i>	„ <i>cornea.</i>
„ <i>contortus.</i>	<i>Pisidium nitidum.</i>
„ <i>carinatus.</i>	„ <i>amnicum.</i>
„ <i>spirorbis.</i>	<i>Physa fontinalis.</i>
„ <i>complanatus.</i>	„ <i>hypnorum.</i>
<i>Zonites cellarius.</i>	<i>Unio pictorum.</i>

* Transactions of Newbury Dist. Field Club, vol. ii.

In leaving the subject it should be stated that the remains were placed in my care by the Board of Gas Directors, with the idea that a properly selected series of them might be serviceably appropriated by the Reading Museum. It is not for me to anticipate what will be the views of the future Directors of the Museum, but perhaps I may be excused for observing that it appears to me that a collection to be useful should be to a great extent local—representative of the home district. Not necessarily to the exclusion, according to space, of objects of general interest, or of such as may help to illustrate local specimens. If every museum adhered as far as possible to objects of local interest, the museum collections of the country would be unitedly a grand exposition of all the country could produce. Objects, whatever may be their specific value, which are calculated to be the mere gratification of curiosity—although the awakening of curiosity is not without its advantages in the process of self-culture—are educationally of but small value compared to those which have some latent history or science teaching to unfold.

It is hoped that attention will be called to all objects of local interest which may from time to time be unearthed, that a series representative of the growth of the town from early times may be set apart for the instruction of the citizens. At Salisbury, happily, there were persons who during the drainage of the city appropriated the various relics from the 13th century; and much of earlier date would doubtless have been discovered, but at the above-named period the city of Old Sarum was removed to its present site. I trust objects have been preserved in private hands from the drainage sections of Reading. However trivial may be such articles, and they are such as were of daily use, they are worth caring for, as serving to illustrate more or less the arts and usages of our forefathers.

A brief summary of what has gone before appears to suggest that there was a time, when Reading was a thing of the future, when rude men, who were fishers and hunters lived on the elevations above the valley, and had for their contemporaries the mammoth, great wild ox, and woolly rhinoceros. They shaped their implements of flint, traces of both instruments and animals being present in the valley-drifts at an elevation of 81 feet above the present Thames level. As the valley deepened the mammoth still lived on, and with him huge fauna of the same period; Mr. Poulton having found ample traces of such at Redlands, where the elevation is 39 feet. It is presumable that man was then also an inhabitant of the valley, implements of his handiwork being found at a lower level. At an elevation very much diminished, viz. 30 feet, at "Kennet's mouth pit," the mammoth still survived, and here also we have traces of man in his rude flint tools. What period of time must have elapsed between the river-bed man and his neolithic successor it is impossible to calculate, but certain it is that neolithic man appeared on the scene, as the pleasant elevations of Caversham have revealed him in instruments of the polished stone

period, of which specimens lie on the table. Mr. Harrison Jones has likewise found some good forms ; and Mr. Goody is in possession of a well-wrought series picked up in the district. In the floor of the Thames we find traces of the Romano-British people, at the end of the pre-historic period, or rather subsequent to the historical details regarding the country and its inhabitants rendered by Cæsar. And in ascending order the inhabitation of Reading by a settled, increasing, civilizing community has been made patent by the pottery of mediæval as well as of later times.

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