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Descriptive Catalogue

OF THE

SALISBURY & SOUTH WILTS MUSEUM.

ILLUSTRATED EDITION.

SALISBURY :

BENNETT, JOURNAL OFFICE.

PRINTED FOR THE SALISBURY AND SOUTH WILTS MUSEUM.

1864.

PRICE EIGHTEEN PENCE.

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SALISBURY AND SOUTH WILTS MUSEUM.

ESTABLISHED 1860.

Trustees.

THE TOWN COUNCIL OF THE CITY OF NEW SARUM.

President.

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Vice-Presidents.

THE WORSHIPFUL THE MAYOR OF SALISBURY.

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MR. JAMES CLENCH, THE CANAL, SALISBURY.

RULES

OF THE

SALISBURY AND SOUTH WILTS MUSEUM.

RULE 1. This Museum shall be called "The Salisbury and South Wilts Museum."

RULE 2. The Museum shall have a President, Vice-President, Honorary Curators, Secretaries, and a Treasurer, with a Committee to consist of twelve subscribers, of at least ten shillings yearly, to be chosen by the members of the Museum, six of whom shall go out annually by rotation, and shall not be eligible for re-election until the following year, together with the Mayor for the time being, the late Mayor, and three other Members of the Town Council appointed by that body, and the Honorary Curators and Secretaries by virtue of their office.

RULE 3. The property of the Museum shall be deposited at Salisbury, and shall be vested in the Town Council, to be held by them in trust for the purposes of the Museum, but the Town Council shall not be liable for any claims or charges in respect of the Museum. The property of the Museum shall not be disposed of except with the consent of five-sixths of the Members, and shall not be disposed of at all as long as any similar Museum exists in the County.

RULE 4. The Annual General Meeting shall be held on the second Wednesday in June in each year, and shall nominate when necessary to the Presidentship and Vice-Presidentships, and shall elect to the Vacancies in the Committee, the Secretaries, the Treasurer, and the Auditors, receive the report of the Committee for the past year, and transact all other necessary business.

RULE 5. The affairs of the Museum shall be directed by the Committee (three of whom shall be a Quorum), who shall have the management and application of the funds of the Museum, but it shall not be competent for either the Annual General Meeting of the Members, or for the said Committee to make any dividend, gift, division, or bonus, in money or otherwise, unto or between any of the Members of the Museum.

RULE 6. The Committee shall appoint Honorary Curators to the various departments, and the arrangement of specimens shall be left in their hands.

RULE 7. The Secretaries shall call Special General Meetings of the Members upon receiving a requisition signed by ten Members. A fortnight's notice of such Special Meeting and its object shall be given to each Member.

RULE 8. The Chairman at Meetings shall have a casting vote in addition to his vote as a Member.

RULE 9. One (at least) of the Secretaries shall attend each meeting, and shall keep a record of its proceedings. All manuscripts and communications shall be under the charge of the Secretaries.

RULE 10. An Annual Subscription of 10s. shall constitute Membership, such subscription shall be paid in advance, and shall become due on the first of June in each year. No Member shall be entitled to vote whose subscription is in arrear.

RULE 11. Donors of Five Guineas or upwards shall be members for life.

RULE 12. Subscribers of a less sum than 10s. per annum shall not be entitled to vote at any meeting.

RULE 13. When any office shall become vacant, or any appointment shall be requisite, the Committee shall have power to fill up the same ; such appointments shall remain in force only to the next General Meeting, when they shall be either confirmed or annulled.

RULE 14. The Treasurer shall receive all subscriptions and donations made to the Museum, and shall pay all accounts passed by the Committee ; he shall keep a book of receipts and payments, which he shall produce whenever the Committee shall require it ; the Accounts shall be audited prior to the General Annual Meeting by two Auditors appointed at the previous Annual Meeting.

RULE 15. No change shall be made in the Rules of the Museum except at a general or special Meeting of the Members. A fortnight's notice of the proposed change shall be given in, at least, one of the Salisbury Papers.

RULE 16. The admission of all articles shall rest with the Committee and the Curators of the various departments, and no duplicates shall be disposed of except with the concurrence of all the Curators of the department to which the objects belong and a majority of the Committee.

RULE 17. Persons shall have liberty to deposit temporarily, books, drawings, specimens, &c., subject to the decision as laid down in Rule 16, but it shall not be competent for them to withdraw

such objects when deposited until they shall have given one of the Secretaries fourteen days notice in writing of their intention.

RULE 18. The temporary removal of articles from the Museum shall only be permissible at the discretion of the Committee (called specially) with the concurrence of all the Curators of the departments to which such articles belong, but nothing merely deposited shall be removed without the consent of the owner.

RULE 19. The Museum shall be open to the public free of charge every Tuesday from twelve o'clock at noon until four o'clock p.m., and every Monday from eight until nine o'clock p.m. On Monday, Wednesday, Thursday, and Friday in each week, admission may be obtained between ten o'clock a.m., and four o'clock p.m., upon producing a ticket, to be procured (gratis) of the Honorary Secretaries and such other persons as the Committee may appoint. Saturday, being cleaning day, the Museum will be closed, and none but officers of the Museum can be admitted under any pretence. The Committee shall have power to alter these days and hours at their discretion.

RULE 20. The attendants are strictly prohibited from accepting any gratuity from visitors to the Museum.

(Signed) W. K. SARUM,

President of the Salisbury and South Wilts Museum.

(Signed)

D. I. EYRE	}	Three Members of the Committee of Management.
JAMES HUSSEY		
THOS. WEBB GILBERT		

(Signed)

JAMES WILTON, Jun.	}	Honorary Secretaries.
JAMES CLENCH		

I hereby certify that this Society is entitled to the Benefit of the Act 6 and 7 Vict. cap. 36, entitled "An Act to exempt from County, Borough, Parochial, and other Local Rates, Land and Buildings occupied by Scientific or Literary Societies."

(Signed) JOHN TIDD PRATT,

*The Barrister appointed to certify the Rules of
Savings Banks, London.*

* The persons appointed by the Committee (in addition to the Honorary Secretaries), of whom tickets may be obtained are Messrs. Brown and Co., the Canal, and Mr. E. T. Stevens, Minster-street.

PRELIMINARY NOTICE.

It has been felt that some of the visitors to the Museum will be desirous of obtaining information respecting many objects in the Collection, without being compelled to seek it in the scattered form in which it exists : with the view of supplying such a want the present descriptive Catalogue is issued.

The Stone, Bronze, and early Iron objects in the Collection have been catalogued by Mr. E. T. Stevens ; the Mediæval series and the Pottery by Mr. Nightingale ; the Mediæval seals by Mr. W. Osmond, Jun. ; the Mammalian remains belonging to the pleistocene period by Dr. H. P. Blackmore ; and the Birds by Mr. Henry Blackmore. The Catalogue is necessarily in great degree a compilation, but it has been found impossible to make continual reference to authorities in the course of the work. From the very hurried manner in which the subject-matter has been brought together, and the rapidity with which the Catalogue has passed through the press, it is feared that many errors will be detected, but the Public will doubtless make due allowance for any trifling inaccuracies.

The illustrations are intended to render the descriptive matter more clear than could otherwise be the case. The wood-blocks have been kindly lent by Mr. Wm. Brown and Mr. Nightingale ; the anastatic drawings are by Mr. E. T. Stevens, and have been printed by Mr. Highman, of this City.

All communications respecting the catalogue as to corrections or furnishing additional information should be addressed to Mr. E. T. Stevens, Minster-street, Salisbury.

Salisbury and South Wilts Museum,
Jan. 23, 1864.

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CATALOGUE.

A portrait of the late RICHARD FOWLER, Esq., M.D., is placed over the door in the Circular Room. It was painted by Benjn. B. Wadham, in 1844, and is *presented by Mrs. Fowler*.

Dr. Fowler was born November 28th, 1765, and died April 13th, 1863.

The late Dr. Fowler and Mrs. Fowler are virtually the founders of the Museum ; through their liberality the present commodious building has been purchased, enlarged, and presented to trustees for the use of the Museum. The well-wishers of the Museum are greatly indebted to the late Dr. Fowler and to Mrs. Fowler for pecuniary aid and for liberal donations of specimens ; whilst from its foundation until his death Dr. Fowler did his utmost to promote its welfare by his advice, and through his extensive influence he endeavoured to secure its prosperity ; in all this he was most warmly and ably seconded by Mrs. Fowler. Since his decease no one has worked harder to carry out what would have been his wishes than his widow ; and the public have in very great degree to thank her for the establishment of a Museum which bids fair to be a credit to the City and the neighbourhood.

Ethnological Department.

CIRCULAR ROOM.—CENTRAL CASE.

The Stone, Bronze, and Iron Weapons and Implements in the collection are classed according to the material employed—a system not so arbitrary as may at first sight appear ; true, the Celtic flint hatchet, white with age, will thus be arranged with the New Zealanders' stone adze of yesterday, whilst those mysterious flint implements from the Drift, which will commence the series, might claim for themselves a place in the geological, rather than the archæological department. However, no abrupt line of demarcation will be found to separate the labours of the geologist from those of the archæologist. Geology is only the archæology of our globe—archæology but the geology of the pre-historic period of the human race.

With age, as measured by years, the present arrangement has nothing to do. The classification attempted is that of the de-

velopment of the "tool and weapon making art" among the families of the human race—an art to which the highest instinct of the lower animals has never attained—an art so peculiarly characteristic of man that the presence of rudely-fashioned flint implements in certain geological formations is considered to afford good and sufficient evidence of his existence at that remote period.

The flint implements of the Drift, as a type, stand widely separated from all others; the phase of mind which fashioned them has passed away—has become extinct, like many of the animals of the same period whose remains, in Cases M, N, and O, principally found in our immediate neighbourhood, have been so well catalogued and described by Dr. H. P. Blackmore. But, with this single exception (and in the case of simple flint flakes even this exception does not hold good), the stone hatchet of pre-historic age, from tumulus or cromlech is, in point of form and material, still made by the modern savage; there is an identity in the mind which fashioned both, and further, both proclaim the fashioners to be in their "stone age." This "stone age" of a people may be of long or of short duration, according to the influence of many circumstances—its termination may be lost in the mists of the most remote antiquity, or it may still be unreached in this 19th century; yet the weapons and tools of the savage of to-day should be classed, not with breech-loading guns and rifled cannon, but with those rude weapons of the past which they most resemble—they belong to the same ethnological period, however widely separated by years.

It is true that certain antiquarians have doubted whether there has been, in the history of most, if not of all nations, an age of stone, then an age of bronze, and lastly, an age in which iron superseded the use of the two former materials in the fabrication of tools and weapons. But, setting aside for the present what may be said respecting the Drift implements, and looking only to what may be termed geological evidence, all tends to establish the distinct existence of these three periods, and the order of their sequence, although the transition from the one to the other was probably gradual and not abrupt, weapons of stone and *cast* bronze may have co-existed with a people at the end of their stone age, but not at its commencement; whilst weapons of *malleable* native metal may be held to belong to the "stone age" proper, as having involved no metallurgic skill in their construction, the material being treated merely as the hardest variety of stone to be obtained in the neighbourhood. The Danish peat mosses are held to afford an instance of the use of stone implements preceding those of bronze. The Scotch fir has never, in historical times, grown in Denmark, yet large trunks of these trees, which had evidently grown on the spot, are found in the peat-mosses of that country. The Scotch fir appears, after a while, to have been supplanted by varieties of the oak, which, in their turn, have been superseded by the beech. The Danish and Swedish antiquaries and naturalists assign the

“age of stone” to the period of the “Scotch fir,” that of “bronze” to the period of the “oak,” and the “iron age” to the period of the “beech.”

The discussion of all such questions is, of course, foreign to the purpose of a mere catalogue like the present, which is written for the purpose of describing the objects exhibited in such a manner that visitors unacquainted with geology or archæology may not entirely lose the interest with which those sciences invest such everyday things as stones and flints.

CASE P.

This Case contains a series of Flint Implements from the Drift, for the geological character and description of which formation see catalogue of Cases M. N. and O.

It is well known that the discovery of such implements as those exhibited has created great and needless uneasiness in the minds of many. Some have taken alarm at the antiquity which has in consequence been assigned to the existence of the human race. They are willing to subscribe to the co-existence of man with certain extinct mammalia, but are disposed to hold that geologists may have miscalculated the age of the drift beds, and consequently have reasoned upon erroneous data. This is a legitimate, and, within due bounds, a good objection; but it is unwise to advance such an argument until the geological evidence already accumulated on the point has been duly examined and weighed.

Other persons are more reckless, and disregarding the patient and careful investigation which has been conducted by such men as Lyell, Prestwich, Evans, Christy, and Lubbock—men who, so to speak, have sifted the evidence through their own hands, and who, moreover, approached the subject with minds stored with the peculiar branches of knowledge fitting them for their work—disregarding all this, there are those who affirm boldly, upon possibly a most superficial glance at the subject, that man did *not* co-exist with the Mammoth and these other extinct mammals, for say they no human bones have been found in the same beds with the remains of those animals. Have such persons dispassionately read the account given by Dr. Schmerling of the discovery of a human skull in juxta-position with the upper molar of the *Elephas primigenius* in the caverns of Engis? or of the human jaw found by M. de Vibraye in a cavern near Arcy, in the lowest and *undisturbed* bed in the cave, which also contained numerous remains of the *Rhinoceros tichorhinus*, *Ursus spelæus*, and *Hyæna spelæa*? How few *human* bones have been discovered upon the numerous sites of the lake settlements in Switzerland. Here was a people, actually living *over* the water for centuries, and yet it is by man's works rather than by his remains that the Swiss lake beds speak to us in unmistakable tones of a pre-historic people, who cultivated wheat and barley, spun and wove flax, and possessed domes-

ticated animals. Nevertheless, because human bones have not hitherto been found in the undisturbed drift beds, there are those who deny that man existed during the drift period, in spite of the evidence afforded by the chipped and worked flint implements, "as if man's works were not as certain evidence of his existence as any portion of his frame." That these implements are human worked has now been conceded by all who have paid any attention to the subject. Even the most rudely-formed implement affords traces of design in the direction of the chipping and in the choice of the material. Sometimes, even, a rounded flint pebble has been selected, one end of which has been preserved evidently for use in the hand whilst the other has been carefully chipped down to a working point. (See plate 2, fig. 2.) Such an implement could only have been designed by a reasoning being, and one is tempted to see in such an instance the result of a train of thought arising from the inconvenience experienced in using an implement rough in the hand which the maker sought to remedy in this way. Clearly, however, the implement was intended not simply as a tool, but as a tool to be used in the hand without inconvenience or injury to the user, although this hint was not improved upon as at a later ethnological period, for in no instance does *artificial rubbing* occur during the drift period.

The numerous highly-finished and symmetrically-chipped drift implements which exist, however, render argument on this point needless; the human workmanship of many is self-evident, and in the present state of our knowledge it is perhaps safe to assume—

- 1st. That certain chipped and flaked flints, found in drift deposits, were so chipped and flaked by man's hands, and are readily distinguished from the other flints in the same beds which have been fractured from natural causes.
- 2nd. That these human-worked flints are found in undisturbed soil, exhibiting that rough stratification common to drift deposits, and, therefore, that the *beds* afford evidence that the implements are contemporary with themselves.
- 3rd. That these implements *in themselves* afford evidence of having been deposited contemporaneously with the other materials of the drift beds in which they occur. When found in gravel they are water-worn like the other flints, or they are like them polished from the action of the sandy water, which flowed alike over rough flint and chipped implement lying side by side upon the old drift river bed; but in all cases the implements bear the same external appearance and *patina* as do the naturally-fractured flints associated with them. Now as this patina extends over the *whole* surface of the implements to their minutest chip, the implement, as now chipped into form, must have been so chipped when it was exposed to this process of natural polishing, together with the naturally-fractured flints which were then polished with it. From this

it follows that the implement *itself* affords evidence that it was coeval with the beds in which it is found.

4th. That the beds in which these implements are found contain the remains of mammalia, the majority of which are of extinct species. That these mammalian remains have not been washed out of any older geological formation, but that the animals to which they belonged lived and died during the deposition of these drift beds. True, where the deposit is a coarse gravel, the bones, like the implements and the gravel itself, are water-worn; all, as constituent parts of the same bed, have been subjected to the same rolling action; but, in the tranquil reaches of the ancient drift river, where it assumed a lacustrine character, and the deposit, as at Fisherton Anger, is brick-earth, the sediment of turbid but at least tranquil water, the mammalian remains have not been rolled at all; the carcase may have floated down the stream, or the animal may have died on the spot, but the bones, divested of the integuments, have not travelled at all, and, in looking at them, we see the remains of the veritable fauna of the drift period.

To sum up what has been advanced. The human worked flints are shown to be coeval with the drift. The unrolled condition of the extinct mammalian bones (proving that they could not have been derived from older formations), establishes the fact that these animals also were coeval with the drift, and therefore that man, the fabricator of the implement, was coeval with the Mammoth and the other extinct animals whose remains occur in the drift.

Flint implements, found in drift deposits, have been divided into three groups—

1. *Flakes*, of which No. 12 is an example, and plate 1, fig. 1 and 2.
2. *Weapons*, with an acute or else a rounded point, as Nos. 9 and 37, spear-shaped type (see plate 2, fig. 1 and 2).
3. *Oval or almond shaped implements*, with a cutting edge all round, as Nos. 28 and 32 (see plate 1, fig. 3).

There is, however, so much variety in form, that these classes blend or run the one into the other. This applies in an especial degree to the second and third classes.

1. Portion of upper molar of horse (*Equus caballus*).

2 and 3. Flint implements.

Nos. 1 to 3 are from the Pleistocene gravel of Amiens, and are deposited by *Mr. C. J. Read*.

4. Upper molar of horse (*Equus caballus*).

5 to 13. Flint implements.

Nos. 4 to 13 are from the Pleistocene gravel at Porte Marcadé, Abbeville, and are deposited by *Dr. H. P. Blackmore*.

14. Land Shells from the Pleistocene fluvio-marine sand (*sable aigre*) of Menchecourt, near Abbeville, consisting of—

1. <i>Limax agrestis</i>	5. <i>Helix</i>
2. <i>Helix arbustorum</i>	6. „ <i>pulchella</i>
3. <i>Vitрина pellucida</i>	7. „ <i>pygmæa</i>
4. <i>Pupa muscorum</i> (?) (young)	8. <i>Cyclostoma elegans</i>

15. Freshwater Shells, from the *sable aigre* of Menchecourt.

9. <i>Limnæus pereger</i>	16. <i>Bithinia ventricosa</i>
10. „ <i>palustris</i>	17. <i>Valvata piscinalis</i>
11. <i>Velletia lacustris</i>	18. „ <i>cristata</i>
12. <i>Planorbis carinatus</i>	19. <i>Cyclas rivicola</i> (?)
13. „ <i>spirorbis</i>	20. „ <i>cornea</i>
14. „ <i>vortex</i>	21. <i>Pisidium pulchellum</i>
15. <i>Bithinia tentaculata</i>	

16. Marine Shells from the *sable aigre* of Menchecourt.

22. <i>Buccinum undatum</i>	25. <i>Tellina solidula</i>
23. <i>Litorina rudis</i>	26. <i>Hydrobia marginata</i>
24. <i>Litorina</i>	

All the shells exhibited from Menchecourt are of existing species.

17. Specimens of *sable aigre*, with shells, from Menchecourt.

18. Portion of canine and three molars of Cave Lion (*Felis spelæa*).

19. Lower end of tibia of *Bos longifrons* (young).

20. Part of phalanx of *B. longifrons*.

21. End of metacarpal bone of *Bos*.

22. Scaphoid of Horse (*Equus caballus*).

23. Lower molar of Horse (*E. caballus*) (milk tooth)

24. Lower molar of Horse (*E. caballus*)

25 and 26. Flint implements.

Nos. 14 to 26 are from the drift of Menchecourt, near Abbeville, collected in 1862, and deposited by Dr. H. P. Blackmore.

27. Flint implement, found by Mr. James Brown, on the sea coast at Hill Head, near Fareham, Hants, May 31st, 1863.

The two following specimens were discovered by Mr. Brown, close to the same spot, November 16th, 1863 :—

28. Flint implement, found by Mr. James Brown, at Hill Head, November 16th, 1863. This specimen has been broken across, apparently a cart wheel has passed over it.

29. Portion of a flint implement, found by Mr. James Brown, at Hill Head, November 16, 1863.

30. Flint implement, found by Mr. Bell, in November, 1863, at Hill Head.

Nos 27 to 30 are *deposited by Mr. James Brown*, to whom belongs the credit of discovering the implement-bearing character of the drift which caps the cliffs near Hill Head. The four implements in this case are the only specimens yet obtained from this locality. A large mass of the drift had fallen from the upper part of the cliff upon the shore, very shortly before No. 27 was found; probably Nos. 27 to 29 fell with it.

The discovery made by Mr. Leech in the autumn of 1860, upon the sea-coast near the Reculvers, is of a similar nature. In all Mr. Leech found six flint implements at that spot, all of which are now in the Museum in Jermyn-street. In the spring of 1861, Mr. Evans and Mr. Prestwich accompanied Mr. Leech to the same spot, and obtained two more of these implements, to which number three others were subsequently added.

31 to 35. Flint implement from the drift of the valley of the Lark, near Icklingham, Suffolk, *deposited by Mr. E. T. Stevens*.

An argument as to the contemporaneous deposition of the flint implements with the drift beds in which they are found is derived from their colour. When they are taken from yellow gravel, they are stained of an ochreous-yellow colour; others have acquired brown tints, according to the matrix in which they have been enclosed. "This accordance in the colouring of the flint tools with the character of the bed from which they have come, indicates not only a real derivation from such strata, but also a sojourn therein of equal duration to that of the naturally broken flints forming part of the same beds."

36. Flint flake (qy. if natural) from the lower-level drift gravel at Petersfinger, near Salisbury.

37 to 40. Flint implements from the higher level drift gravel at Bemerton, near Salisbury, found by Dr. H. P. Blackmore, in the autumn of 1863.

Nos. 36 to 40 are *deposited by Dr. H. P. Blackmore*.

Of course questions are asked about these flint implements from the drift. What were they used for? How came they at the bottom of the ancient drift river bed? and so on. Questions not simply difficult, but impossible to answer satisfactorily. All that can be done is to look for existing races of men whose mode of life may afford us a clue to the probable solution of the difficulty. Mr. Prestwich has suggested that such a clue is afforded by the American Indians who now inhabit the country between Hudson's Bay and the Polar Sea. As often as deer and other game become scarce on the land, these Indians betake themselves to fishing in the rivers, and for this purpose and also to obtain water for drinking, they are in the constant practice of cutting round holes in the ice, a foot or more in diameter, through which they throw baited hooks or nets. For making these holes they use *ice-chisels*, of metal, when they

can get copper or iron, but when they are unable to do so, they employ tools of flint or hornstone.

Now the flint-implements of the drift are admirably fitted for use as ice-chisels, what more probable than that the tool should slip from the benumbed hands of the workman, of course never to be recovered by him.

Following out this theory, tribes of these hunters and fishers of the drift would probably select favourite spots in the estuaries and rivers of the period in which to make their ice-holes; to these they would have resorted year after year, affording a *possible* clue to the local distribution of the flint implements, which appear to be abundant at certain localities, and entirely absent in others of precisely similar geological character. If the ice-hole theory be adopted, it ceases to astonish us that human remains are absent in drift deposits—the ice-chisel might slip through the hole, but there would be little chance of the fisherman doing the same.

A few mammalian remains from the drift of various localities are exhibited in this case, merely to illustrate the flint implements. The visitor is referred to Cases M, N, and O for a more complete and extensive series of these objects.

41. Upper molar of Mammoth (*Elephas primigenius*), found in the drift at Burcombe, in 1863.
42. Fragment of tusk of Mammoth (*E. primigenius*), from the drift near Gravesend.
- 43 and 44. Lower molars of *Rhinoceros tichorhinus*, from the drift of Fisherton Anger, near Salisbury.
45. Specimen of shell band in the drift exposed by the Railway cutting at Milford, near Salisbury.
46. Specimen of the drift in Harnham valley, sand with rolled chalk.

Nos. 41 to 46 are *deposited by Mr. E. T. Stevens*.

CASE Q.

All deposited by Dr. H. P. Blackmore, except stated to the contrary.

- 1 and 2. Forgeries of flint implements (drift type) made and sold by the workmen at Porte Marcadé, Abbeville, *deposited by Mr. E. T. Stevens*.

Keeping (of the Isle of Wight), a well-known geologist, has been employed by Messrs. Evans, Prestwich, and others, to dig in the pits at Moulin Quignon, and he has established beyond a doubt the fact that the workmen bury their forgeries in the gravel (a dark, sandy gravel, called the *black seam*, the colour of which is derived from an admixture of oxide of iron and manganese), in order the more completely to deceive collectors, who would thus be under the idea that they themselves found the implements *in situ*. All the seven specimens dug out by Keeping himself are

modern forgeries. In all the forged implements the patina is wanting—in shape they differ somewhat from genuine specimens, and the edges are quite unworn. Mr. Evans and Mr. Lubbock detected smears, brush marks, and finger marks, upon some forged implements, at the *time of their disinterment*.

3 to 6. Forgeries of flint implements (drift type), made and sold by the workmen near Amiens, *deposited by Mr. C. J. Read*.

7 to 19. Examples of flint, flaked and chipped from *natural* causes, and approaching the appearance of *human worked* flints. 12 to 16 are from drift beds, and the fractures are aged and patinated precisely as with the human worked flints from the same beds, see examples in Case P. *Deposited by Mr. E. T. Stevens*.

20. "Fossil beads" (so called), from the drift of Fisherton Anger, and other localities, *deposited by Mr. E. T. Stevens*.

The presence of these *fossil beads* in drift deposits was held at one time to afford a further proof of man's existence at that remote period, for by his hands it was contended that the holes had been bored. They are, however, common fossils in the chalk (*orbitolina globularis*), in which they are found in the perforated condition, or solid, or with a more or less shallow hole in their substance. The perforation of these non-drifted specimens in the chalk is often as smooth and straight as if artificial; (see No. 21*f*, and plate 3, fig. 2). The interior surface, however, is not worn, but consists of the natural structure of the organism, and may be due to the *orbitolina* having grown around a smooth stem of sea-weed. As *perforated* specimens of this fossil occur in the chalk, so do *im-perforated* orbitolinæ occur in the drift gravels, and it is obvious that the *fossil beads* of the drift must be regarded simply as evidence of the denudation of chalk.

A savage probably would have selected these perforated objects for decorative purposes, just as we find the Ancient Briton *did* select shells with natural perforations such as the *dentalium* for necklaces and the like. Some of these *dentalia* were discovered in a tumulus at Winterborne Stoke, near Salisbury (see plate 3, fig. 4). It is clear that they must have been collected on some sea-coast, simply because they presented a perforation adapting them for stringing, orbitolinæ, on the other hand, possessing a similar perforation, were to be had close at home.

The Celt (like other people in a similar state of civilization) availed himself of any natural objects, pretty in themselves, out of which he made personal ornaments, whether they were naturally perforated or not; thus with the *dentalia* were found some joints of the vertebral column of a fossil *pentacrinite*, a fossil not likely to be met with near Salisbury, but possibly obtained from the lias of Somerset or Dorset. The Rev. E. Duke possesses a large bead, found in a tumulus at Lake, near Salisbury, which is formed from

a fossil echinus (*diadema*), the natural indentation doubtless having suggested the idea of perforating it.

The savage would have selected a suitable stone for his axe-head ; but whereas there is evidence of human wormanship, of human forethought about the flint implements of the drift, there is none whatever as to the *artificial* drilling of the "fossil beads," and consequently, whilst admitting that they may have been used by man, they still afford no evidence as to the antiquity of the human race.

21. "Fossil beads" (so called), *deposited by Mr. E. T. Stevens*. These exhibit rolling action, just as with drift specimens. They are from a whiting-maker's pit, and were, of course, taken to it direct from the chalk pit.

21*a* and 21*b*. Imperforate *orbitolinæ* from whiting-maker's pit.

21*c*. *Orbitolinæ* from whiting-maker's pit, with perforations not extending through the specimens.

21*d*. *Orbitolinæ* from whiting-maker's pit, perforations so nearly extending through the specimens that they are translucent. Had rolling action been carried on a trifle longer, the perforation would have been complete. Had these specimens been bored by a savage the hole would have been drilled from the opposite sides to meet in the middle. This is illustrated by the beads from Berwell Fen in Case R.

21*e*. *Orbitolinæ*, from whiting-maker's pit, apparently perforated, but with the original chalk not removed, and still filling the centre of the perforations.

21*f*. *Orbitolinæ*, perforated, obtained direct from the chalk pit. The chalk worked out that the apparently artificial but really natural perforation may be seen.

21*a* to 21*f*. *Deposited by Mr. E. T. Stevens*.

22. Portions of the skeleton of an infant (a few months old), found by Dr. H. P. Blackmore, in the railway cutting opposite Belmont, near Salisbury. The interment was covered with broken flints, Nos. 24 to 27, and was associated with fragmentary rude hand-made pottery, No. 28 ; a glass bead, No. 23, was also found with the skeleton. Other human remains were found in the neighbourhood, the crania being of the long type (kumbe-cephalic), supposed to be one of the earliest types of skull, see No. 1 in Wall Case D D, which is one of the crania so discovered.

29 to 31. Flint implements found near the interment at Belmont, just described.

32 and 33. Flint implements, found by Dr. H. P. Blackmore, at Petersfinger, near Salisbury.

34. Flint implement dredged from the bed of the Thames, *deposited by Mr. E. T. Stevens*.

35 and 36. Flint implements from the peat of the valley of the Somme, near Abbeville, presented to Dr. H. P. Blackmore and Mr. E. T. Stevens, by M. Boucher de Perthes, as also Nos. 11 and 26, in Case P.

37 to 40. Fragments of rude hand-made pottery, found by Dr. H. P. Blackmore, in a field at Petersfinger, near Salisbury, with specimens Nos. 32 and 33 and 41 to 84 in this Case, and Nos. 1 to 61 in Case R, as well as the rude hand-made pot No. in Wall Case. Pieces of charcoal and a few fragments of ox bones were found scattered through the soil near the spot where the pot was discovered—but no human bones were found.

As illustrating the other specimens in this Case, and some in Case R, it may be well to allude to the mode of making arrow-points, spear-points, and knives, from flint and certain other substances, by taking advantage of the conchoidal or shell-shaped fracture of the material; by this method, combined with a certain amount of dexterity acquired by practice, a knife or an arrow-point can be made with a single blow, although the block or core (see plate 4, fig. 1), from which a single blow could produce such a flake, must be first formed. Every human-made flake tells of at least two rough outside flakes having been struck off previously from the block of flint, whilst flakes of the second series—those which exhibit a flat rib upon the middle of their outer surface (see plate 4, fig. 4), have required three previous flakes to be struck off, and remember *all* these flakes have been struck off in one determinate direction, with one sole object in view throughout the entire process—namely, the formation of the implement. Thus, the merest fragment of a flint flake tells its tale of human workmanship as plainly as the more finished hatchet.

The *flaking* of materials possessing this property appears to be nearly universal with people in their “stone age” sometimes even flint was obtained in barter, when it could be procured in no other way; sorrowing friends stored up by the lifeless body little heaps of flint flakes for use in the future state. In modern times, bottle glass, thrown upon the shore by the waves, has been turned to account by savage tribes, even (as in Australia) superseding the use of quartz for knives (see No. 15, Case V), and for giving a jagged edge to spears. In America the Aztecs used obsidian, which flakes even more readily than flint, and Nos. 32 and 33 on the diagram are examples of spears from New Caledonia, both tipped with flakes of obsidian. Not only are flakes found, but also the cores or nuclei from which the flakes have been struck off. Fig. 1, plate 4, is the representation of a well-defined example of a flint-core, from a specimen in the Museum of the Royal Irish Academy—a flake from such a core is figured by its side, and both are of the natural size. Our own neighbourhood, however, has

yielded us some flint-cores (see Nos. 41 to 45), whilst the specimens of flaking in the collection are very numerous.

All collectors are aware that dozens of ill-defined, and (for the tool-maker's purpose) useless flakes, occur to one of a well-marked and definite form; yet, shapeless as these rejected or spoilt flakes look to an ordinary observer, they bear the stamp of human work in a manner not to be mistaken.

In order to make a core, the outside rough surface must be dressed off before work can be commenced to much purpose. You naturally expect, therefore, to find these rejected proofs of the ancient tool-makers' trade, and whether in bone cave, site of old settlement, or even beneath the Sarsen stones at Avebury, such is the case. In striking off flakes from the core, it is necessary to give a smart shock to the mass rather than a heavy blow; this shock should be given with a pointed tool, and many of the flakes in this Case show that they *were* struck off with such a tool. Practice alone can teach the operator how to measure the force he employs. If the tap (which should be given as it were and withdrawn) is too heavy, the flake splinters out from the core abruptly, and does not taper off as should be the case; here are more waste flakes to mark the site of the operation. If the blow is not smart enough, the flake will exhibit a series of waves upon its inner surface, bearing evidence of the want of skill in its production.

The experience of travellers is to the effect that with modern stone tool makers, time being of little object, chipping flint affords much the same amusement as whittling a stick is said to furnish to a people by no means in their "stone age." We may believe that this held good in ancient times; what wonder then that so many chips exist. The material was abundant enough, the winter evenings tediously long, whistling "for want of thought" possibly had not come into fashion, and chipping flint, perhaps, stood in the stead of the mental process or its physical substitute.

Viewed in this light, apparently un-tool-like flint flakes, if only they exhibit a trace of design in the manner and direction of the blow which severed them from the mass, become of interest, and are not so readily found on any heap of wayside stones as may be imagined by a person who has never tried the experiment.

41 to 45. Flint "cores," found by Dr. H. P. Blackmore, in a field at Petersfinger, near Salisbury.

46 to 51. Rough outside flint flakes, with a cutting edge worked off on one side, and the thick back left, found at Petersfinger, by Dr. H. P. Blackmore. Flakes of this form could be used in the hand without inconvenience, as knives or skin scrapers. That sharpened stones are used for such purposes is well known; thus the aborigines of Australia prepare their kangaroo skin mantles, by cutting them into shape and scraping away the inner surface until the skin becomes soft and pliable, and this is done with sharpened stones only.

52 to 84. Flint flakes found by Dr. H. P. Blackmore, at Petersfinger, divisible into two main types.

The spear-point like type, as Nos. 52, 53, and 56, and plate 1, fig. 1.

The chisel-end type, as Nos. 66 and 69, and plate 1, fig. 2.

85. Flint implement found at Fisherton Anger, near Salisbury, by Dr. H. P. Blackmore.

86 to 88. Flint flakes found near Pewsey, by Mr. Henry Blackmore.

89. Flint flake found near Old Sarum, by Dr. H. P. Blackmore.

90 to 106. Flint flakes found upon and close round a tumulus, near Britford, by Dr. H. P. Blackmore and Mr. Henry Blackmore.

The greater part of these are merely rough flakes, probably cast aside as worthless. 106 shows that a pointed tool must have been used to flake it from the mass.

99 is more definite in its form, and approaches the shape of an implement.

CASE R.

All deposited by Dr. H. P. Blackmore, except stated to the contrary.

1 to 13. Flint flakes, found by Dr. H. P. Blackmore, at Petersfinger.

4, 9, 10, 12, and 13 are the most clearly defined forms.

14 to 22. Flint hatchets, found by Dr. H. P. Blackmore, at Petersfinger, some in point of form approaching the drift type, as No. 14.

23 and 24. Flint flakes, chisel-end type, found by Dr. H. P. Blackmore, at Petersfinger.

25 to 41. Flint flakes, found by Dr. H. P. Blackmore, at Petersfinger. Some of these show much subsequent chipping, as Nos. 25 and 37, which have the entire cutting edge carefully removed. No 33 is a good example of the conchoidal fracture.

42 to 50. Flint implements, found by Dr. H. P. Blackmore, at Petersfinger, all except No. 45 curiously provided with a notch on one, and in some cases on both sides, as No. 48, 49, and 50.

51 to 55. Worked flints, found at Petersfinger, not definite in form but exhibiting considerable use.

56 to 61. Worked flints, from the superficial soil at Bemerton, near Salisbury, above the drift gravel, in which the human worked flint implements, Nos. 37 to 40, Case P, were found by Dr. H. P. Blackmore.

62 and 63. Portions of antlers of red deer, showing tool marks, found with rude hand-made pottery, Nos. 64 to 67, in some graves (said to seven, in some of which human remains were found) in a chalk pit, near the Chase, Bower Chalk, in 1862.

64 to 67. Fragments of pottery, found with the objects last described.

The specimens from No. 62 to 67 *presented by Mr. Sidford, Bower Chalk.*

68. Jet and amber beads, found in Berwell Fen, Cambridgeshire.

69. Flint flake, found in Berwell Fen.

70 and 71. Flint implements, found close together in Berwell Fen, near the remains of a boar (Nos. 74 and 75). These specimens are the first in the series exhibited which show any trace of *rubbing*, and even these only appear to have had the sharp angles removed, which would otherwise have injured the hand in use. Contrast the coarse work of these specimens with the high finish of some in Case T. This type seems peculiarly adapted for using in the hand, and would have been serviceable in *chumping* out the charred interior of a tree, for the purpose of converting it into a canoe.

72 and 73. Bone implements, found in Berwell Fen; 72 made from the splint or small metatarsal bone of horse (fig. 4 and 5, plate 6).

74. Upper tusk of wild boar, found in Berwell Fen, near Nos. 70 and 71.

75. Lower tusk of the same.

76. Antler of roe deer, showing tool marks. This is *not* a shed antler. Found in Bottisham Fen, Cambridgeshire.

77. Antler of roe deer (shed), found in Berwell Fen.

78. Antler of roe deer (shed), found in Bottisham Fen.

79 and 80. Two modern implements, both made from horse bones (not, however, obtained from the same individual); 79 is made from the radius of the right fore leg, and 80 from that of the left fore leg. Such an implement is still *occasionally* used in Cornwall for removing the bark from trees, although the *rhinding iron*, No. 81, is rapidly taking its place. These specimens are exhibited to illustrate such objects as Nos. 72 and 73 in this case, and Nos. 16 and 19 in Case S. They were given to Mr. E. T. Stevens by Mr. Darke, of Salisbury. Examples of modern bone chisels (made from leg bones) are exhibited in the British Museum, and were brought from Tahiti.

81. Rhinding iron, now in general use for barking timber, *presented by Mr. Griffin, jun.*

The specimens from No. 68 to 80 *deposited by Mr. E. T. Stevens.*

CASE S.

Case S contains a series of specimens from one of the Swiss Lake Dwellings or Pfählbauten (Robenhausen on the Lake Pfäffikon, a little to the north of the Lake of Zurich), *all presented by the Hon. and Ven. Archdeacon Harris.*

The Swiss lake-dwellings first attracted attention during the dry winter of 1853, when the inhabitants of Meilen, on the Lake of Zurich, in dredging mud for the purpose of raising the level of some ground which they sought to reclaim, discovered a number of wooden piles deeply driven into the bed of the lake, and from this spot they dredged up a number of stone hammers, stone axes, and other implements, as well as fragments of rude hand-made pottery. This discovery soon led to others of a similar nature on the Lakes of Constance, Zurich, Geneva, Neufchatel, and on most of the smaller lakes, and it became evident that a race of people had inhabited Switzerland, who probably for security built their villages upon platforms raised upon piles driven into the bed of the lake. After a time it was remembered that Herodotus had given the description of habitations which must have strikingly resembled those on the Swiss lakes. A Thracian tribe dwelt in the year 520 B.C. in Prasias, a small mountain-lake of Pæonia (now part of modern Roumelia), and the Father of History thus describes the construction of their dwellings:—"In this lake strong piles are driven into the ground, over which planks are thrown, connected by a narrow bridge with the shore." * * "Upon these planks each man has his hut, from every one of which a trap-door opens to the water." * * "Their horses and cattle are fed principally with fish." As we shall see the Swiss lake-dwellers, like the Pæonians, possessed horses and cattle, and there is evidence that, as in their case, a narrow bridge formed the medium of communication between the village and the shore, for a double range of stakes is often found in a straight line from the mass of stakes to the shore. That some of these Swiss lake-villages were of considerable extent is certain—one at Wangen must have stood upon no less than 40,000 piles, whilst M. Troyon, from calculations based upon the area occupied respectively by the already-discovered villages of the "stone age," estimates the population at about 31,800 persons, and that of the "bronze age" settlements at 42,500.

In the case is exhibited a copy of the ideal restoration of one of these villages, made by Dr. F. Keller, of Zurich, in which he has not trusted to his imagination only, but has availed himself of a sketch published by M. Dumont d'Urville of similar habitations of the Papoos, in New Guinea, in the Bay of Dorei.

As yet all the settlements of the bronze period are confined to Western and Central Switzerland, whilst in the more eastern lakes those of the stone period alone have as yet been discovered.

In Switzerland a stone age preceded that of bronze, for the piles

which supported the villages of the former period are far more decayed than is the case with those belonging to the bronze age.

The animal remains show that the owner of the bronze hatchet had made an important advance in civilization, by abandoning in increasing degree the uncertain life of the hunter for the more settled occupation of the herdsman.

The lake-dwellers of the early stone period fed on venison and the flesh of the wild boar, more than on the flesh of domestic cattle; this was reversed in the later stone period and in the age of bronze. Remains of the tame pig are altogether wanting in some of the older stone stations, whilst this animal was a common article of food in the bronze age. In the beginning of the age of stone in Switzerland the goats outnumbered the sheep, but towards the close of the same period the sheep were more abundant than the goats.

Even in the earliest settlements, however, several domesticated animals occur; there were two races of ox, and one each of the goat, the sheep, and the dog. The most common species of domesticated ox was the "marsh cow" (*Bos longifrons*), the second species was derived from the wild bull (*B. primigenius*.) In the later division of the stone period, two tame races of pig existed—one large and derived from the wild boar, the other smaller, the "marsh hog" (*Sus Scrofa palustris*).

A middle-sized race of dogs continued unaltered throughout the entire stone period, but in the bronze age a large hunting dog and a small horse appear. In passing from the oldest to the most modern sites, the extirpation of the elk and beaver, and the gradual reduction in numbers of the bear, stag, and roe, are distinctly perceptible. The Lithuanian bison died out in Switzerland about the commencement of the bronze age.

Very few human bones have been discovered, and only one skull (dredged up from Meilen, and belonging to the early stone period) has as yet been carefully examined, the type much resembles that now prevailing in Switzerland (Professor His, quoted by Sir Charles Lyell.) Professor Rüttimeyer is said to be at present engaged in investigating some human remains from the lake dwellings of Switzerland, and his researches will probably throw much light on this subject.

According to calculations made by M. Morlot, M. Troyon, and M. Victor Gilliéron, all reasoning from different data, the settlements of the early stone period may claim an antiquity of from 5000 to 7000 years, and those of the bronze age of from 3000 to 4000; but these figures, in the present state of our knowledge, must be held to admit of considerable alteration. A few of the most modern lake-dwellings, such as Noville and Chavannes, are assigned by antiquaries to so recent a period as the 6th century; in these the first traces are observable of the domestic cat and the domestic fowl.

Passing by such modern examples as that afforded by the island-

dwellings of the Afaij Arabs in the marshes of the Euphrates, the aquatic habitations of the negroes on the Tchadda and the villages of the Papuans of New Guinea, which are built on wooden platforms in the tide rivers—the lacustrine mode of life at a more distant period is proved to have been by no means peculiar to Switzerland, and may perhaps be regarded as typical of no race, but rather as having been adopted almost instinctively whenever and wherever the means lay at hand, and security from the attack of man or brute was sought. Even the sculptures of Nineveh exhibit traces of similar habits among some of the subjugated nations. Piles which supported similar villages to the Swiss lake-dwellings have been discovered in the lakes of Northern Italy. The Irish lake-dwellings (Crannoges) did not stand on a platform supported by piles, nor were they, strictly speaking, artificial islands, but *chrans*, small islets or shallows which existed in the lakes, and of which advantage was taken by the natives, who enlarged and fortified them by piles of oak timber,, and in some cases by stone work; they were rarely approached by a causeway, but, generally speaking, were completely insulated.

America furnishes us with the remarkable instance of a lacustrine village growing into a lacustrine city. At its first establishment, ancient Mexico stood on piles, and consisted of mere huts made of sticks, reeds, and mud, like those on the Swiss lakes; these frail structures were in time replaced by dwellings built of hewn stone and lime, whilst causeways of the same materials connected the vast city, for such it now was with the shore, and yet even in the palmiest days of its power, the insular position, the lacustrine character of ancient Mexico was maintained, and its stone causeways were spanned by bridges as easily destroyed as were the pile-supported bridges of the Pæonians, or of the Swiss lake-dwellings.

The settlement of Robenhausen, from which the present very interesting series of objects was obtained, belongs to the stone period; it has furnished no trace of the use of metal. Handles of tough ash wood, or the worked antlers of the red deer were used by its inhabitants for mounting their stone axes, and they also knew the convenience to be derived from perforating the handle and wearing the weapon suspended by a cord. At Robenhausen, as at most settlements in the stone age, in all countries, the boats were formed from the trunk of a tree, simply hollowed out; one of these found at Robenhausen, and made from the trunk of a yew tree, measured 12 feet long, and 2 feet wide. A boat of similar construction, but of much larger size, was found capsized at the bottom of the Lake Bienné; it measured 50 feet long, and 3½ feet wide; such a boat has been found in connexion with nearly every Irish Crannoge. They were probably made much as they are by modern savages, and the description given by Captain Speke, of the method adopted by the natives living on the shores of the Tanganyika Lake, in Central Africa, doubtless places before us the general mode of constructing such vessels. After the tree has been

felled, and the branches have been dressed off, the upper surface of the prostrate tree is coated with wet mud; the natives then set fire to and smoulder out the interior of the trunk, which they pare out and finish with their rudely constructed hatchets.

The visitor's attention is particularly directed to the textile materials from Robenhausen, see Nos. 45 to 48; to the specimens of cultivated and wild apple, Nos. 32 and 34; to the examples of grain and bread, Nos. 28 to 31; and to the rough chippings of flint, Nos. 7 to 12, which tend to show that these lake-dwellers traded, for flint is unknown in Switzerland as a natural product. The specimens exhibited probably came from the South of France, and were obtained in barter. Flint is not the only substance which the Swiss lake-dwellers must have thus procured; jade in wedges or wrought into hatchets has been found in several of the settlements; this certainly is not a native product, and some mineralogists would fain derive it from the East. Amber also occurs, which probably was imported from the shores of the Baltic.

CASE S.

All presented by the Hon. and Ven. Archdeacon Harris.

- 1 and 2. Pieces of worked stag's horn (*cervus elaphus*), No. 2 (plate 5, fig. 1) has been used for mounting a stone hatchet at one end (such as No. 3); the other end was probably inserted in a wooden handle. For another method of mounting in stag's horn, see fig. 31 on diagram, and plate 5, fig. 2, 3, 4, and plate 6, fig. 1, 2.
- 3 to 6. Stone hatchets.
- 7 to 12. Rough flint flakes. Flint does not occur in Switzerland as a natural product: these were probably obtained in barter, and would be worked into arrow points, skin scrapers, &c., on the spot, as occasion required.
13. Flint implement. This specimen is not merely flaked; it shows much subsequent chipping.
- 14 and 15. Bone implements, said to have been used as augers, (plate 6, fig. 3) is made from ulna of Bos (young).
16. Bone implement, said to have been used as a needle (plate 6, fig. 6) made from metatarsal bone of red deer.
- 17 to 19. Bone chisels (plate 6, fig. 7, 8, 9).
20. Bone needle.
- 20a. Modern example of a bone needle, used by the natives of Newfoundland, for making snow shoes (13th Dec., 1826), *deposited by Mr. E. T. Stevens*. Among the aborigines of Australia, the only needle employed is the claw of the kangaroo, and the sinews of the tail of the same animal are used for thread.

- 21 to 25. Fragments of handmade pottery, the unornamented specimens much in character like Nos. 37 to 40, Case Q, and Nos. 64 to 67, Case R. Nos. 23, 24, and 25, are rudely, but considerably ornamented.
26. Stone used for pounding corn. See Nos. 19, 20, Case V, and fig. 29 on diagram.
27. Grindstone for giving an edge to bone and other implements; it has been used on both sides.
28. Bread
29. Barley
30. Wheat
31. Ear of Corn
- } From these carbonized specimens it seems that the lake-dwellers of the stone period cultivated certain cereals, and used them for food.
32. Cultivated apple, sliced; probably had been dried and stored for winter consumption.
33. Apple pips.
34. Wild apples.
35. Hazel nuts: one has been gnawed by a mouse (?) when in its fresh state.
36. Plum or sloe stones: one gnawed as in No. 35.
37. Fir seeds.
38. Fir cone.
39. Raspberry seeds.
40. Strawberry seeds.
41. Red stone.
42. Float for fishing net, made of a piece of light wood.
43. Fish scales.
44. Clay ball, possibly used in spinning flax.
- 45 to 47. Pieces of linen (?) cloth woven in the loom. Nos. 46 and 47 show the fibres of plants interlacing the material, arising from the growth of the peat above them, and furnishing an argument in favour of the genuine nature of the specimens.
48. Piece of plaited (or perhaps of knotted) linen (?) cloth. At Wangen, also on the Lake of Constance, one of the most ancient of the lake-dwellings, plaited cloth, supposed to have been made of flax, has been discovered.
49. Seed pods of flax plant.

The specimens of flax and of woven cloth were obtained by M. Messikomer at Robenhausen, who, from the nature of the objects discovered, imagines that the spot examined must have been the site of a hut used by the lake-dwellers for the preparation and the weaving of flax. The mud was removed from an area of several square yards in extent, and the objects in question were then discovered at a depth of from eight to nine feet in the underlying peat. Stalks of flax, even with the seed pods attached, were found, as well as dressed (?) or heckled (?) flax (*lin préparé*), skeins of linen yarn (?) both single and doubled (*des écheveaux de lin à*

simple et à double fil), twine and cord of various sizes, pieces of fishing nets and of linen cloth, which could not have been produced by plaiting, but must have been woven in the loom, although it may have been simple enough in its construction. Among these stuffs were found fringes (?), bindings (?), and specimens of intricate [diaper (?)], weaving (?) (des franges, des liserés et du tissage assez compliqué). By the side of the capsules of flax seed from Robenhausen are placed specimens from the indigenous flax-plant of Queensland, Australia, which appear to be smaller in size. Allowing the species to be the same, and the difference in climate not to be the cause, may not this have arisen from the successful cultivation of the plant by the lake-dwellers, just as they increased the size of the apple? (See Nos. 32 and 34.) Seed capsules of the cultivated flax of Ireland are placed in the case to show the result attained in the present day by cultivation.

50. Indigenous flax seed, Queensland, Australia, shown by M. H. Marsh, Esq., M.P., at the International Exhibition, 1862, and *presented by him*.
51. Cultivated flax seed, Ireland, *presented by Mr. E. T. Stevens*.

CASE T.

All deposited by Mr. E. T. Stevens, except stated to the contrary.

The objects in this case are rather unmeaningly called *Celts*, not after the people of that name, but from the Latin word *celtis*, a chisel.

These stone celts or hatchets are divided into three classes—

1. Rectangular celts, with sides rough and thick. These are peculiarly a Scandinavian type (plate 7, fig. 1).

2. Cylindrical celts, with sides rounded, one end generally terminating in a cone, and the other in a keen edge (plate 7, fig. 2).

3. Celts more or less triangular in outline, with flat sides and edges sharp throughout the circumference (plate 7, fig. 3, 4).

All the specimens exhibited belong to the second group, except No. 32.

1. Stone hatchet (Sussex), chipped into form only.
2. A rolled stone (Galway), *unwrought*, but exhibited as a form likely to be selected as giving little trouble to work, the end merely requiring to be rubbed to a cutting edge.
- 3 and 4. Stone hatchets (Galway), made in the manner described, from such pebbles as No. 2.
5. Stone hatchet (Ireland).
6. Stone hatchet, dredged from the Thames at Battersea, August 9th, 1861.
7. Stone hatchet (probably a dredged specimen, locality unknown).

8. Portion of stone hatchet (Point of Ayr, Scotland).
 9. Stone hatchet (St. Vaast, Calvados). This specimen shows a number of planes, consequent upon the attempt to give it a rounding form by rubbing it upon a flat surface (see also plate 7, fig. 5, which is from a specimen in the Museum of the Royal Irish Academy). *Deposited by the Rev. J. P. Greenly, Laverstock.*
 - 10 to 12. Stone hatchets (Ireland).
 - 13 and 14. Stone hatchets (said to be from the gold drift of Macquarie River, Australia, but probably only Irish specimens).
 15. Stone hatchet (Keswick).
 - 16 to 23. Stone hatchets (Ireland).
 24. Flint hatchet, chipped into form only, found by Mr. James Brown, of Salisbury, at Laverstock, August 21, 1863, *deposited by Mr. James Brown.*
 - 25 and 26. Flint hatchets (Paris).
 27. Flint hatchet (Whiteparish-hill, near Salisbury). The cutting edge of this specimen appears to have been splintered away in use, for the chips are as much oxydized as the other portions of the hatchet. It may, in consequence, have been thrown away by its original owner as useless.
 28. Flint hatchet (Paris).
 29. Portion of a flint hatchet, found by Mr. James Brown, of Salisbury, on the turnpike road near Coombe Bissett, July, 1863. *Deposited by Mr. Jas. Brown.*
 30. Stone hatchet of peculiar form.
 31. Stone hatchet, plate 11, fig. 2, shows the method of attaching this form of hatchet to its handle.
 32. Stone implement (Keswick), possibly used for scraping skins.
- It will have been observed, that whereas *all* the flint implements found in the drift—all the most ancient flint implements—are *chipped* into form only, the majority of the celts in the present case are rubbed until all chipping marks are removed. Not only does this difference exist. The implements in this case belong to a totally different type from those of the drift. Compare Nos. 1 and 24 in this case, or plate 8, fig. 1, with the specimens in Case P, or figures in plate 1 and 2. Probably, even among Celtic hatchets, those only chipped into form, as plate 8, fig. 1, are the earliest. Plate 8, fig. 2, exhibits a transition stage; it represents a flint celt found in a tumulus at Upton Lovel, Wilts, only partially rubbed down to a smooth surface—the more prominent angles only are removed, in which respect it differs much from No. 27 in this case.
33. Flake of Lydian stone (Ireland). Lydian stone is an impure flint, found in the central portions of the carboniferous limestones of Ireland.

34. Flint knife, merely flaked, not chipped (Ireland.)

35. Flint spear point, rudely chipped.

Flint arrow-heads are divided into five classes—

1. Triangular arrow-heads (plate 9, fig. 1 and 2). Fig. 2 is curved at the sides for holding the string or sinew by which it was to be attached to the shaft; a similar provision is made in No. 63 in this case.

2. The same form as Class 1, but much hollowed out at the base (plate 9, figs. 3, 4, and 5). This class is scarcely more than a variety of Class 1.

3. Stemmed arrow-heads (plate 9, fig. 6 and 7). Fig. 7 is serrated upon the sides and edges—a character of finish rare in British weapons, although common enough in collections of Scandinavian antiquities. No. 66 in this case has this jagged or saw-like edge.

4. Stemmed arrow-heads, with the wings or barbs much prolonged (plate 9, fig. 8, 9, and 10).

5. Leaf-shaped arrow-heads (plate 9, fig. 11, 12, 13).

36 to 40. Flint arrow points, triangular type (Ireland.)

41 to 51. Flint arrow-points, stemmed type (Ireland.)

52. Flint spear-point, leaf-shaped type (Ireland.)

53 to 61. Flint arrow-points, leaf-shaped type (Ireland.)

62. Flint arrow-point, leaf-shaped type (Point of Ayr, Scotland).

63. Flint arrow-point, with notches for binding it more securely to shaft.

64. Flint skin scraper; in this flake, unlike No. 34, the cutting edges have been carefully chipped away.

65. Flint spear-point, leaf-shaped type, said to have been found at Hoxne, Suffolk (but evidently not from the drift). This is the only specimen exhibited which has been rubbed—all the other spear and arrow-points are chipped only.

66. Flint spear-head, stemmed type.

CASE U.

The photograph in this case is the likeness of the well-known forger of flint and stone implements, Thomas Simpson, who was born at Whitby, in Yorkshire, in 1812, and who has earned by his peculiar expertness the title of "Flint Jack." "Flint Jack" visited Salisbury, Winchester, Dorchester, and some other places in this neighbourhood in the course of the year 1863, but his success was not great. The arrow heads he sold in Salisbury were stated by him (falsely of course) to have been found at Stonehenge, a place which by the bye he walked some distance out of his road to visit.

Eventually "Flint Jack" made a number of specimens for Mr. E. T. Stevens, although he failed in producing many types, sketches of which were given him. He was also unable to make a

good forgery of a flint core (the nucleus from which a series of flakes has been struck off, plate 4, fig. 1), although he attempted to do so several times.

The position in which "Flint Jack" is represented, as sitting, is that in which he regularly works, substituting a bank in some secluded spot for the stool given in the photograph. His mode of work is simple in the extreme, and his tools are of the most primitive description. His success arises entirely from the skill acquired by long practice, although there is no doubt that he possesses natural abilities, which, properly directed, would have made him not merely a useful member of society, but a most valuable assistant to the Geologist or the Archæologist.

The specimens exhibited were made with the hammer which he is represented as holding in his hand. There is, however, no peculiarity in the form of it, and, indeed, it is an old one which Dr. H. P. Blackmore gave him.

After *flaking* off suitable pieces with his hammer, "Flint Jack" works away the edges of the flakes by *chipping* them first on the one side, and then on the reverse, the tool used being merely an old iron staple, doubtless stolen from some gate. Should he wish to give a notched outline to his arrow points (at best but a miserable imitation of that exquisite serrated edge seen to perfection in Scandinavian specimens), he presses the stump of an old bradawl skilfully against the edge of the arrow point, which cuts out the notches as seen in Nos. ()

"Flint Jack," like the pre-historic tool makers, *can* form these arrow points and weapons, simply by using another flint of convenient shape, but, of course, he would merely do so to show the *possibility* of accomplishing the result with such a tool. Mr. Evans, F.S.A., F.G.S., so well known in connection with the drift flint implements, has practically demonstrated the possibility of forming these implements with tools of stone only; and a gentleman in this city (Mr. Shorto), whose collection of flint sponges has attracted so much attention, was able to fracture flints with extreme precision, using another flint only for the purpose. Had he been so minded, he could have made as good arrow-points as "Flint Jack," for whilst he possessed great scientific knowledge, he also had a most thorough practical acquaintance with the weight and the direction of the blow necessary to attain any particular result.

"Flint Jack" is a most disreputable character; he is a most inveterate drunkard; and so long as he has money will remain in a state of intoxication frequently even for several consecutive days. His health appears to be rapidly giving way, in consequence of this habitual intemperance; he is, of course, frequently in a state of destitution and positive want, and, indeed, says himself that he rarely makes any of his best forgeries unless he is absolutely starving. "Flint Jack" can assume an air of almost idiotic simplicity, and it is at such times, or when he professes to treat

you with extreme sincerity, that he is nearly sure to overreach you. His word is utterly unworthy of credit, although he may possibly now and then speak the truth by accident. His forgeries do not consist of flint and stone implements only, for, in his own words, he is "*good at mediæval seals or British urns.*" As may be supposed, "Flint Jack" comes at times within reach of the arm of the law, and so lately as in August, 1863, he was committed to Beverley House of Correction for stealing jet belonging to Mr. Major, of Church Green, Bridlington.

"Flint Jack" possesses no secret for imparting an aged appearance to his forgeries. He scoffs at boiling them in mud; he thinks that baking them in a slow oven is the most efficacious mode, but his ordinary clumsy method is to smear them with dirt, and in the case of porous stone (which is incorrect to work at all), he uses soot, which he rubs in with a cabbage or any other leaf.

Some of the forgeries in this Case are just as they were finished, others are coloured, but *all* such are badly done, and could not deceive the experienced eye. In fact, forgeries in *flint* are easily detected; but it is far more difficult to pronounce upon those made in other varieties of stone.

It is hoped that an inspection of the contents of this Case may put collectors upon their guard in purchasing specimens, whilst it must be encouraging to them to find that even the *best* forgeries of the *best* forger in England (for such "Flint Jack" undoubtedly is) are after all so easily detected, and are in themselves so inferior in point of finish to genuine specimens.

All deposited by Mr. E. T. Stevens.

Forgeries of flint and stone implements, the greater part made by "Flint Jack," in Salisbury, in 1863; all such are indicated by the letters F. J.

- 1 to 8. Stone hatchets, F. J.
9. Stone hatchet.
- 10 and 11. Perforated stone hatchets, F. J.
12. Ditto.
13. Stone hammer, said to have been found in an old lead-mine near Ambleside.
- 14 to 20. Flint hatchets, drift type, F. J.
21. Ditto, Celtic type, F. J. This forgery was made some months before No. 24, in Case T, was found; it is instructive to compare the two.
- 22 to 24. Flint flakes.
- 25 to 27. Ditto, F. J.
- 28 to 45. Flint arrow-points, F. J.
- 46 to 56. Ditto.
- 57 to 76. Ditto, F. J.
- 77 to 83. Ditto.

84. Flint arrow-points.
 85 and 86. Ditto, F. J.
 87. Flint arrow-point, with notches for thong, attempted to be made by "Flint Jack," as a fac-simile of a specimen in the collection of the Royal Irish Academy, Dublin (see plate 9, fig. 2).
 88. Flint flame-shaped arrow-point—in like manner the abortive attempt of "Flint Jack" to copy an obsidian arrow-point (Mexican) in the collection of Mr. Christy, London (see sketch of the original in Case).
 89. Flint sling-stone, F. J.
 90 and 91. Flint implements, F. J. (see fig. 37 on diagram).
 92. Flint saw, F. J.
 93. Flint file, F. J.
 94. Flint drill, F. J.
 95 and 96. Flint tools, F. J.
 97. Flint skin-scraper, F. J.
 98 to 101. Gun flints, *English form*.
 102 to 106. Ditto, form called *French cut*. 106 is made of agate and not of flint. 98 to 106 are shown as examples of the process of *flaking*, whilst the two following (Nos. 107 and 108), are exhibited as specimens of *chipping* practised in modern times.
 107 and 108. Gun flints, Turkey, chipped into form.

Our word *flint* in old German means a *gun*, what we call *flint* being known as *flintstein* or *flintsteen* (gunstone); the term *gun-flint* is, therefore, complete tautology. We might borrow an idea from the French *pierre à fusil*, or the German *feurstein*, and call this substance *flint-stone* (gunstone), even in so doing we should but perpetuate the memory of a nearly obsolete application of the material.

A great number of gunflints were made in this neighbourhood principally for army contracts, and the workmen found that the flint flaked more readily when recently taken from the chalk pit, a fact with which "Flint Jack" was well acquainted.

The process of making gunflints consists of three operations. The first, called *quartering*, is performed with hammer (plate 7, fig. 6), and is the mere separation of the nodule into pieces of suitable size and shape. The second, *flaking*, needs the pointed hammer (plate 7, fig. 7), in order that the blow whilst it is smart may also be concentrated. The shock given to the block in this process separates *flakes* from the mass, which, from the conchoidal (shell-shaped) fracture of flint, taper down to a point. (See plate 4.)

In the operations of *quartering* and *flaking* the flint blocks are held by the workman between his knees; but in the third and last process, *knapping*, the flakes are rested on the neck of the solid *stake* (plate 7, fig. 9), a piece of iron which is let into a block of wood, and upon which the workman squares them by means of the *knapping* hammer. (Plate 7, fig. 8.)

Thus by a few well-directed blows, given on scientific principles, the long and tedious process of *chipping*, as practised to this day in Turkey (see No. 107 and 108) and probably in Egypt, is avoided.

In examining a number of genuine and forged flint arrow-points, it will at once be seen that the forger avails himself of flaking far more than did the ancient tool-maker, with whom time was of no consequence. In genuine specimens there is a well-preserved central ridge, which tapers off at the point and sides with extreme regularity. Upon the formation of that arrow the man's supply of food—possibly even his life—depended. The forger, on the other hand, seeks only to deceive the eye *by form*, and he attains his results with as little labour to himself as possible; now and then the points are blunt, but the great defect lies in the weakness of the stem, and the absence in part or altogether of the central ridge, which even when present is usually due to flaking and not to chipping. Such arrow-points tell their own tale, *they were never intended for use*, for they would snap the first shock they received.

CASE V.

All deposited by Mr. E. T. Stevens, except stated to the contrary.

This case contains a series of modern stone implements, very many of which are in the original mountings. Plate 11 furnishes other examples. Some of these help us to form an idea of the probable manner in which the Celtic and other stone hatchets were attached to their handles, whilst No. 8 in this Case affords an example of a hand hatchet, probably a still more primitive method of using the implement. Very many of the flint implements from the drift were doubtless used in the hand only; at one end the rounded outline of the water-worn gravel flint is often preserved with this view, whilst the other end is chipped down to a point for work (see plate 2, fig. 2). Again at a later period such specimens as Nos. 70 and 71, Case R, could only have been used in the hand. Flint knives must have been very awkward and unpleasant to use in the hand, and so the ancient possessor found them, but he did his best to remove the objection, for there was a knife of gray flint found in the bed of the riven Bann, at Toome Bridge, between the counties of Antrim and Derry, which had its blunt end wrapped round with moss (*Hypnum brevirostre*), intended apparently as a substitute for a handle. This specimen is in the collection of Lord Talbot de Malahide.

Some flint flakes were probably mounted as points to spears and arrows, just as the natives use flakes of obsidian in New Caledonia and elsewhere at present (see diagram, Nos. 32 and 33). Again, others were doubtless mounted in handles of wood or bone; for an example of the latter see plate 5, fig. 5, which is from a rough sketch taken on the spot of a specimen in the collection of M. Boucher de Perthes, of Abbeville. Plate 5, fig. 2, 3, 4, and plate

6, fig. 1, 2, were sketched at the same time ; their accuracy is, however, sufficient for the purpose of illustration ; they are given as being better examples than those figured in M. Boucher de Perthes' work. All were found in the peat of the Somme Valley.

The contents of Case V indisputably prove that men entirely destitute of metallic tools and utterly ignorant of metals did, with the aid of sharpened stones and shells, of pointed bones and teeth, work not only in wood and bone, but in the hardest stone, such as jade, which resists the scratch of a steel knife (Nos. 4, 5, and 11). They did not accomplish this in a clumsy way, but they formed the outline of their implements in a regular manner and with great precision, frequently decorating portions with carved embellishments, and in some instances boring the handles with cylindric perforations (No. 15). It must be remembered also that the unknown builders and sculptors of the deserted city of Copan, in Central America, dressed all the stone for those vast buildings, and carved all those colossal figures, profuse as they are in their details and roughened as they are with hieroglyphics, with tools of stone only.

Plate 10 represents two magnificent examples of Aztec work, both in the collection of H. Christy, Esq. The Aztecs certainly used bronze, but they were entirely ignorant of the value or application of iron, although the ores of iron abound in Mexico, and nearly pure iron occurs in aerolites of great size as at Cholula and at Zacatecas. Fig. 1 is an Aztec stone hatchet, very hard, but worked with great precision and highly polished ; it is given from a hasty sketch made in looking over Mr. Christy's fine private museum, but is tolerably correct in the details. Fig. 2 is an Aztec knife of chalcedony, mounted in a wooden handle incrustated with mosaic of turquoise, malachite, and white and red shell, all cut, polished, and fitted with extreme nicety ; the handle is sculptured in the form of a crouching human figure. The locality is fixed by the blade, being of the semi-transparent opalescent chalcedony, described by Humboldt as occurring in the volcanic districts of Mexico—the concretionary silex of the trachytic lavas. What a strange ethnological type is presented by this rude blade, which is yet mounted in a handle of such elaborate workmanship.

1. Stone adze, mounted in handle of carved wood (South Sea Islands).
2. Stone hatchet, mounted in wooden handle (New Zealand).
3. Stone hatchet, mounted in wooden handle (South Sea Islands), see also fig. 31 on diagram.
4. Jade adze, mounted in wooden handle, elaborately carved (New Zealand). The handle exhibits traces of considerable use ; where the wood has split, it has been secured by rivets, with heads made from the shell of the haliotis (called by the natives *pawa*). Upon the handle is carved a grotesque representation of the human figure, with the tongue thrust out in

an attitude of defiance. This in war was pushed forward, whether carved on club, paddle, meri, or axe, as a mark of insult to the enemy.

5. *Tiki*, or household god, of green jade, which passes as an heirloom amongst families (New Zealand). The meaning of *tiki* is *ancestor*. This is exhibited to show the power possessed by the aborigines of working in this hard material.
6. Serpentine adze (New Zealand).
7. Stone hatchet, made from a species of madrepora (South Sea Islands).
8. Stone hatchet (New Zealand).
9. Hand hatchet, made from the shell of a species of turtle, used by the natives of New Guinea (obtained during the voyage of H.M.S. Rattlesnake, August, 1849).
10. Adze of basaltic stone (New Zealand).
11. Jade adze (New Zealand).
12. Flint-tipped arrow (Canada), from the Portsmouth Philosophical Institution.
13. Two stone arrowpoints (Canada).
14. Stone hammer (Australia) called in various dialects *koiit* or *kadjo*. This implement is made of two pieces of stone, cemented to a short stick by means of the *judibi* or prepared gum of the Barro or tuft-topped *Xanthorrhœa*. It is used in climbing trees, in throwing at, and killing animals, in breaking down grass trees, and for the common purposes of the axe and the hammer. (From the Portsmouth Philosophical Institution).
15. Knife (Australia), made from chippings of "bottle glass," set in the gum of the *Xanthorrhœa*. Before glass was obtainable, chippings of stone were used. This implement is known as *tāap*, *tabba*, or *dappa*. (From the Portsmouth Philosophical Institution).
16. Gum of the grass tree, used by the aborigines in mounting their weapons (*Xanthorrhœa hastilis*) (Queensland, Australia). Presented by the *Queensland Commissioners of the Exhibition, 1862*, per *M. H. Marsh, Esq., M.P.*
17. Meri of basaltic stone (New Zealand). *Meri* and *patiti* are the native names of this formidable weapon, which in Europe has received the much longer title of *patapattoo*. Examples of this weapon occur in wood, bone, basaltic stone, and jade (pounamu, which the natives obtained from Tovy Pounamu, the most southern of the two islands of New Zealand). The handle of the *meri* is perforated for the admittance of a loop, which was passed round the warrior's wrist; when not in use the weapon was thrust through the waist girdle.

There are three distinct types of the *meri*. No. 15 in this Case, and No. 18 on wall, are examples of the most common type. The second, No. 20, on wall, is by far the rarest type of the three. The third type exhibits a considerable change in form; it has a broad single-edged blade, like a bill-hook, and no example of it exists in the collection. The *meri* is no longer used by the Maories, its place being supplied by arms of European manufacture.

18. Sling-stones and bag to hold them, used by the natives of the Friendly Islands.
19. Modern stone pestle for pounding bread fruit, cassava, &c., used by the natives of the Marquesas Islands (from the United Service Museum).
20. Stone pounding implement, said to have been found 17th June, 1842, in the bed of the river near Tremaddock, North Wales, (it is probably a modern specimen from some foreign locality).

Of all forms of the handmill the most primitive type is probably the *grain rubber* (plate 11*, fig. 1), which usually consists of a hollowed stone to hold the parched grain, and a convex stone rubber for bruising it. No. 1 on wall of ante-Museum is an example of the lower hollowed stone of such a grain rubber, it was found between the Wilton and the Devizes Roads, near Mr. Adlam's house, and is *deposited by Dr. H. P. Blackmore*.

The next advance in the form of the hand-mill is the *quern*, which, in its simplest type, consists of two circular discs of stone, the upper rotating upon the lower by means of a wooden handle (sometimes two) inserted into the top stone. The quern was "fed" or supplied with grain through an aperture in the centre of the upper stone, the meal passing out between the margins of the stones. The upper stones were usually concave and the lower convex, so as to prevent their sliding off, and also to give a fall to the meal (see plate 11*, fig. 2).

The *pot quern* (plate 11*, fig. 3), is a more elaborate form of hand-mill; it has a lip or margin on the lower stone, which encircles and overlaps the upper, the meal passing down through a hole in the lower stone. Nos. 2 and 3 on wall of ante-Museum are examples of this type; they were found in digging the foundation of a house at the corner of New-street and High-street, Salisbury, and were *presented by Mr. Maunder*.

As an illustration of the daily use of the *quern* in the early part of the 6th century, we find that, when St. Columba studied under St. Finnian, every night in which it fell to his share to grind the corn with the quern he did it so expeditiously that his companions alleged he had always the assistance of an angel in turning the stone, and envied him accordingly.

Legal means were adopted in Scotland, so early as the 13th century, to compel the people to abandon the use of the hand-mill

and to send their grain to be converted into flour at the large water-mills then introduced. The attempt to suppress the quern failed, and they continued in use in the more remote districts of Scotland until the close of the last century. In Ireland, Dr. Wilde purchased a quern at work in the neighbourhood of Clifden, Connemara, so late as 1853.

21. Spear-point of iron, mounted in the tusk of a walrus.
22. Knife made of hoop-iron, and mounted in rude wooden handle (from the Portsmouth Phil. Inst.).

The implements Nos. 21 and 22, made by the Esquimaux (the wood and iron probably obtained from some wreck) belong to the *stone* age in an ethnological light, in which respect they differ widely from Nos. 23 and 24, both of which display metallurgic skill. Again, the meteoric iron employed by the Esquimaux in tipping their weapons can only be regarded as the use of a *hard stone*, for it is malleable, and no process of smelting or preparing the ore is needed. As a curious application of meteoric iron, having, however, no bearing on the point in question, horse-shoes made of this substance were shown at the International Exhibition, 1862, from Western Point, Victoria.

23. Iron adze, in rude wooden handle (Central Africa) from Mr. Petherick's collection.
24. Iron hatchet (Africa) from Professor Henslow's collection.
- 25 and 26 will be described with the contents of Case W.

CASE W.

It has become a popular idea that an "age of bronze" immediately succeeded that of "stone," but it may be reasonably doubted whether an "age of copper" has not intervened between the two. A "copper age" would almost merge in the stone period, for native copper to the early workman would be but a stone possessing peculiar and valuable properties. Indeed, if unsupported by direct evidence, it is highly improbable that an alloy, the production of which presupposes metallurgic skill, should have been used in the fabrication of weapons and tools before advantage had been taken of one of its component parts, native copper, which is capable of being hammered into many new and convenient shapes, and was found to be a *stone* which could be wrought to an edge without liability to fracture. The discovery once made that a hardness could be imparted to copper tools by alloying soft and ductile copper with still softer tin, it is tolerably certain that existing copper tools would be re-cast and re-appear in the form of the newly-discovered alloy. Hence few would reach our time, still, sufficient examples do exist in Europe to prove that unalloyed copper has been used for the purpose. America, however, furnishes the most decisive evidence of a "copper age." Axes,

chisels, gouges, and the like are found near Lake Superior, all made of virgin copper, without the use of any alloy, and wrought into shape by the hammer only. These ancient tools, like the copper of the district, contain crystals of silver, but perfectly free from alloy with the copper, furnishing evidence that the metal of which they are formed has never been smelted. Native copper (red iron or miskopewabik) is still largely used by the natives around Lake Superior; it is still wrought by them exclusively with the hammer, and without the use of fire. The tribes on the border of the Arctic Sea and the Christinaux of Lake Winnipeg, are people scarcely emerged from their "copper age."

Bronze is an alloy of copper and tin, which possesses the most serviceable qualities for the manufacture of weapons and tools when composed of 90 per cent. of copper to 10 per cent. of tin. So nearly are ancient European specimens supposed to approach to this standard that some archæologists would fain assign a Phœnician or some other common origin for the mixed metal, the discovery of moulds for casting and certain typical peculiarities in form and ornament have rendered the previously-entertained idea of a common origin of the finished weapons and objects themselves wholly untenable. It is, however, more probable that this approximation of 10 parts tin to 90 parts copper in ancient bronze weapons is due to the isolated and independent experience of workmen, and that each man, from the successful result or the reverse of his manufacture, would be led in time to discover for himself the best proportions to use in forming the alloy. In addition to this, in some cases, rough lumps of metal have been found associated with unfinished celts, cinders, and other indications of the objects having formed the stock-in-trade of some ancient worker in bronze. These, upon analysis, have frequently proved to be *pure copper*, which "suggests that the makers of the celts, which are bronze, must have themselves mixed in the tin as required contrary to what is mentioned of the Britons by Cæsar, *Ære utuntur importato*." Moreover, the ideal standard of ancient bronze is not so constant as was imagined; thus the per centage of copper in 27 specimens submitted to analysis was found to vary considerably, the minimum being 79, and the maximum 94, in one case 18.31 parts of tin existed, in another only 5.15, the residue being made up of 83.50 copper, 8.35 lead, and 3.0 iron. In this substitution of lead for some portion of the tin is seen the further experience acquired by the primitive workman, for this admixture communicated a greater degree of toughness to the weapon, and diminished its liability to fracture. In Denmark neither copper nor tin occur as natural products. No weapons or implements of bronze are found there, neither have moulds of any kind for casting been obtained there. Had bronze been an article imported from Phœnicia or elsewhere, it is scarcely probable that Denmark, unlike other countries, should have missed her "bronze age," but have passed at once to her "iron age;" the far more probable reason of this hiatus is that her

aboriginal metallurgists had not the requisite materials furnished them by nature. Indeed the "stone age" extended to a much later period in Denmark, Sweden, and Norway than in the British Isles.

Tin is one of the least widely diffused of metals. It is generally supposed that the ancients drew their entire supply of it from Cornwall, and the name of Cassiterides (Tin Islands) bestowed upon that part of the country implies that tin was the chief export. Thence it was doubtless taken to the great Mediterranean ports, to be mixed with the copper of the Wady Maghara and other Asiatic mines, to form the Egyptian, Phœnician, and Assyrian bronze. But as tin occurs in abundance, and in the purest state, in the peninsula of Malacca, it may be doubted whether the ancients did not obtain tin from thence as well as from Britain.

The analysis of ancient American bronze weapons shows a sparing use of tin which is remarkable ; rather more than $7\frac{1}{2}$ per cent. is the highest recorded in a series of nine independently conducted analyses, and one knife from a grave at Atacama contained so little as two and a fraction per cent. ; on the other hand, some Egyptian spear-heads have been found to contain so much as 22 per cent. of tin. Perhaps the indigenous American had not carried his art far enough to ascertain the best proportions of the combining metals. He was but learning to make the alloy ; it was but the dawn of his "bronze age," and, so far as we can learn, the discovery and the development of the art of forming the alloy was self-acquired by the aboriginal American. All this supplements our Old World knowledge, it shows what man, thrown upon his own resources, may work out for himself, and may help us to understand that it is not necessary to look to Phœnicia or to any other country for the monopoly of the secret of making bronze in ancient times.

In a general way, it may be held that cremation and bronze occur together. An exception to this will be found in the interesting series from a tumulus at Ablington, *deposited by E. Dyke Poore, Esq.*, in which two bronze dagger blades were found with *unburned* bones ; two human skulls from this tumulus are in the collection.

Bronze is not only harder than copper—it is also more fusible, and it is highly malleable when it contains 85 to 90 per cent. of copper. It has been mentioned that an alloy of 10 parts tin to 90 parts copper is the most useful for the fabrication of weapons and tools. As progress was made in practical metallurgy, this proportion was generally adopted ; but an increased proportion of tin renders the alloy more sonorous, of which fact the ancients were aware. Bronze bells from Nineveh contain more than 14 per cent. of that metal ; even then, however, the Ninevites were but learning the secret, for Chinese gongs contain 18 per cent., modern bell metal from 22 to 25 per cent., whilst the old bell (*cloche d'argent*) at Rouen, contains no less than 26 per cent. of tin. The alloy

used for ancient mirrors agrees very closely with modern speculum metal, both containing about 32 per cent. of tin.

The majority of the bronze objects in this case consist of those wedge and chisel shaped implements known as *celts*, not so called after the people of that name, but from the old Latin word *celtes*, a chisel. Bronze celts, as may be seen at a glance, vary considerably in form: it has been advanced that this variation is an evidence of the progressive knowledge acquired by experience as to the most secure and lasting mode of hafting the implement, but this probably is not the only cause. These implements were applied to such varied uses that the actual form of the implement and the mode of mounting it probably differed according to the nature of the work required to be done.

Some celts are like axeheads, these—and particularly so when large and heavy—would be most effective mounted at a right angle to the handle, and would be used like a hatchet; the chisel-shaped celts, on the other hand, were probably often mounted on a straight stick, and would in use be thrust forward from the workman, as in the case of a spud or a pitchfork.

The bronze celt is believed by some to be the ancient *dolabra*, which was the tool used by the military train (*calones*) of the Roman army. We may, perhaps, hesitate before according our belief to what has been stated about the use of the celt in levelling earth-works and filling up ditches. Their extremely small size renders such an application of them highly improbable; conceive the attempt to level Old Sarum and to fill up the trenches there, with such tools; but abundance of evidence proves that they were used for effecting breaches in the walls of besieged cities. Thus, when Alexander the Great rashly leaped from the top of the wall into a city, his followers broke through the wall with their celts (*dolabræ*), and Hannibal, when besieging Saguntum, sent 500 men to destroy the wall with celts. Pictorial evidence is not wanting on this point, for in the bas-reliefs of Nimroud the Assyrian soldiers are represented breaking through the walls of hostile cities, with celts fixed at the end of *straight* sticks, and a slab now in the British Museum, exhibits two Assyrian soldiers thus employed.

An account exists in the *Mémoires de la Société des Antiquaires de l'Ouest*, Poitiers, of a number of celts having been discovered firmly wedged in an ancient wall, as if they had become fixed, and were therefore abandoned.

The celt (*dolabra*) seems to have been but seldom used as an offensive weapon; however, when the Ædui revolted in Gaul, and added to their forces the trained gladiators, clad in iron-plate armour, against which javelins and swords were found to be useless, the Romans attacked them as if they were breaking through a wall with their hatchets and celts, with complete success.

The celt found a place in agricultural as well as military opera-

tions; a small sharp variety was used by the Romans for cutting out the dead wood from the trunks of their vines, and another of the same form was employed to stir the soil around the roots. The Icelanders still use an implement closely resembling the celt (palstab) in the cultivation of their fields and gardens, and for breaking the ice, as other instances of persistence in form of celts and palstabs of iron of comparatively modern date may be seen in the Copenhagen Museum, whilst in the central parts of Sweden the short iron hoe or pick, used for grubbing up roots of trees, is not much larger than and greatly resembles some varieties of the ancient bronze celts.

Some antiquarians claim bronze celts as British implements, others as decidedly assert that they are to be attributed to the Roman period. Perhaps the correct view is that they were not exclusively used by any one people. Typical peculiarities exist in many of these celts, and antiquarians can name the country in which these types occur with tolerable accuracy. If bronze celts were used exclusively by the Romans this difference in local type would not exist. Added to this bronze celts are rarely found in Italy, which seems strange if they were characteristic Roman tools.

The wedge-shaped celts, such as Nos. 1 to 5, were fastened, for the most part, doubtless, at right angles to their handles—the modern savage mounts his hatchet, adze, or tomahawk in a similar way. Plate 6, fig. 1 and 2, represent ancient stone hatchets thus mounted in handles, made from antlers of the red deer. Plate 14, fig. 4, is the representation of a handled celt of this type carved on one of the roofing stones of a very ancient sepulchral monument at Lokmaria-ker, in Brittany. This implement is not only mounted at a right angle to the handle, but the handle is provided with a guard, which tends to show that it was used as an offensive weapon. Plate 14, fig. 1 to 5, are further examples. Still bronze celts of this type *have been* found mounted in a *straight* handle; one was discovered in a tumulus at Everley, Wilts. The celt was of small size, and the handle was of stag's horn. It is represented Plate 14, fig. 6.

Plate 13, fig. 1, is the representation of a Spanish celt now in the British Museum, which when found was firmly attached by means of thongs passing through the metal loops to a *straight* handle of wood.

Again, it has been contended that the Assyrian sculptures exhibit the chisel-shaped type of celt mounted *as a chisel*, in a straight line with its handle, and, further, that the use of it by the Romans and others *as a chisel* necessitates a straight handle; yet Plate 14, fig. 5, exhibits an ancient bronze chisel-shaped celt in its original handle, which was found in the bed of the River Boyne, near Edenderry, and which is now in the Museum of the Royal Irish Academy, and this is *not* in a straight line with the handle but is mounted like an adze. Without doubt no rule was observed, but according to the nature of the work to be done so would the implement have been mounted.

Certain celts possess a small loop at the side, sometimes even two loops, placed on opposite sides of the implement. Through these, it has been supposed, that a thong was passed, the better to secure the celt to its handle. Drawings of the supposed method adopted are given in this case. The opinion, however, is gaining ground that these loops were employed for suspending the celt from the girdle or in the dwelling when not in use.

A socketed bronze celt was found at Tadcaster, in Yorkshire, plate 13, fig. 7, with a bronze ring passing through its loop. This ring was formed of wire, the ends of which were not soldered or fastened in any way. Perhaps it was intended to serve the purpose of a *split ring*, upon which more than the one celt found upon it might be strung, and from which all or any could be removed at pleasure. The "military train" (*calones*) of the Roman army when on the march often carried the celts (*dolabræ*) without encumbering themselves with the handles; these were cut when required. Such a ring as that attached to the Tadcaster celt would have been more useful than a thong for suspending the celts at such a time.

Certain forms of celts, as Nos. 8 to 22, must have required the handle to be cleft so as to enclose the upper part of the implement. These would need to be bound on with thongs or plaited fibre.

The socketed celts, Nos. 23 to 30, could have been secured by the insertion of a small wedge, or even by giving a wedge-like end to the handle itself. In one type, No. 9, and Plate 13, fig. 2, the lateral ridges appear to have been beaten round the cleft wooden handle, which thus would have held it firmly in place. At Notre Dame d'Or, in France, a mould was found for casting this type, and in the mould the cavities for casting these broad lateral ridges were *straight*, whereas the eight celts of this type, found at the same time and place, all had the lateral ridges *bent* as if to enclose the handle.

That celts and other bronze implements and weapons were not imported, but were actually cast in the British Isles, seems to be proved by the discovery, not only of moulds but also of rough metal for casting; thus in May, 1735, more than 100 celts, together with a quantity of cinders and several lumps of metal, were found on Easterly Moor, near York. Similar discoveries have been made elsewhere, as at Danbury and Fifield, in Essex; at Westwick Row, in Hertfordshire, in which case the lump of metal was *pure copper*, now with the celts in the British Museum; and in 1845, at Westow, in Yorkshire. The late Mr. Britton possessed a celt, embedded in its matrix of metal. Such discoveries have not been limited to this country; masses of unalloyed copper and of unalloyed tin, with traces of a foundry, were found at Thonon, on the Lake of Geneva. Numerous other instances could be quoted.

It has been stated that no bronze celts are found in certain countries as Italy and the Channel Islands, but this is an error. Count Caylus obtained seven from Herculaneum, one of which was nearly eight inches in length, with singular projecting horns

at the side ; it is represented in plate 13, fig. 3. Plate 13, fig. 5, was found at Pæstum, and in the Musée de l'Artillerie, at Paris, are five from Naples and one from Corsica. In the National Museum at Naples are two bronze celts, found at Pæstum. They have peculiar perforations at the end, and are both of the wedge shape. (Class 3) plate 13, fig. 5. In the same collection is a bronze hatchet, found at Pompeii, with a perforation to admit the handle, plate 14, fig. 7. This is evidently a *late* idea. Antiquarians have often expressed their astonishment that this most secure mode of hafting the implement should not have suggested itself to the ancient bronze worker. In the "iron period" this mode of mounting the tool-weapon became general. No less than 80 celts were discovered at one time in the parish of La Trinité, Jersey, and some have been found in Alderney, so that these implements are likewise found in the Channel Islands.

The dark green, smooth and polished surface (patina) seen on ancient bronze objects is artificial malachite (carbonate of copper), into which the external coating of the bronze has been converted by age. Once formed it serves to prevent oxidation. Time alone seems capable of producing this patina ; at all events, *forgers* have hitherto been unable to impart it to their spurious productions. (See Nos. 52 and 53.) Some celts are covered with a thick brown crust. This, upon analysis, is found to be chiefly iron, derived from the soil in which the specimen has been embedded. Sometimes this crust is found to overlies the previously-formed green patina.

It is probable, in the dawn of an age of metal, even when the art of casting became known, that the earliest efforts were directed to reproduce in the newly-discovered material the familiar forms of the stone period. The wedge-shaped stone axe would be followed by an exact copy in metal, and so in the Museum at Berlin may be seen a *copper* celt of the precise outline and *thickness* of its stone prototype. This specimen was found in an Etruscan tomb ; it is six inches long and $2\frac{1}{2}$ inches wide in the thickest part. Of course the extreme weight of such an implement would suggest a reduction in the thickness, and this would give us the ordinary wedge-shaped type of celt. It is not a little remarkable that all the 26 *copper* celts in the Museum of the Royal Irish Academy are of this form ; moreover, they are all totally unornamented, and they appear to have been cast in *single stone* moulds. Indeed, on account of the material (unalloyed copper) and the rudeness of the casting, they are considered to be the earliest metallic specimens in the collection.

Bronze celts have been thus classed :—

1. Flat, wedge-shaped celts, Nos. 1 to 5, and plate 12, fig. 1 and 2.
2. Wedge-shaped, with a projection on each lateral edge. This is an Irish type, and is not represented in this collection, plate 12, fig. 3.

3. Wedge-shaped, with low, upright lateral ridges, running at a right angle to the edge of the blade. No. 6, and plate 12, fig. 4 and 5.

4. The same form, with the addition of a transverse ridge—a low elevation between the blade and wedge—running parallel with the edge of the blade, and at right angles to the lateral ridges, No. 7 and plate 12, fig. 6.

5. Lateral ridges much produced, and sometimes overlapping, No. 9 and plate 12, fig. 8. Transverse ridge not a constant feature, but when present the lateral ridges usually unite with it, and form on each side a semi-socket; this type is sometimes furnished with a loop on the upper surface, and occasionally with one on both sides (palstave), Nos. 8 to 22 and plate 12, figs. 7, 8, 9.

6. With two high projecting shoulders between the blade and wedge, the latter usually furnished with overlapping ridges; only one or two examples of this type are supposed to exist, plate 12, fig. 10.

7. Wedge-shaped, with lateral projections and two loops; but one example of this type is known—it is in the collection of the Royal Irish Academy, plate 12, fig. 11.

8. Socketed celts, furnished usually, but not always, with a loop or ear on the upper surface, sometimes with two loops; the bore of the loop almost always at right angles to the axis of the celt, but has been found in one or two rare instances parallel with it, see plate 13, fig. 4. This beautiful specimen was found in the bed of the Thames near Wandsworth; it is in the possession of the Archæological Institute; it is $4\frac{3}{4}$ inches in length. The ordinary types of Class 8 are Nos. 23 to 30 and plate 12, fig. 12, 13, 14.

9. Socketed celts with projecting shoulders between the blade and socket, not represented in this collection, plate 12, fig. 15.

CASE W.

The three following, Nos. 25, 25*a*, and 26, are in Case V.

25. Native copper from the Lizard, Cornwall, *deposited by Mr. Henry Blackmore.*

25*a*. Native copper. *Fowler Collection.*

Copper is supposed to derive its name (cuprum) from Cyprus (κυπρος) where it was first worked on a large scale.

26. Specimen of ancient tin casting; it was found in the donor's glebe. *Presented by the Rev. Stanhope Rashleigh, St. Wenn Vicarage, Bodmin, Cornwall.* The fragments of charcoal scattered through the mass show the nature of the fuel which was employed.

Tin never, or at all events very rarely, occurs in a native state ; in the year 1765 a piece was supposed to be found, but the truth of this has been denied ; pieces taken from roasting-places, where the tin has exuded, have been sold as specimens of native tin. It is a singular circumstance, that personal ornaments of tin have not been discovered. That this metal has been used in the manufacture of objects *without alloy* is certain, for four ancient pateræ of tin have been found in Cornwall. The ancients knew that tin imparted a hardness to copper, but they also knew of its value in the arts. An analysis of some enamels from Nineveh shows that the yellow colour, which is an antimoniate of lead, contains tin, whilst the white is a glaze of oxide of tin, an invention attributed to the Arabs of Northern Africa, in the 8th or 9th century. The ancient name of tin, *κασσιτερος*, has been supposed by some to be of Celtic origin.

- 1 to 5. Bronze celts of Class No. 1. No. 2 found in Cheshire, the others probably Irish specimens, except No. 5, which is believed to have been discovered in this neighbourhood ; it is more highly finished than the other specimens, and deviates slightly from the normal type.
6. Bronze celt of Class No. 3.
7. Bronze celt of Class No. 4, believed to have been found in this neighbourhood—this is of a very elegant form, and exhibits great finish after casting.
- 8 to 18. Bronze celt of Class No. 5 (palstave), No. 8 obtained in Paris ; Nos. 12 to 17 discovered in making the railway near Bognor, Sussex ; No. 16 has never been finished, it is precisely in the state in which it came from the mould, and shows all the casting marks ; No. 14, on the other hand, exhibits signs of having been hammered.
- 19 to 22. Bronze celts with loop, Class No. 5. No. 21 shows hammering marks, and is a fine specimen ; No. 22 was found at Charlton, near Downton, in 1863 ; the loop was filed off by the finder to ascertain whether the implement was made of gold ; it was subsequently sold in Salisbury for old metal.
- 23 to 30. Socketed bronze celts of Class No. 8. No. 23 found near Bath ; No. 24 found near Snowdon, June, 1842. This specimen is broken at the socketed end, possibly from the effect of a blow when in use, for the fractured edges are as much *patinated* as the other portions of the implement. No. 26 was obtained in Italy.
31. Cast of a highly-finished granite celt-mould, in the collection of the Rev. E. Duke, Lake House, found near Nine Mile Water, in the parish of Bulford, almost opposite the tenth milestone from Salisbury to Marlborough, but on the opposite

(north) side of the stream. The date of the find is unknown, but it was prior to 1833. (This information is contributed by Mr. Job Edwards, of Amesbury.) The shape of the mould is that of a four-sided prism, and the cavities engraved on two of its sides show that it was intended to cast socketed celts of two sizes; one of these moulds was for casting celts provided with two loops. A second prism, the duplicate of this, must have existed to complete the mould, and notches are made in this portion to enable the workman to adjust the two halves with precision. A very remarkable mould, made of hone-stone, was found in Anglesea; like Mr. Duke's specimen it is a four-sided prism, but it has cavities on all four sides, three are for casting the heads of spears or darts, all of different types, and one is for casting socketed celts with two loops.

32. Bronze wedge.
33. Rapier-shaped bronze dagger blade, found in 1860 at Fisherton Anger, near Salisbury, in making a drain. It was discovered about four feet below the surface, in the ordinary vegetable mould, but resting upon the top of the drift gravel. There was a depression in the surface of the gravel, forming a shallow basin, and in this basin this specimen was found. No bones, pottery, or ashes were associated with it. This type of weapon is rarely found in England, although frequently discovered in Ireland. A mould for casting them has been found in Devonshire. An example of a handled rapier blade is given, plate 13, fig. 8; it was found in the county of Tipperary, and is figured from an engraving in the catalogue of the museum of the Royal Irish Academy. The length of the weapon is $21\frac{3}{4}$ inches, and it is 3 inches wide across the lunated hilt.
34. Portion of a bronze leaf-shaped sword, found on Cow Down Hill, Upton Scudamore, Wilts, *deposited by Mr. James Brown*. Some writers hold that as bronze swords, associated with sepulchral deposits, are frequently found broken, that perhaps one of the last honours paid to the deceased warrior was to break his well proved weapon and to lay it by his side ere the cist was closed. This opinion rests on very shallow foundation.

Bronze leaf-shaped swords are probably to be regarded as Roman weapons; they were used for thrusting rather than for cutting. There is a sword of this type in the museum of the Louvre, Paris, with its sheath; and another similar sword and sheath in the Musée de l'Artillerie, Paris.

As an instance of persistence in form, the visitor's attention is directed to No. 81 on wall, which is a native made *iron* sword, such as is still in use in the interior of Africa; it has exactly the form of the Roman leaf-shaped sword, and both were apparently formed

on the model of the leaf of the aloe or agave. Plate 13, fig. 13, represents a bronze leaf-shaped sword found in Ireland.

35 and 36. Bronze dagger-blades, found in a tumulus at Ablington, in the parish of Figheldean, Wilts, with objects numbered 37 to 42 in this case, and with the two human skulls, Nos. 2 and 3 in Case D D, *all deposited by E. Dyke Poore, Esq., Syren-cot, Wilts.*

Bronze dagger-blades of this type are Celtic, and were mounted in handles of wood or bone, to which they were fastened by rivets. Plate 13, fig. 9 represents a bronze dagger of this Celtic type, with its handle, found in a tumulus at Brigmilston, Wilts; when discovered it was secured in a sheath of wood lined with cloth, of which the web could still be distinguished. In 1860 a tumulus was opened by the Monmouthshire and Caerleon Antiquarian Association at Penhow; a bronze blade of this type was found in it, with its wooden sheath. In this tumulus rough chippings of flint were discovered, somewhat similar to those exhibited in Case S, and also under very similar circumstances; there being no chalk flints in the neighbourhood, the fragments must have been brought a considerable distance, and were probably placed in the tumulus for the use of the deceased in a future state. Plate 13, fig. 10 represents a dagger of the Celtic type, with a handle of ivory; it was found in a tumulus near Blandford, Dorset. Plate 13, fig. 12 is another example from a specimen in the Museum of the Royal Irish Academy. Plate 13, fig. 11 is in the same collection, and in form approaches very closely to fig. 10; it is, however, formed entirely out of the leg-bone of one of the large ruminants; it is $10\frac{1}{16}$ inches long, the handle is only $2\frac{1}{2}$ inches—proving that the hands of the race who used it must have been very small. It is worthy of remark that an ancient Egyptian bronze dagger, fastened to its ivory handle with rivets, and perfectly of this Celtic type, is in the British Museum.

37 and 38. Antlers of roe-deer. No. 38 has been reduced in length, and shows human work. Being right and left horns, they were probably from the same animal, and as No. 37 is not a shed antler, it is probable that the animal had been killed in hunting.

39. Molar of pig.

40 to 42. Tusks of boar. These three tusks are all from different animals, and are all from the left side.

43. Bronze spear-head (imperfect) Ireland.

44. Ditto, Paris.

45. Ditto, Ireland.

46. Ditto, Paris.

Antiquities of bronze are in great estimation in China, and a voluminous work has been produced in that country on the subject, entitled “Po-ku-tu, or Plates on learned Antiquities.” Ancient

bronze spear-heads found in China differ in many respects from those obtained in Europe; frequently the opening of the socket is mitred; the edge of the blade is formed occasionally with a peculiar flowing curve, and in some of these Asiatic weapons, instead of a loop on *each* side for attachment to the shaft, there is a single loop on one face of the weapon.

47 and 48. Bronze objects found at Bower Chalk, and *presented by Mr. Sidford.*

49. Five bronze bird-bolts, Syracuse.

50 and 51. Bronze dentated heads of maul or mace. These specimens have been converted into pounce-boxes by some former possessor. These mace-heads are not very common objects. A somewhat similar specimen to those exhibited was found in a well at Great Bedwyn, Wilts, not long since.

52. Bronze celt, exhibited as an example of a *modern forgery.*

53. Bronze spear-head, exhibited as an example of a *modern forgery.*

CASE N N.

The series of bronze objects is continued in the Ante-Museum, Case N N., all of which are *deposited by Mr. E. T. Stevens* except stated to the contrary. A few specimens belonging to the Romano-British and Anglo-Saxon periods are included.

1 to 6. Egyptian bronze sepulchral figures, *deposited by Mr. Chivers.*

7 and 8. Egyptian bronze sepulchral figures.

Many of these figures are represented holding in the right hand a pickaxe, in the left a hoe and a cord, to which is attached a basket to hold seed corn. These figures were probably like the Chinese "yung," or dummies, the substitute for human victims formerly offered at the grave, and were intended like them to aid the deceased in his labours of preparing and irrigating the ground and raising the crop in the mystical fields of the Aahenru or Aahlu.

9. Fac-simile copies of unique bone objects found in 1806, and now in the collection of the Rev. E. Duke, Lake House. They were obtained by the late Rev. E. Duke from a tumulus (No. 20) at Lake, near Salisbury. They were intermixed with ashes and burned bones; a bronze dagger-blade was found in the same tumulus, as well as rude "Celtic" pottery. These objects were possibly used for casting lots or for playing some game.

10. Bronze ring, found on the point of a harrow at Shrewton, Wilts.

11. Bronze ring. *Brodie Coll.*

12. Burnt bones (human) found in a Celtic urn. *Fowler Coll.*

13 to 16. Bronze armillæ. 13 found in the bed of the Thames.

Armillæ are found made of gold or silver as well as bronze. Fibulæ or brooches of all three metals likewise occur.

17. Bronze fibula, originally enamelled, found at Alderbury, Wilts, in 1862.

18. Bronze fibula, found at Winterborne, Wilts, in 1863.

19 to 22. Bronze fibulæ, found near Cambridge.

23. Bronze needle, ditto.

24. Bronze fibula, enamelled, found near the Salisbury Cemetery in 1863, *deposited by Mr. Clench.*

25. Bronze fibula. *Brodie Coll.*

The objects numbered 26 to 43 were all found in 1863 in a large earthwork at Wylve, Wilts, and are *deposited by Dr. H. P. Blackmore.* A large quantity of fragmentary pottery (Romano-British), found at the same time and place, is exhibited in the collection of pottery.

26 to 30. Bronze buckle and other objects.

31 to 33. Bronze fibulæ. Attention is called to 32, which is of unusual form, and has been enamelled.

34 to 41. Roman coins. Same find.

42 and 43. Whetstones.

44. Fragment of bronze casting. (Qy. Roman.)

45. Handle of knife, from Panticapœum, *deposited by Dr. H. P. Blackmore.*

46. Two specimens of the so-called "Kimmeridge Coal Money," *deposited by Miss Hedger.*

These objects were, doubtless, never used as money. They are found in two little valleys in the Isle of Purbeck, only divided from each other by a ridge of hill, the one opening seaward into Kimmeridge Bay, and the other into Worthbarrow Bay. The "coal money" is found at depths but rarely exceeding 18 inches below the surface of the soil. The material employed is a bituminous shale, which burns freely, and of which an extensive bed exists on the coast. There is good reason for believing that these objects are the refuse pieces thrown aside after rings and other ornaments had been turned on the lathe. Associated with the "coal money," fragments of the shale—the raw material—showing tool marks and figures drawn with compasses are frequently found. It is supposed, from the character of the fragmentary pottery scattered through the soil, that the manufacture of amulets, beads, and the like must have been carried on by the Romanized Britons in these remote vales of Dorsetshire. This belief is strengthened by the discovery of highly polished armillæ of Kimmeridge shale in the burial-place of the Romano-British settlement of Durnovaria (Dorchester), whilst the pottery found there agrees in character with the fragments from Kimmeridge. Two complete vessels of Kimmeridge

shale have been discovered, together with other Roman remains, at Great Chesterford, in Essex. With the exception of armlets, objects formed of this material are of very rare occurrence.

47. Armilla of jet.

48. Flint flake, mounted in bronze handle (Qy. if genuine) Italy.

49. Card of beads. (Qy. Anglo-Saxon.)

50. Bead of glass. *Brodie Coll.*

The objects 51 to 56 were found in the Anglo-Saxon burial ground at Harnham, near Salisbury, opened in 1853, under the direction of A. Y. Akerman, Esq., F.S.A. The date of these interments may be assigned to some period between the close of the 5th and the first half of the 7th century. 51 to 56 *deposited by Miss Fawcett*. The beads forming part of the same find are included in the pottery series.

51. Fragments of a child's skull.

52 to 56. Other human remains; 53 being the lower jaw of a female about 30 years of age.

The collection of objects illustrating the early use of iron in the Museum is very small. It is hoped that those in this neighbourhood who possess specimens of Anglo-Saxon weapons and the like will lend them for exhibition in order that the series may be more upon a par with the other portions of this department.

Remarks upon iron as a material for weapons will be introduced at the end of this part of the catalogue.

57 to 59. Iron spear-heads (Anglo-Saxon period); 57 found at Bishopston, Wilts, and *presented by Mr. Swayne, Bishopstone*, and 59 found between Woodford and Lake, Wilts, *deposited by Dr. H. P. Blackmore*.

The iron spear-head of the Anglo-Saxon period was mounted on a wooden shaft, seven or even eight feet long, terminating in a ferrule or with a knob or spike; the decomposed wood which formed the shaft may frequently be traced in the grave. This was the case with the shaft which belonged to No. 59. These spear-heads are, as compared with swords, very common; they are of a variety of shapes and sizes, but there is one characteristic feature about them, they all have a longitudinal slit in the socket which received the shaft. It is instructive to compare these spear-heads with the modern African spears exhibited on the wall in the Circular Room, some of which not only resemble them in form, but also in possessing the slit in the socket.

60. Iron umbo or boss of Anglo-Saxon shield, found near Salisbury, and *presented by Miss Salisbury*.

Of Anglo-Saxon shields little more than the iron bosses, studs and portions of the iron fastenings of the handle have reached our time. These shields were made of wood; they were circular, with a diameter of about 18 inches, and were sometimes covered

with leather. This circular form is common to the Saxon and Frankish shields. When Beowulf encountered the fire-dragon, however, instead of the ordinary linden-wood shield, we are told—

“then commanded to be made for him
the refuge of warriors,
all of iron.

* * * *

he knew well enough
that him forest-wood
might not help,
linden-wood opposed to fire.”

61. Bronze stud, probably from an Anglo-Saxon shield, found at Old Sarum, in 1862.

62. Iron blade of Anglo-Saxon sword, found at Toyd, Wilts.

The presence of the long iron sword is an unfailing evidence of the people to whom the grave belonged. These long Anglo-Saxon swords were intended for cutting rather than for thrusting; they are usually doubled-edged, and the blades are plain and nearly uniform in shape; sometimes there is but one edge. The handle was usually of wood, but sword-hilts belonging to this period of bronze or silver have also been found; these were sometimes gilt, and at times bear runic inscriptions.

“So was on the surface
of the bright gold
in runic letters
rightly marked
set and said
for whom that sword,
the choicest of irons,
was first made,
with twisted hilt and serpentine.”—*Beowulf*.

The sheath was usually of wood, tipped with metal, and sometimes covered or made entirely of leather.

Although the iron series is so poor, it has been considered desirable to give an account of the early use of that metal, as otherwise the sketch of the three great periods—the “stone age,” the “bronze age,” and the “iron age”—would be incomplete.

There is little in the appearance of the ores of iron to attract the attention of the early metallurgist. Unlike copper, it occurs rarely (if at all) in nature in the metallic state. It is, indeed, stated to have been found *in situ* near Canaan, in the United States, and a kind of native iron, which is accompanied with platinum, is obtained in the Uralian Mountains. The native iron, which occurs in the centres of masses of brown hematite, is supposed to be caused by electro-chemical action, whilst certain small button ingots of native iron are held to have been produced by the spontaneous ignition of seams of coal in the neighbourhood of ferruginous deposits. Meteoric iron again always contains nickel, which does not occur in any of the ores of iron. Yet, notwithstanding the general non-metallic appearance of the ores of iron, the art of smelting them was practised at a very early period. The inha-

bitants of Britain were probably acquainted with a mode of smelting iron prior to the Roman invasion. Strabo mentions iron as one of the exports from Britain. Æschylus (born 460 B.C.) speaks of the *Chalybes*, a people then living on the southern shore of the Black Sea, as workers in iron ; of Scythia as "the mother of iron ;" of the sword as "sharp iron, the bitter appeaser of strife ;" "the Pontic stranger, born in fire ;" and also as "the Chalybian stranger come out of Scythia." Indeed, the *Chalybes* were so celebrated for their skill in working iron that the name of the producers was applied to the product *Chalybs*, in Greek meaning steel, and the word passed unchanged into the Latin language.

The iron of the ancients, from their practice of smelting the ore with charcoal, must have approached somewhat to the nature of steel (carburet of steel). It appears that they were well acquainted with the method of tempering it, for the *Odyssey* contains a simile drawn from the process :—"As some smith or brazier plunges into cold water a loudly-hissing great hatchet or adze, *tempering* it, for hence is the *strength* of iron."

The Romans had an early acquaintance with iron, and Diodorus Siculus mentions Æthalia (Elba) as being celebrated for the richness of its iron ores ; whilst the elder Pliny, after enumerating the various purposes to which iron was applied in his time, says—"Yea, in one word, we use it to all other necessary uses of this life." Notwithstanding which the excavations at Pompeii and Herculaneum show that *bronze* was in general use in the middle of the first century when those cities were overwhelmed. In the treaty between Porsena and the Roman people (about 400 B.C.), it was expressly stipulated that the Romans should not use iron except for *implements of agriculture*, and it was not until 300 years later that they began to make their *weapons* of iron. The objects obtained from Pompeii and Herculaneum show the sparing use of iron for *weapons* at a later date. A few examples of iron spears and knives occur, but the carpenters' tools and the agricultural implements are of iron almost exclusively. The poll-axes and other sacrificing implements, as well as the surgical instruments, many of which have cutting edges, are of bronze. (See plate 13, fig. 6, which represents a pair of bronze scissors found at Pompeii.)

Certain European tribes appear to have used weapons of iron before the Romans. Thus, when the Consul Æmilius defeated the Gauls, the Romans fought with bronze swords ; but the long swords of the Gauls are believed to have been made of iron, for they are described as badly tempered, and as having bent in use.

The *Norici*, a people who occupied a considerable region to the south of the Danube, were particularly skilful in the manufacture of iron, and in the time of Augustus Noric swords were as famous at Rome as the Damascus blades or Andrea Ferraras in more recent times. One of these Noric swords is represented on a sepulchral monument at Mayence, and it is the very counter-part of the Anglo-Saxon weapon. It is worn by a Roman auxiliary horse-

man, who belonged to an *ala*, or wing of the Norici ; it hangs by his side, fastened high upon his breast ; he is in the act of spearing a prostrate foe. The monument may be assigned to the middle of the third century. The long iron sword or *spatha* appears to have been in general use among the Roman auxiliaries, and even among the Romans themselves, towards the decline of the empire. The Germanic tribes used these long swords, but they were rare, the weapons in ordinary use being spears with a narrow, short, and sharp head called *frumeas*.

During the Roman occupation of Britain, extensive ironworks were carried on by them in this island, particularly in the Forest of Dean, or Arden, as it was then called, and in parts of Sussex and Kent. At all of these localities iron-scoriæ of the Roman period abound ; Roman coins and fragments of Roman pottery are found intermingled throughout the entire mass. Along the banks of the Wye the surface soil for miles rests upon one continuous bed of iron cinders. For nearly 200 years the blast furnaces of the Dean Forest have used about one-half of the furnace burden of these slags or cinders, which are found advantageous to mix with the calcareous ores of the district. In Sussex, a bed of these cinders has been found no less than 20 feet deep.

In some districts, as in Sussex, the Romans used the clay iron-stone from the beds between the chalk and oolite ; this was readily worked, being found near the surface, and was obtained by merely digging shallow pits. In other parts, as in the Forest of Dean, the ore is of a much richer description, and pits were sunk until the vein was found, which was then followed underground, frequently for some hundred feet. After the arrival of Adrian (A.D. 120), the fabrica, or great military forge, was established so near this city as Bath.

The Romans, and probably the Britons before them, smelted iron much as it is even now done in parts of Asia and Africa. There an ore of iron capable of reduction by charcoal fuel is employed ; from this a semifluid mass of metal is obtained, which is welded into the required shape. The furnace is usually of clay, wattled round to prevent its cracking, and a number of holes are left at the bottom, into which clay tubes are luted to increase the draught. The furnace is generally placed on an elevated situation, where the wind would blow freely, and goatskin bellows are used to aid the operation. In charging these furnaces, a quantity of brushwood is laid at the bottom, upon which alternate layers of charcoal and broken ore are piled, the charcoal being in excess. Even in this simple form of iron smelting a great deal of latent chemistry is involved, but if limited to the means at their command, and the ends proposed to be gained, the fullest acquaintance with chemistry could not improve the practice of iron smelting as followed by the Persians and the Hindoos. The ancient Peruvians seem to have been aware to a degree of the value of the hot blast ; for they smelted their silver in furnaces

such as have been described, but near the air holes they ignited fuel, in order that the blast might be heated before passing into the furnace.

Wood charcoal continued in use for smelting iron until a late period. In the reign of Elizabeth, Camden laments the decay of our forests, in consequence of the extension of the iron trade. Coal was employed for smelting iron in this country about 1619, but it was not until the middle of the eighteenth century that pit coal or coke came into general use for the purpose.

The Anglo-Saxon period appears to have been peculiarly an "iron age." The army of Harold was well supplied with weapons of steel and with defensive armour, whilst even the horses were protected with coverings of steel or iron. The Anglo-Saxon was buried in his full dress, with all his arms and accoutrements. The cist usually contains the iron-head of a spear on the right side, the iron umbo of a shield in the lap, an iron sword on the left side, and an iron knife on the right side of the skeleton, with sometimes an urn or a small earthen bottle at the feet. Tumuli covering such interments probably date from the arrival of the Anglo-Saxons in Britain to the middle of the eighth century, when the Pagan mode of interment was abandoned.

From various circumstances it has been held that iron and objects made of it were of great value in early times.

Achilles proposed a ball of iron as one of the prizes at the games instituted in honour of Patroclus, and we learn from Herodotus that a saucer of iron, curiously inlaid, was presented to the Delphic Oracle. In Denmark, some most interesting objects bearing on this point have been found; they consist of axes with a broad blade of copper, *edged* with iron, and daggers similarly furnished with edges of the harder metal. Such examples are rare, and no corresponding specimens have yet been discovered in Britain.

An apparently parallel case has taken place at a more recent period. The Esquimaux used up such iron as they found upon the site of the Greenland colonies, which perished in a mysterious manner about the commencement of the fifteenth century, to the very last shred. It was a material they could not produce for themselves; iron to them was more valuable than gold. In Mr. Christy's collection is an Esquimaux bone knife, with a mere edge of iron, found on the site of these ancient Greenland colonies. Mr. E. T. Stevens possesses a series of poisoned arrows from Southern Africa; the heads are of bone, and in *one* instance a *minute* tip of iron is added. However, both the Japanese and the Chinese at times display a singular economy in the use of iron, which warns us to be cautious in forming conclusions as to the Danish axes. Shears of brass, *edged* with steel, were in the Japanese collection at the International Exhibition of 1862, and Mr. E. T. Stevens has a Chinese pocket knife thus *edged* with steel; yet we should be wrong in assuming that either of these people value iron so highly as to use it in this sparing manner.

Mediæval Department.

The foundation of the present archæological collection was made during the excavations carried on in Salisbury a few years since, for the purposes of the drainage operations. Unusual opportunities then occurred for recovering some of the stray objects which had for several centuries been accumulating in the soil. Happily, persons were found who carefully preserved all the relics which were then brought to light. That portion collected by Mr. Brodie has been acquired for the Museum, and consists exclusively of mediæval objects; the removal of the city from Old Sarum to its present site in the thirteenth century rendering it improbable that much of an earlier date would be discovered. The collection is made up of a large number of objects of everyday use, some of considerable interest, the greater portion necessarily of an ordinary kind, but all serving to illustrate more or less the habits of our forefathers. The great value of a collection of this sort being, that there is no question of their genuineness, also the certain knowledge of the locality in which they were found.

It is probable that many other specimens, besides the fine collection contributed by Mr. E. T. Stevens, are still in the hands of private persons, and it is hoped that some of these, though not intrinsically valuable, may be added to the Museum, thus giving them a permanent resting-place, and contributing very materially to the value of the collection as a whole.

CASE A A.

The entire contents of the first division of Case A A, and all the specimens in Case L L, are *deposited by Mr. E. T. Stevens*; they consist principally of objects discovered in or near Salisbury.

All the objects in the second and third divisions of Case A A, not otherwise indicated, are part of the Brodie collection, and all obtained during the excavations for the drainage in Salisbury, are so marked upon the cards.

SPURS.

The earliest form of spur, of which, however, there is no specimen in the Museum, is the *prick*, a long pointed shank of metal projecting from the heel; this was generally in use during the thirteenth century. The *rouelle*, or wheel spur, an afterthought or improvement on the prick, was worn occasionally with it as early as the time of the Conquest. In the middle of the fifteenth century spurs of five or even seven inches in the shank, with rowels of six or eight points, were in vogue; this great length of shank was necessary in consequence of the mode of barbing or caparisoning the horse, whose sides could not be reached by a shorter spur. In Edward the Fourth's reign the difficulty was obviated by curving the shank and lengthening the spikes of the

rowel. At a later period they became very rich in their ornamentation. The cavaliers in the seventeenth century wore very costly spurs attached to their jack-boots.

1 to 68. A series of spurs and rowels, of various periods, from the fourteenth to the seventeenth centuries.

17. An ornamental spur, probably of the seventeenth century, *presented by the Town Council of Salisbury*. A somewhat similar but modern spur is in Mr. E. T. Stevens's Case L L, No. 159. This specimen was brought from Mexico, and is probably a traditional form of Spanish spur.

26. A curiously ornamented spur, *deposited by Mrs. Good*.

33 to 44. A series of rowels of various forms and periods.

46. An example with rowel of four points.

64. Rowelled spurs, found at Old Sarum, and *presented by Mr. Marsh, of Stratford*.

Other good examples are found in Mr. E. T. Stevens's Case A A, such as—

261 to 264, with very long shanks.

265. Bronze rowel.

267 and 268. Rowels of unusual length.

69 to 73. Stirrups.

An early form of stirrup is No. 2, Case L L of Mr. E. T. Stevens's collection.

74. Metal object of unknown use.

OLD ENGLISH ARROW-HEADS.

These form, perhaps, the most valuable portion of the numerous objects collected during the drainage excavations, especially to those who have given their attention to military antiquities. From their general use we might well have expected to find upon the old battle fields countless arrows that have darkened heaven in their flight: but the iron piles, in common with the wooden shafts, seem all to have well-nigh perished, so that an Old English arrow-head is now amongst the rarest items of English war-craft that can be produced.

It is well known that the practice of archery is of remote antiquity in Britain, a fact evident from the abundance of flint arrow-blades exhumed with undoubted remains of the "stone period." During the middle ages, before the use of gunpowder, their use was so general that Sir John Fortescue declared, that "the might of this realm of Englande standyth ypon her archers." This was no idle boast, for history records how the trusty bows of English yew, bent by the stalwart arms of England's yeomen, triumphed over the vaunted chivalry of France upon the fields of Crecy, Poitiers, and Agincourt. It is, perhaps, more difficult to determine the date of arrow-blades than anything else in the whole

catalogue of offensive weapons. They are seldom discovered under such circumstances as will enable us to fix their period with decision. The earliest example in the Museum seems to be No. 276, Case A A of Mr. E. T. Stevens's collection; this may possibly be of the thirteenth century. We rarely meet with other than barbed arrows in mediæval pictures.

81 to 101. A series of Old English arrow-heads.

85. This is the only example where the form of the barb is bent inwards; it appears to be too small for a dart cast by the hand, and was probably projected from a balista or large cross-bow.

87 and 91. Other dart-heads, the barbs of which have been broken off.

92. The pile of a roving or flight arrow. The date of this is later, probably it may be assigned to an early period in the sixteenth century.

The majority of the old English arrow-piles we meet with are of the fashion of this specimen, which is perhaps the best adapted for rapid flight. It would not inflict so terrible a stab as the barbed blade, but would penetrate deeper into the body, and be equally fatal in its effects. This form has maintained its ground from the earliest period down to the extinction of military archery in the 17th century, and even now, with some slight modifications, survives in the piles of the butt-shafts, or practice arrows of our archery societies.

93. This appears to be the head of a cross-bow bolt.

94. Probably the head of the old cloth-yard arrow.

95. Bifurcate iron bolt-head.

This form does not seem to be of common occurrence. It was used in field sports, as is shown by a highly curious painting extant of a hunt, given by the Elector of Saxony in 1554 to Charles V. and other great personages, who appear shooting with the cross-bow, the bolts having heads of this peculiar form. This curious painting, Mr. Bernhard Smith suggests, strikingly recalls to mind certain expressions of Shakspeare. In "As You Like It," the Duke laments that the "poor dappled fools" should have their haunches gored with "forked heads." So also Kent says to Lear, "though the fork invade the region of my heart." It may, however, be assumed that they were not used exclusively in the chase, since among various warlike relics found some years since in Towton Field, vestiges, doubtless of the memorable conflict in 1461, iron bolt heads, precisely similar to these, were discovered.

96 to 99. Dart-heads, with very long barbs; other examples have been found near Oxford, and one in the Thames. They appear to have been the heads of feathered darts cast with the hand; similar specimens are known as the *viré* or *veron*, a

heavy arrow, which was discharged from a large cross-bow. The form of this weapon is familiar to us under the name of the broad arrow.

101. This is a remarkable and uncommon example. It is probably the head of a dart projected from a balista, for which its trilateral head would peculiarly adapt it. Thus propelled it must have been capable of piercing any kind of defensive armour.

A similar example is in Mr. E. T. Stevens's collection, No. 279, Case A A.

102. Dagger blade, found at Old Sarum.

103. Spear-head of very powerful make.

See also other spear-heads in Mr. E. T. Stevens's Case L L, Nos. 13 and 14,

104. Dagger sheath and hilt.

105. Buckle.

106. Circular gun-lock.

107. Gun-lock.

108. Horse bit.

- 109 and 110. Fragment of chain armour.

The use of chain armour for the hauberk or coat of mail was the general defensive armour at the time of the Crusades; at first it reached only to the knees, but extended at last to the enveloping the whole body, including the extremities of the feet and hands, and forming round the head a kind of hood. This description of armour admitted of no artistic ornamentation; its beauty consisted only in the fineness and good construction of the links of iron. A good illustration of a complete equipment of chain armour and surcoat may be seen in the fine effigy of William Longuespée, Earl of Salisbury, in the Cathedral of this city. The present examples are probably of a later date, and were used in conjunction with plate armour.

- 111 and 112. Metal frames of pouches.

- 113 to 127. Fragments of chain, barbed nails, &c.

128. Small metal tap.

- 129 to 139. Fragments of wire chain, nails, &c.

140. Miniature horse shoe.

141. Metal badge, probably the White Hart.

- 142 to 146. Fish hooks, miniature axe-head, and nails.

SPOONS.

A considerable number are collected; they are of the usual type, and mostly of latten or lead. Several of them are stamped with the maker's initials; in one instance the fleur-de-lys is stamped along the handle. They range in date from about 1570 to 1770.

The form of the spoon, in England, at least, seems to have continued the same from the middle of the fifteenth century to the

time of the Restoration, the bowl being pear-shaped, the handle round and embossed at the end. A new fashion was then introduced, which superseded the ancient form; the stem and handle became flat and broad at the extremity, which was divided by two clefts into three points, whilst the bowl was elongated into a regular oval. This form of spoon remained till the reign of George I., when the bowl was longer, and the extremity of the handle quite round, turned up at the end, and having a high sharp ridge down the middle. Towards the end of the reign of George II. the present fashion came into use. Some very fine examples of apostle spoons are extant; they continued to be made as late as 1665.

A specimen of an apostle spoon in silver is in Mr. E. T. Stevens's Case L L, No. 163; No. 164 is an early example, dated 1620.

147 to 190. Spoons of various periods, down to 1665; No. 147 *deposited by Mrs. Good*; No. 167 *deposited by Mr. Dixon*.

191 to 199. Spoons of a later date, in use down to the time of George I.

200. Pair of silver spoons, embossed on the handles with a figure of Cupid, period of George II., *deposited by Mr. T. Leach*.

201. Chain used for attaching books to a desk, from Salisbury Cathedral, *presented by Mr. Douglas Gordon*.

CASE B B.

All the objects in this and the adjoining Case not otherwise indicated are part of the Brodie Collection.

KNIVES.

The specimens collected appear to range in date from the fourteenth to the seventeenth centuries. Many of these were doubtless for personal use, and carried in the girdle: there are others, however, which seem to be the implements of carriers and cordwainers. Some are, no doubt, examples of the cutlery for which Salisbury was so long famous.

Prior to the introduction of table knives for the use of guests, almost every one carried about his person a goodly blade, so that at home or abroad they might not lack this needful implement. It is still the custom of the Highlanders, when in full costume, to carry the *skein-dhu* in the garter. The knife continued to be worn at the side throughout the sixteenth century, and it was at this period, when some of the most costly and beautiful sheaths were in vogue, they participated largely in the elegant decoration which the artists of the Renaissance bestowed on objects designed for the commonest use. At the commencement of the seventeenth century, a sheath with a pair of knives seems to have been a common present to a bride elect, constituting a portion of her nuptial array.

For many centuries the only implements provided to assist the process of eating were knives and spoons. It seems extraordinary that an instrument like the fork, both useful and cleanly, should have continued out of use during so long a period. Edward the First might have boasted the possession of *one*; it was kept among his jewels. Piers Gaveston, in the time of Edward the Second, had four of silver, for "eating pears."

About 1610 the use of forks found its way from Italy into this country, though they were not generally adopted till a considerable time after. Later researches, however, have proved in two instances the use of the fork in England at a very much earlier period than the examples quoted. Without assuming any undue advancement in the refinements of life amongst the inhabitants of this district in Anglo-Saxon times, certain it is that the only two instances of the existence of the fork at that remote period have turned up in Wiltshire. In 1837 a silver fork of somewhat elegant form was dug up at Sevington, in North Wilts, together with Saxon coins of A.D. 806—890. It has been suggested that this was used for sacred purposes; however this may be, it is certain that the second example, discovered in 1853 in an Anglo-Saxon burial ground at the foot of Harnham Hill, adjoining this city, together with a knife, were implements of daily use. This last fork is of the most homely description, being of iron with two prongs and a buckhorn handle; the date is probably some period between the end of the fifth century and A.D. 635, when the King of the West Saxons was converted to the Christian faith.

The consequence of the want of forks at table may be readily imagined; the carver who officiated served the company at the point of his knife, perhaps with the assistance of a spoon. In the "boke of kervyng," 1513, the following very necessary precepts are addressed to this household officer:—"Set never on fysche, flesche, beest, nor fowle, more than two fyngers and a thombe." Again, "your knyfe must be fayne and your handes must be clene, and passe not two fyngers and a thombe upon your knyfe."

Before the days of forks a round-ended knife assisted the proverbial fingers of the eater. It is still customary in France to serve the "gigot" with a clean piece of paper twisted round the knuckle for the purpose of holding the joint whilst the knife is used to cut the slices. The custom still lingers in our own country where the haunch of mutton or the ham is still sent up with a handle of ornamented paper round the bone, as if we were still expected to lay hold of it and operate in the old way.

1 to 71. Knives of different forms, with handles of metal, bone, and ivory, variously ornamented. Many of them have still the perforation for suspension.

Early specimens are found in Mr. E. T. Stevens's Case L L (see No. 358, also Nos. 85 and 87, found at Old Sarum).

72. Knife and fork of good workmanship, in their original stamped

leather case. Discovered behind a panel in the Blue Boar Inn, Salisbury; date, early part of the seventeenth century. *Deposited by Mr. H. Cooper.*

It is probable that this set is a specimen of the Salisbury cutlery of the period. The custom of making presents of two knives in one sheath, or a knife and fork, was much in vogue at that time. They sometimes had posys attached; on one dated 1602 is the following :—

“Fortune doth give these pair of knives to you,
To cut the thread of love if ’t be not true.”

And in the “Witch of Edmonton,” 1658, “But see the bridegroom and bride come; the new pair of Sheffield knives, fitted both to one sheath.”

72*. A tortoise-shell case, containing a knife and ivory chop-sticks from China, *deposited by Mr. Nightingale.*

The girdle knife and sheath is not exclusively an English or European fashion; from time immemorial the gentlemen of the Celestial Empire have had dangling at the side, sheaths charged with sharp pointed knives and well turned “chop-sticks.” They are an interesting proof of the retention of a custom in the East long after it had become obsolete among the nations of the West.

73 to 77. Forks, each having two long prongs. Better examples are found in Mr. E. T. Stevens’s Case A A, Nos. 368 to 371.

78 to 84. Knives of inferior make.

85 to 91. Trade implements.

92 to 95. Compasses.

96 to 98. Trade implements.

99 to 104. Hooks of various forms.

105 to 110. Gimlets, chisel, &c.

111 to 118. Trade knives; several are marked with the letter W within a double square.

119 to 121. Hammer heads.

122. Ornamented boss.

123 to 125. Scissors of late date.

126 to 131. Small shears.

See also Nos. 78 to 84, Case L L, Mr. E. T. Stevens’s collection.

132 to 133. Hooks of embossed metal. These objects of personal use, to which leather pouches or straps were attached, were suspended from the girdle.

134. Pair of shears of good workmanship.

135. Small metal cross.

136 to 141. The use of these miniature objects is not apparent.

142 and 143. Snuffers.

144 to 146. Objects of personal use.

160 to 164. Studs.

171 to 183. Collection of watch keys, principally of the last century, *presented by Mr. Hicks.*

PILGRIMS' SIGNS.

Badges of lead or pewter, distributed to pilgrims as tokens of their having visited certain shrines of special repute, and worn like the escallop shell, attached to the cap or sleeve. A pilgrimage in the middle ages, even from one part of England to the other, was a performance attended with much personal labour, fatigue, and peril. The better sort went in cavalcade, so graphically described by Chaucer, but the poor trudged on foot, like the pilgrim in "Piers Ploughman's Vision," who says:—

"Ye may see by my signs,
That sitten on myn hatte,
That I have walked full wide
In weet and in drye,
And sought good scintes
For my soules helthe."

These memorials, partly owing to the poverty of the material employed, have fallen into undeserved neglect; for, although they but faintly reflect the manners of an age which has passed away, they are yet both interesting and instructive. Genuine specimens of the ampullæ, or pilgrim's sign, are scarce. Relics of this description have been extensively forged during the last few years.

220. This device, a crescent and a star, may possibly be symbolical of St. John the Baptist. The moon as well as the morning star, were emblems of this saint. As the moon, in the absence of the sun, reflects his light, and testifies of his existence, so it was said of John that "he was sent to bear witness of that light." So likewise the Baptist was represented as the morning star, the forerunner of the "Sun of Righteousness." The same device occurs on coins of Henry the Third. It may possibly be connected with this county in the person of Richard de Wygornia, who was Sheriff for Wilts, in the time of Edward the First, and whose family seem to have borne this device; but in all probability these signs are of a later date.

221. Ampulla, bearing the arms of Mortimer.

222. Probably represents St. Michael the Archangel.

223. Bust of a man within a frame or border, on which is inscribed, *Soli Deo honor et amor et glory.*

224. Head of St. Thomas of Canterbury.

A Pilgrimage to the shrine of Thomas à Becket was one of the most popular during the middle ages. Thus Chaucer describes—

"Well nine and twenty in a companye
Of sundry folke"—"and pilgrims were they all
That toward Canterburie wolden ryde."

The custom had commenced even in the time of Giraldus Cam-

brensis, who in his early life was a contemporary of the archbishop. Describing an interview which he had on arriving in London, with the Bishop of Winchester, he says, that it was perceived that he and his fellows were lately come from Canterbury, because the signs of St. Thomas were hanging from their necks.

An unusually fine, but somewhat later specimen of a pilgrim's sign, bearing the mitred head of St. Thomas of Canterbury, is in Mr. E. T. Stevens' Case L L, No. 20. It was found in Endless-street, Salisbury; the name of St. Thomas is upon it. The church of St. Thomas, in Salisbury, is dedicated to St. Thomas of Canterbury, and not the apostle.

225. Fleur-de-lys. The emblem of the Virgin.

226. A rare type of Pilgrim's sign. It represents a crucifix placed within a sort of well, and two figures making offerings. This design might possibly refer to the holy wells at Walsingham. A pilgrimage to the splendid shrine at Walsingham, in Norfolk, was scarcely less popular than that of Canterbury. Here was the shrine which kings visited barefooted; the wonder working spot which rivalled Compostella or Loretto.

227. Disc of bone, ornamented with engraved circles, probably used as a piece for the game of tables or draughts. Two were discovered at Lincoln, with Roman remains, and have been regarded by some as relics of the Roman period. They are probably of a later date.

227*. Piece for the game of draughts or tables; it is apparently of sea-horse ivory; date 12th century. The subject deeply sculptured in the centre of the disk is a monstrous animal, with long recurved horns, and cloven hoofs. *Deposited by Mr. Nightingale.*

228. Brooch of base metal, inscribed Sta. Trinita.

229. A cloth merchant's trade mark. It is apparently Dutch; it bears a castle with porteullis, and an imperfect inscription; on the other side is the monogram R. G. crowned.

230 to 232. Metal ornament and stamps.

233. Round metal plate, upon which is inscribed the monogram of the Virgin, crowned.

234. A similar piece, bearing an heraldic device.

These were originally enamelled, and much used during the middle ages for horse trappings, &c., also for the central boss of a large dish or charger.

235. Metal frame-work of a pouch, or possibly the alms-bag of a perambulating friar; it is furnished with a ring at the top which turns on a swivel, and is inscribed with the monogram of our Lord, also that of the Virgin, with the angelic salutation.

1.

1A

1B

2.

About the period of Richard II. the pouch began to be frequently worn by the side : this was called a *gipcière*, and it soon became a part of the costume of every class of society, the pouches of the higher ranks being of velvet and silk, embroidered in gold and silver. These pouches were attached to a metal beam, on the shield of which was usually inscribed the sacred monogram.

236 and 237. Two winged Mercuries, probably of mediæval work, the first is said to have been found at Old Sarum, and might be Roman.

238. Bulla of Pope Urban V., 1362—70. This was found in a barrow on the Downs near Burcombe. *Presented by Mr. Nightingale.*

238* Bulla of Pope Urban VI., 1378—89, *presented by the Right Rev. the Lord Bishop of Salisbury.*

239. Bulla of Pope Martin V., 1417—31. *Brodie Coll.*

240. A money weight, on which is the emblem of St. Michael ; on the reverse, an open hand and the letters B F. *Brodie Coll.*

241. An object in bronze, to which are attached two escutcheons, formerly enamelled. (See plate No. 1.) It consists of a small copper ball, with four slender projecting pieces of the same material attached to the side of it round a hole, and originally diverging like the feathers of a shuttlecock, though now partially bent inwards ; to the ends of two of these are appended, by a loose hinge-joint, two lozenge escutcheons of arms. On the other two the escutcheons have disappeared. The ball is hollow, and opposite the hole is a small portion of a tube, showing signs of a fracture, as if torn from its attachment.

It is difficult to say what has been the use of this object, or to what class of ornament it is to be referred. It does not seem to have been a personal ornament ; it might have been a portion of some kind of decorative horse furniture. The date of it is about the early part of the fifteenth century. An object of a similar kind is preserved in the British Museum, of which an engraving is appended (see plate No. 2) for comparison.

A detailed account of this ornament has been given in the "*Archæologia*," by Mr. W. S. Walford. He states that one of the escutcheons bears the arms of Montacute (plate 1A), and the other those of Grandison (plate 1B), and that this relic, now so rude and unattractive, had once probably been an ornament of some kind belonging to a descendant from a marriage of a Montacute with an heiress of a Grandison. Such a marriage did take place in the fourteenth century between William Montacute, the first Earl of Salisbury, and a daughter of William, Lord Grandison. It is highly probable that a larger escutcheon than the others once occupied the centre in the object exhibited ; if so, that was undoubtedly the principal coat.

Mr. Walford, after tracing the descent, thinks that in all probability this relic once belonged to Alice, Countess of Salisbury, who married Richard Neville about 1424. Her father, Thomas, Earl of Salisbury, well known as a distinguished commander in the war with France, was killed at the siege of Orleans, 1428. She was then about 22 years of age, and had issue a son and heir-apparent, who was afterwards the famous Earl of Warwick and Salisbury, who gained the soubriquet of the king-maker. Her mother had died before her father, and he took for his second wife the daughter of Thomas Chaucer, who is generally believed to have been a grand-daughter of the poet.

242. Metal crucifix, perhaps used on a processional cross.

FINGER RINGS.

The earliest examples are found in Egypt. Signet rings were much worn by the ancient Egyptians. Their rings were made of gold, of silver, of bronze, of ivory, and of porcelain; an example of the latter material is now in the Museum.

The Greeks are supposed to have derived the use of the ring from Asia. As with the Egyptians, the primitive use of the ring was to serve as a signet, hence to prevent fraud Solon enacted a law that no seal engraver was to keep by him the impression of a ring he had cut. In the earlier ages the rings were all of metal, then stones were set in them; the art of gem engraving became in consequence much cultivated, and the Greek engravers arrived at a high degree of perfection in it.

The Etruscans were marvellously cunning goldsmiths, in which art their skill has never been surpassed. Rings of extraordinary beauty are found in the tombs of Etruria.

There is no nation with whose individual and personal history the finger ring is so closely connected as the Roman. Under the Republic and the Empire its use was regulated by laws, subsequently rings became immoderate in number and inconvenient in size.

During the Anglo-Saxon times, and throughout the middle ages, the use of the finger ring was general, both for personal and official uses. Amongst the varieties of the fourteenth and fifteenth centuries, a pleasing class is formed of rings which have sacred monograms and devotional inscriptions, such as No. 243. The wedding ring is doubtless of Roman origin, and was usually given at the betrothal, as a pledge of the engagement. Strange as it may seem, the Jews did not adopt the wedding ring until after they saw it in general use with other nations. Then there are the "posy rings," with their quaint inscriptions; and during the middle ages many stones were worn in rings, and highly esteemed for their talismanic and medicinal virtues, such as the ruby, the turquoise, and principally the crapon or toadstone. A ring made of the hoof of an ass was held to be good against epilepsy. Merchants' marks, which appear to be imitated from the Flemings during the reign of

Edward III., became very common during the fifteenth and sixteenth centuries, both on seals and signet rings; they are composed of a private cypher combined with the initials of the owner's name. They were more generally used in the great sea-ports on the eastern coast of England than in the south, and belonged chiefly to woolfactors or merchants of the staple.

- 242*. Fac-simile of a fine Etruscan ring, set with a scarabæus; the gem is antique, but the gold setting is an exact copy by Signor Castellani, of Rome. Also a Roman lady's ring, set with an antique intaglio. *Deposited by Mr. Nightingale.*
243. Gold ring, with a representation of the Holy Trinity, also a legend. This ring was originally enamelled; date 1450—60.
244. Silver gilt ring, on it are engraved the figures of two saints; formerly enamelled: date fifteenth century.
245. A lady's ring, ornamented with a cross and having small projecting knobs on the hoop. This is possibly a decade ring, used for counting paters and aves.
246. Bronze ring of the sixteenth century, inscribed "anna mariam et maria peperit christum."
247. A silver ring, set with a crapaudine or toadstone.

For many ages this stone was supposed to possess talismanic qualities; rings set with it constantly occur in old inventories. According to popular belief, it was supposed to be engendered in the head of a toad, a fallacy long since exploded. Shakspeare alludes to it in "As You Like It :"—

"Sweet are the uses of adversity;
Which, like the toad, ugly and venomous,
Wears yet a precious jewel in his head."

Nichols, in his "Lapidary," says, "Some say this stone is found in the head of an old toade; others say that the old toade must be laid on the cloth that is red, and it will belch it up, or otherwise not: you may give a like credit to both these reports, for as like truth is to be found in them as may possibly be. Witness Anselmus Boetius, in Lib. 2, in the chapter on this stone, who sayth that to try this experiment in his youth he took an old toade and laid it upon a red cloth, and watched it a whole night to see it belch up his stone; but after his long and tedious watchful expectation he found the old toade in the same posture, to gratify the great pangs of his whole night's restlessness."

248. Gold ring set with a turquoise.

This stone was formerly much valued for its supposed magic properties, one of which was, that it faded or brightened its hue as the health of its wearer increased or grew less. It will be remembered that Shylock prized his "turkoyse beyond a wilderness of monkeys."

249. An Irish ring of the sixteenth century.

250 to 259. Rings of various periods.

260. Silver ring set with a carbuncle, found at Old Sarum. *Presented by Mr. C. Wyndham.*

261 to 264. Rings bearing merchants' marks. No. 262 *presented by Mr. Hicks.*

Other rings with merchants' marks are in Mr. E. T. Stevens' case L L; see also No. 45, a brass ring, with the letters L. V. in niello; and No. 47, a curious ring with projecting collets.

265 and 266. Embossed metal buttons.

267 to 304. Buckles of various forms.

305 to 311. Buckles of a later period.

312 to 317. Small buckles.

318 to 325. Long pins and bodkins.

326 to 341. Pins with knobs for personal use.

342. Terminal figure of handle.

343. A bobbin for making cushion lace; it is marked M.B., 1693, and is delicately ornamented with black and white crosses on a red ground. Found on the site of the Market-house, at Salisbury. *Presented by Lieut. E. M. Fisher.*

344 and 345. Two small globular bells.

346. Embossed flat cup in silver, about 1700.

347. Scutcheon of a lock bearing the royal arms.

348. Part of a lock.

349 to 367. A series of padlocks.

368. Ornamental lock and plate.

369. Fetter lock of late date.

370. A curious nest of keys, *presented by Mr. Wyndham Pain.*

371 to 385. Various keys.

388. Leaden plate, bearing a rude figure and inscription. This is apparently a modern forgery. *Presented by Mr. Clench.*

389 and 390. Persian locks, *presented by Mr. J. C. Whereat.*

391 to 395. Ordinary keys.

Other objects in Mr. E. T. Stevens's Case L L—

1. An iron shoe of unknown date, found at Old Sarum.

A story is told of Empedocles, a philosopher of Agrigentum, who sought glory in a voluntary death by throwing himself into the crater of Mount Ætna, in the vain hope that his mysterious disappearance from this nether world would persuade mankind to believe that he had been taken up by the immortal gods to the realms above. His body was destroyed indeed, but the mountain, in its throes, disgorged the *iron shoes*, and so the fraud of the philosopher was discovered.

3. Fetterlock, found at Clarendon.

4. Another from the bed of the river Avon, Salisbury. An early notice of a fetter fastened with a lock occurs in the life of

St. Egwin, Bishop of Worcester, about 692. Before he set sail for Rome, he caused a smith to make a heavy ring of iron, which he locked round his bare leg by way of penance, and then threw the key into the river Avon. When he arrived on the shores of the Tiber, he fell on his knees and returned thanks to God for his safe voyage. The legend goes on to relate how his attendants began to fish in the river, and soon caught a salmon, in the stomach of which they found the key which they had cast into the Avon before quitting England.

7. A magnet, probably used for some talismanic purpose; date seventeenth century.

There is a similar one, but of larger dimensions, in the Ashmolean Museum at Oxford.

168. A richly-carved knife-sheath in ivory.

This object corresponds precisely with, and is apparently the same, as that engraved in the 17th volume of the "Journal of the Archæological Association," where it is thus described:—"It is boldly carved in every part, one face displaying a Cupid performing on a small harp; the other a nude figure wearing a morion, and holding an orange or apple in each hand, that in his right being raised towards the mouth. A short projecting tube is worked out on each side the sheath, through which the suspending cords passed. The lower part of the sheath is decorated with acanthus leaves, &c., and from the general design of the subject, it is fair to conclude that it was sculptured in Holland during the reign of our Elizabeth. It was discovered in forming the new Shadwell basin."

CASE C C.

KEYS.

The collection of keys forms a large part of the drainage discoveries. They include many interesting examples, ranging from the thirteenth to the sixteenth century. The latch keys are the most remarkable; the age of many of them might be questioned, if they were not known to have been found with other keys at least as old as the fifteenth century.

During the thirteenth and fourteenth centuries key bows were frequently of a lozenge form. In the fourteenth and fifteenth they were usually of a trefoil shape, and considerable varieties prevailed; when annular they were frequently filled in with designs, partaking much of the character of the architectural decoration of the period. In the sixteenth century keys became very varied, ornate, and fanciful in design. The passion for decorated keys reached its climax in the reign of Elizabeth; scrolls and cyphers, crosses and crowns, were then interwoven in the most intricate, tasteful, and ingenious manner. The keys in ordinary use about the commencement of the seventeenth century are much more simple in design.

1 to 212. A series of keys, ranging from the thirteenth century down to a recent period.

50, 51, 54, 75, 77 have good ornamented bowls.

95 is an early form of latch key.

Other curious latch keys are in Mr. E. T. Stevens's collection, attention is directed to them, as well as to Nos. 153 and 155.

88 is an early form found at Old Sarum in 1853.

Nos. 70 and 71 *presented by Mrs. Fowler*; they were found in uncovering the foundation of the Cathedral, at Old Sarum, the large key near the site of the west door, the smaller key near site of the high altar. No. 62 *presented by Mrs. E. Wickins*; the No. 133 *presented by Mr. Chubb*.

Pottery and Porcelain.

As the Museum at the present time contains a tolerably extensive series of examples of widely different periods, it has been thought desirable to append a short sketch of the Ceramic art generally.

Amongst the numberless departments of human industry, from the most rude to the most civilised state of society, none presents to us productions more varied in their simplicity, as well as in their elaborate character; none, notwithstanding their fragility, are more durable, or bear more indelibly the impress of the period or country to which they belong; none evince more distinctly the condition of social refinement or artistic taste which had influenced their fabrication.

It is impossible to determine when the manufacture was invented. Clay is a material so generally diffused, and its nature so easily discovered, that the art of working it does not exceed the intelligence of the rudest savage.

In few countries is the condition of the atmosphere such that objects of sun-dried clay can survive a single winter. Egypt, Assyria, and Babylonia, the triple cradle of the human race, have alone transmitted to posterity the sun-dried products which represents the first efforts of the art. The baking of pottery, so as to give it an indestructible tenacity, must have been a great stride in the art. We, however, find that among all the great nations baked earthenware is of the highest antiquity.

The potter's art, though in modern times restricted to domestic use, was employed by the ancients for higher and nobler purposes. From the pottery of the tombs we learn the domestic manners of nations such as the Etruscans, long since passed away. The extent of ancient Greece, of its colonies, and its conquests, is clearly to be traced through each division of the Old World by the Grecian funereal pottery. The frontier line of the Roman

dominion in Britain, the extent of the Mahomedan empire in the Old World, and the Aztec dominion in the New, might alike be clearly pointed out by their pottery.

The Egyptians largely employed glaze or enamel in covering small figures and other ornamental forms, the interior parts of which are formed of grains of sand, cemented by melted matter, and so hard as to draw sparks from steel. As works of art they are of little value, but they show that the Egyptians had made the first step towards the invention of porcelain; but a further step was undoubtedly required to produce a ware at the same time compact as stone and brilliant as glass; and this discovery is due to the Chinese. The Egyptians, although they possessed the requisite materials, failed to combine them so as to produce a true porcelain.

Artificial clays seem to have been first employed by the Chinese for their pottery or porcelain as early as 163 before Christ. The term pottery is applied to all ware which is distinguished from porcelain by being opaque and not translucent.

For many centuries the only porcelain known in Europe was the Chinese. All through the middle ages, and down to our own time, pottery was, of course, extensively made for the every day requirements of domestic life; but the manufacture of the semi-transparent porcelain was unknown, and specimens of "porselyn," brought from the East, were scarce and highly prized. As may be supposed, attempts were soon made to discover the art of making this beautiful material. It has recently been ascertained that soft porcelain was for a short time made at Florence under the Medici as early as 1575. About 1700 porcelain began to be made by the French at St. Cloud; but with these exceptional instances, chemists had endeavoured for two centuries to imitate the Chinese porcelain, but could not approach nearer than earthenware.

In 1709, however, true porcelain was undoubtedly made at Dresden, and from that period the art rapidly spread. Numerous fabrics were made in Germany. In England, the Chelsea manufacture was well established in 1745, and arrived at a great degree of perfection in 1762. The art struck root rapidly in France. Porcelain of the highest quality was made at Vincennes and afterwards at Sèvres, under royal patronage, from 1750. So popular, indeed, had the art become, that there were few Royal Houses in Europe that had not a manufactory attached to the Court. Besides the numerous German fabrics, a fine porcelain was made under the auspices of the King of Naples at Capo di Monte, also at Buén Retiro, in Madrid.

Although the English manufacturers had not the advantage of royal subsidies, they still produced porcelain of the highest quality. In the palmy days of the Chelsea fabric, viz., from 1750 to 1765, very fine specimens were made, especially remarkable for the fine claret colours and deep blue. At Worcester, they not only made porcelain of a richly decorated character, but here was introduced

the art of transfer printing on china, by which means a great saving of labour was accomplished, at the expense, perhaps, of some originality of design. This discovery, however, had great commercial value; it laid the foundation of a large export trade, which has increased regularly down to the present time. The Chelsea works were subsequently removed to Derby, where the manufacture was carried on with great success. At Plymouth, Bristol, and other places in England, porcelain of good quality was made, but these fabrics lasted only for a short time, and specimens have now become scarce.

The most beautiful and precious porcelain ever produced was undoubtedly that of Sèvres. As in many other instances, it seems to have reached its culminating point soon after its introduction, for certain it is that nothing before or since has been made to equal the beauty and richness of the finer Sèvres productions between 1753 and 1769, and this is mainly owing to the soft velvety quality of the paste, which was at that time merely experimental and only preparatory to the discovery of hard paste like the Oriental, which was considered to be the only true porcelain. This, when arrived at, was found ultimately to be far less adapted for rich colouring than the earlier specimens, hence the value of the old Sèvres fabric.

But if the French can claim the merit of richness of painting and colour, they never approached in form or beauty of outline the contemporary works of Wedgwood. There are few things in the way of art that we have so much reason to be proud of as the exquisite productions of Wedgwood. His finer works were moulded into forms so truly chaste and classical that they are still sought after, and collected with greater eagerness than they were at the time of their production.

The Ceramic art has always been an object of royal patronage, nor is the art less associated with the names of celebrated historical characters. The story of Palissy or Bottcher is full of romance. Dr. Johnson spent much time at the Chelsea works in endeavouring to make some theoretical improvement; Nelson, in the midst of his victorious course, found time to collect the porcelain of Copenhagen and Capo di Monte, and during the past year Mr. Gladstone, the Chancellor of the Exchequer, himself a distinguished collector, has borne eloquent testimony to the labours of Wedgwood.

CASE O O.

EGYPTIAN POTTERY.

1. Figure of the deity Phtha Socharis, the pigmy, a bow-legged naked dwarf; that form of Vulcan particularly worshipped at Memphis.
2. A sepulchral figure, remarkable for the tint resembling the turquoise blue of Sèvres.

3. Scarabæus and ornaments taken from a tomb at Abydos, of the seventeenth Dynasty, about the time when Joseph was in Egypt. 1650, B.C.
4. Ring of blue so-called porcelain, from a tomb at Thebes. Blue is the prevalent colour of these delicate ornaments; it is not probable that these rings, of a substance more fragile than glass, were worn during life.
5. Scarabæus and blue bugles.

Beads and amulets in the shape of small figures were extensively manufactured by the Egyptian potters. If we may judge from the quantities still found after twenty or thirty centuries of devastation, millions of these objects must have been made for the decoration of the dead or living. They even formed an article of export, having been found in Greece and Italy, and among the ruins of Persepolis and of Nineveh. They comprise various deities, sacred animals, and religious emblems, studs for the hair, drops for ear-rings, pendants, bracelets, and anklets, also scarabs of various sizes. Among the beads are bugles of blue porcelain strung in nets and formed, with other small globular beads, the exterior net-work of mummies. Other amulets and beads are found strung round the necks of mummies; some have supposed that they were the necklaces worn during life, but it is more probable that they were made for the dead. The gay and various colours seem to have been reserved for mummies embalmed in the most expensive manner. Persons of ordinary rank had only the usual blue bugles. These are probably not much older than the twenty-sixth dynasty, or about eight centuries before Christ. *Deposited by Mr. Nightingale.*

6 to 11. Sepulchral figures.

These formed an extensive branch of porcelain manufacture, and were ordered to be made according to the Egyptian ritual, a portion of which is either traced or stamped on the figure in hieroglyphics. They are usually represented with a pickaxe in the right hand, and a hoe in the left, also a cord, to which is attached a basket to hold the seed-corn. They are very commonly found in Egyptian tombs. It is supposed that the use of these figures was to aid the deceased in his labours of preparing and irrigating the ground, and raising the crop in the mystical fields of Elysium.

12. Figure of Thoth, the ibis-headed, the Mercury of Egypt; represented in ordinary costume, with the left foot advanced in the act of walking.
13. Small figure of the Celestial Isis.
14. Four scarabs.

Nos. 6 to 14. *Deposited by Mr. E. T. Stevens.*

15. Scarabæus of unusually large size.

This object, so frequently met with in Egyptian tombs, repre-

sents the beetle called in Egyptian "creator," the sacred emblem of the God who made all things out of clay. The insect rests upon a base, upon which is generally inscribed a portion of the sepulchral ritual more or less complete, in allusion to the mystical transformation which the deceased had to undergo before he could obtain his heart.

Remote as is the antiquity of these burial customs amongst the oldest known people, they become comparatively modern, if we are to accept the age of the sepulchral cave of Aurignac, in the Pyrenees, which is thus described by Sir Charles Lyell in his recent work on the Antiquity of Man :—

"The Aurignac cave adds no new species to the list of extinct quadrupeds which we have elsewhere, and by independent evidence, ascertained to have once flourished contemporaneously with man. But if the fossil memorials have been correctly interpreted—if we have here before us, at the northern base of the Pyrenees, a sepulchral vault, with skeletons of human beings, consigned by friends and relatives to their last resting place—if we have also at the portal of the tomb the relics of funeral feasts, and within it indications of viands destined for the use of the departed on their way to the land of spirits ; while among the funeral gifts are weapons wherewith, in other fields, to chase the gigantic deer, the cave-lion, cave-bear, and woolly rhinoceros—we have at last succeeded in tracing back the sacred rites of burial, and, more interesting still, a belief in a future state, to times long anterior to those of history and tradition."

16 to 20. Five sepulchral figures.

Nos. 15 to 20. *Deposited by Mr. Chivers.*

21. Twelve objects found between the first and second layers of the bandages of an Egyptian mummy ; consisting of a pectoral plate, hung by a cord to the neck, having the symbolical eye, also the plumes of Ptah, and other amulets, &c. *Presented by Mr. Darke.*

22. A kiln-baked brick from ancient Babylonia, *deposited by Mr. E. T. Stevens.*

Like the sun-dried bricks they were made of clay, mixed with grass and straw, which have, of course, disappeared in the baking ; traces, however, may still be distinguished of the stalks or stems in the clay. The back of the brick still retains a portion of the bitumen in which it was originally imbedded. This mode of brick-making was of the highest antiquity in Babylon. It is mentioned in the Book of Genesis that burnt bricks were employed soon after the flood, to build the foundations of the celebrated Tower of Babel, "and slime," or "bitumen," says Moses, "was to them instead of mortar." The mode of building here described exactly coincides with the manner in which the foundations of the buildings, both in Assyria and Babylonia, are constructed.

The brick has impressed upon it an inscription in the arrow-headed character. These, like the bricks of Egypt, not only afford testimony to the truth of Scripture by their composition of straw and clay, but also by the cuneiform inscriptions impressed upon them, afford the means of tracing the sites of ancient Mesopotamia and Assyria with an accuracy unattainable by any other means. The inscription in the present instance corresponds as nearly as can be made out with that on a brick of precisely similar character deciphered by Sir H. Rawlinson as bearing the name of Nebuchadnezzar, King of Babylon. It is highly probable, therefore, that the date of this brick is of the period of Nebuchadnezzar's time.

23. A terminal figure or caryatide, of terra cotta, from the island of Milos, in Greece.
24. A small terra cotta figure, wanting the head, brought from Milos. These small figures were used by the Greeks as ornaments, or as their household gods. They are found to have been made by the same process as the modern plaster casts; they were frequently coloured in distemper, as in the present example.
25. A bird moulded in terra cotta. Many little figures of animals and birds, used as toys, have been found deposited with the bodies of children in the tombs of Melos and Athens: this is probably an example.

Nos. 23 to 25. *Deposited by Mr. E. T. Stevens.*

26. Two pieces of early British pottery, fragments of urns, from a barrow on Salisbury Plain, *presented by Dr. Fowler.*

These two pieces represent a large and highly interesting class of funeral pottery, found more abundantly in this neighbourhood than in any other part of England. No county has produced so many and important monuments of its former Celtic inhabitants as Wiltshire. A great number of the tumuli or barrows which are so plentifully found on our downs were systematically opened some years since by Sir R. C. Hoare, and their contents are still preserved at Stourhead. The vases are generally of an urn shape, with wide open mouths, and tapering at the feet; the lip is bevelled, and overlaps, thus giving them a peculiar form. Their style of ornament is of the simplest kind; cords and bands are laid round or down the vase before it had undergone the imperfect baking—or the pattern is incised with a tool, or pointed piece of stick or bone; the usual ornament is the herring-bone, chiefly placed on the bevelled rim or top. As it is impossible, owing to their great friability, that they could have been much used for domestic purposes, it is probable that they were expressly made for sepulchral rites. They are frequently of considerable size, and are found in barrows protecting the ashes of the dead; beads and rude personal adornments of the Celtic races are found with them, together with flint, stone, and some types of bronze weapons.

- 27 to 34. Pieces from a large find of Roman pottery, discovered in 1852, in the New Forest, to the east of Fordingbridge, *presented by Mrs. G. R. Tatum.*

Over a tract of some extent were found scattered the fragments of Roman vessels, the greater part of which proved to be cast away from a potter's kiln, and were so much vitrified as to resemble modern stone ware. The majority of these vessels consisted of upright urns, with six indentations in the sides; they were all more or less cracked and warped. The kilns are supposed to be of the third century of our era, and the ware was in local use, some of it having been found at Bittern.

35. A small circular vessel of early ware; it has four projecting knobs, and is without any scored or impressed ornament. *Deposited by Mr. E. T. Stevens.*

- 36 and 37. These two specimens of toy vessels were bought a few years since in the market at Seville, for something less than a halfpenny, and were similar to larger vessels then on sale for ordinary domestic purposes. They serve to show how the forms of the very earliest period are still retained in the south of Europe. *Deposited by Mr. Nightingale.*

- 38 and 39. Two bowls, from Italy, of Roman red Samian ware.

The use of this kind of pottery seems to have extended with the Roman Empire, fragments of it having been discovered wherever the Roman people had settled after their conquests. The paste of the ware was worked in the most perfect manner, and is of a fine coralline red colour. The articles usually made of this material were basins, circular bowls, and flat dishes, richly embossed; the design upon their surface comprehended an immense variety of subjects, and have almost invariably the name of the potter stamped upon some part of the vessel. The ware of this kind found in England was chiefly made on the Rhine and in the Eastern parts of Gaul.

40. Twenty-one fragments of Samian ware, found in London.

- 41 and 42. Two lamps of Samian ware, from Italy.

43. A lamp of terra cotta, ditto.

44. A lamp of coarser clay, ditto.

Nos. 38 to 44 *deposited by Mr. E. T. Stevens.*

45. A lamp taken from the Catacombs of San Lorenzo, at Rome. *Presented by Mrs. Montgomery.*

46. A lamp found at Old Sarum. *Presented by Mr. Tiffin.*

The lamps found in England are seldom of bronze, but almost invariably of terra cotta, the later ones of red Roman ware, with small projections at the sides instead of handles. These lamps are, with few exceptions, of a rude character, being mostly without ornament or potters' names.

47 to 50. Two handles and necks of large amphoræ, with potter's mark. The thick stone ware of which they are made has appeared everywhere in fragments of large jars and ollæ.

51. Piece of terra cotta, inscribed FAVSTI ' AVGV.

Nos. 47 to 51 *deposited by Mr. E. T. Stevens.*

52. A large number of fragments of Romano-British pottery, including a small vessel, some of the pieces have small circular holes. Found at Wylve camp in 1863. *Deposited by Dr. H. P. Blackmore.*

53. Eight pieces of early Romano-British pottery, found at Pitton, upon the site of (apparently) a British village. *Presented by Major Luard.*

54 to 57. Four beads, found in 1853, in an Anglo-Saxon burial-ground at Harnham. *Deposited by Miss Fawcett.*

These beads are fused with great difficulty when exposed to a very strong heat. They seem to differ from Roman beads in respect to hardness and freedom from decomposition.

58. Sundry beads, for comparison, made for and still used in the slave trade on the West Coast of Africa. *Presented by Mr. Levin.*

CASE H H.

All the objects in this case, not otherwise indicated, are *deposited by Mr. E. T. Stevens.*

ETRUSCAN AND GREEK POTTERY.

Within the last forty years excavations in Italy, on various sites occupied by early colonists from Greece Proper, have brought to light a rich and unlooked-for source of knowledge concerning the habits and customs of the ancient Greeks: this is found in the pottery of their tombs or rather sepulchral chambers. The quantity, the large size, the beauty of form, the exquisite state of preservation, and, above all, the fine style of art, combined with the infinite variety of subject found on these vases have attracted the attention of Europe. The British Museum has been permanently enriched by these treasures of ancient art, and it is to that source where the finer specimens must be sought.

1 to 7. Seven Greek vases of similar character, with handles, black ground with female heads and borders in red. *Presented by Mr. Mayer, F.S.A., of Liverpool.*

8. Open vase with handles, black ground, floriated border in red.

9. Flat vase with handles, of fine cream-coloured ware, with black borders.

10 and 11. Small flat vase and cover of Etruscan ware, also a tall bottle, having the subject of Theseus and the Minotaur in black on a red ground. *Presented by Mr. Tiffin.*

- 12. Flat handled cup of black ware.
- 13. Small vase with handle
- 14, 19, 26. Three small amphoræ.

These last five objects *presented by Miss Salisbury.*

- 15. Tazza with handles, border rudely painted in colours on a black ground, the pattern is divided by fluted zones, cut in the clay.
- 16. Vase with handles, of a fine unglazed ware called Carthaginian.
- 17. A cylindrical tube of yellow ware, with Greek ornamentation in red lines.
- 18. A small Greek tazza of black ware, ornamented with grapes and foliage in red.
- 20. Small vase with handles of black ware.
- 21, 22, 32. Three flat-shaped vessels of the so-called Carthaginian ware; two are of peculiar form, with handles of unusual character.
- 23 to 25. Vessels of ordinary type.
- 27. Tazza of black ware, ornamented with dolphins and tridents in red.
- 28 and 29. Two flat cups with handles.
- 30. Flat vessel of fine brown clay.
- 31. Black-handled cup of elegant form.

POTTERY OF MEXICO AND PERU.

Pottery of various descriptions has been brought from Mexico; it was spoken of with admiration by the Spaniards at the time of their conquest. The Peruvian has a distinct character, but approximates to the Mexican, having the same clumsy and uncouth shapes. Yet in some specimens we find the peculiar Grecian fret ornament, copied by the Greeks from the Assyrians. Many of the American tribes are said to have carried the art to great perfection; There are some who bury their dead in jars large enough to receive them.

- 33. A double bottle of black ware, with rude incised ornaments; the head of one bottle is in the form of a bird, which is made to whistle by blowing into the neck of the attached vessel.
- 34 and 53. Gourd-shaped vessels of fine ware.
- 35. Round vessel of fine ware, in the shape of a pilgrim's bottle, the spout serving also for a handle.
- 36 to 38. Three Mexican whistles of grotesque form.
- 39. Part of a Mexican clay flute.
- 40. A curiously-formed clay bell, rudely ornamented and perforated.
- 42, 51, 54. Three grotesque seated figures.

- 43 and 49. Two specimens of modern Mexican ware, made from the scented clay of Testilwacan.
- 44. Small Peruvian vessel in the form of an animal, from the ruins of Truxillo; this adaptation of an animal to the form of a drinking cup is found at all periods.
- 45. A curious vessel of Peruvian black ware in the form of a head, wanting the lip; the hair and decorations are finely scored; it forms a characteristic specimen of South American pottery.
- 46. A cup supported by a grotesque figure; a snake is entwined round the lip.
- 47, 48, 50. Three clay masks.
- 52. A globular vessel with four legs, ornamented with heads and cartouches of seal characters.

CASE P P.

MOSAICS.

The art of working in mosaic was practised at an early period. It was very popular amongst the Romans both in Italy and in their colonies; indeed, wherever Roman villas have been discovered, traces of tessellation, more or less elaborate, have turned up also. These are usually worked in small cubes, generally of black and white, with a considerable variety of pattern; others of a richer kind were made of the three materials, porphyry, serpentine, and white marble. Very fine specimens have been discovered at Cirencester, Wiltshire, and at Thruxton, Hampshire.

In the middle ages a far more elaborate and gorgeous mode of working was employed for the purposes of decorating the walls and apses of churches; the materials used were small squares of vitrified paste of brilliant colours, and a gold ground. The whole art of this glass tessellation seems to have had a Byzantine origin. Nothing can exceed the magnificence of this kind of decoration as seen in some of the more important churches of Italy and Sicily. It is not possible to refer to any remains of this kind in England. A very interesting example of the plainer kind of geometric mosaic exists in Westminster Abbey. The tomb of Edward the Confessor, erected by Henry III., is of this kind; it was doubtless made by an Italian artist. A similar example of about the same period may be found in Wilton Church, brought from the Basilica of Santa Maria Maggiore at Rome; it originally formed a shrine, but is now used up in different parts of the church near the altar; the small twisted columns of the pulpit are a part of the same work.

1. Portion of a Roman tessellated pavement from Halicarnassus, representing a head. This fine fragment apparently forms part of an excavation of a Roman Villa, made at Budrum, in 1856, by Mr. Newton. The date is probably between the time of the Antonines and the reign of Caracalla. *Deposited by Mr. F. A. Blake.*

2. Tesserae of "smalto," of one colour, from Herculaneum. *Deposited by Miss Harris.*
3. Ditto, in white marble, from Pompeii. *Presented by Miss Salisbury.*
4. Coarser kind of tessellation.
5. Piece of pavement, formed of imbedded marble.
6. Cubes of various materials used in making mosaic.
7. and 8. Two pieces of mediæval mosaic, such as was used in Italy about the thirteenth century. *Deposited by Mr. Nightingale.*
9. Moorish tile, called by the Spaniards "azulego," from the prevalent blue colour, from the Palace of the Alhambra, at Granada.

During the dark ages that succeeded the subversion of the Western Empire, the manufacture of decorative pottery was entirely lost in Europe. It first re-appeared in Spain, carried thither by the Mahomedan invaders, and principally in the fortress-palace of the Alhambra, are found specimens of this style of decoration, which attest the grace and refinement of Arabian art.

- 10 to 13. Other tiles from the Alhambra.
14. Two tiles from the Alcazar, at Seville. Nos. 9 to 14 *deposited by Mr. Nightingale.*
- 15 to 17. Three tiles from the King's Palace, at Clarendon. *Presented by Dr. Fowler.*

The earliest specimens of decorative fictile 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 1200. In the two following centuries the decorations were of a much more varied and elaborate character. The devices impressed upon paving tiles consist for the most part of foliage, heraldic bearings, crosses, symbols, and grotesque figures.

- 18 to 27. Ten tiles from the site of the old Grey Friars, Fisherton, and other sources; also a tile bearing shield of arms. *Presented by Mrs. Wickins, Mr. Clench, &c.*
28. Tile of later date, from Cirencester. *Deposited by Rev. J. Greenly.*

CASE II.

MEDIÆVAL POTTERY.

1. Tall English jug, of very early date, possibly Norman; it has a mottled glaze of yellow and green, the only ornamentation

consists of horizontal scored lines, and a slightly moulded base. A similar vessel was found in Cannon-street, London, in 1853. The present example was found in Milford-street, Salisbury. *Deposited by Mr. E. T. Stevens.*

2. Fragment of the lip or spout of a jug, representing a bearded head; it has a light green glaze. The date may be as old as the 14th century. Found at Old Castle, and *presented by Mr. Marsh, of Stratford.*
3. Early English jug, in the form of an animal; a slight pattern is scored in the clay.

This very curious vessel was found at Bulbridge, near Wilton, a few years ago. Specimens of fictile vessels of this early period are extremely rare. The only two similar examples, both in form and colour, were found at Lewes, in Sussex, and are figured in the 10th vol. of the Sussex collection. On one of them is a mounted figure, and from the form of the spur a date not later than the 13th century has been assigned to it. The present example is probably somewhat later. *Presented by Mrs. A. Pleydell Bouverie.*

4. A puzzle cup of fine stone ware, of rich yellow colour, and good glaze. *Presented by Mr. C. Wyndham.*

These quaint vessels, constructed on the principle of the syphon, seem to have been much in vogue during the 17th century; the art consists in getting at the liquor without spilling the contents. The idea was probably taken from the Chinese.

5. A puzzle cup of Chinese porcelain, of unusually good design.
6. A German puzzle cup, in the form of a bear. A similar one is figured in Maryate's History of Porcelain. The potters of Nuremberg were celebrated for making imitations of the various animals of the country. These are frequently of very elaborate workmanship. Nos. 5 and 6 *deposited by Mr. Nightingale.*
7. A puzzle jug of early form, having a circular aperture in the centre of the vessel, and perforations in the neck. It bears the following inscription, scratched in the paste before glazing. W. Z., 1603: "When this you see, remember me." *Deposited by Mr. E. T. Stevens.*
8. A similar one, inscribed W. Z., maker, 1606. *Deposited by Mr. Small.*
9. A similar one, without the spout, marked J. F. M., and the letters T. L. perforated in the neck, found at South Newton. *Presented by Mr. Tabor, High-street.*

The above three examples of early English pottery are very curious and interesting. The date is considerably earlier than any before noticed; the earliest quoted specimen bearing a date is a drinking cup, in the possession of Mr. Mayer, of Liverpool, marked

1612. The quality of the ware is fine and compact, the glazing excellent, of a rich brownish red colour. From the fact of these three specimens having been accidentally brought together from this immediate neighbourhood without any attempt to select them, there can be little doubt that an early manufactory of ware of this kind was carried on somewhere in this district.

It is very desirable that any further information on this interesting subject should be made known; we are already in possession of the important facts that the initials of the maker were W. Z., and the date of his earliest recorded work, 1603.

10. A large four-handled goblet and cover, possibly a christening cup, of good form; the sides are ornamented with rough devices impressed; attached to one of the handles is a whistle, an appendage sometimes found added to drinking cups of the 17th century, for the purpose of calling the attendant for more liquor. It bears the following inscription round the rim:—

HERE . IS . THE . GEST . OF . THE . BARLY . KORNE . GLAD . HAM . I . THE
CILD . IS . BORN . I . G . 1692.

At the foot are the letters RK. SK. *Deposited by Mr. Hayter.*

11. A similar cup of the same fabric, without cover or inscription. *Deposited by Mrs. Montgomery.*

From the quality of the ware and glaze it is possible that these two vessels are a continuation of the manufacture above mentioned. The initials of the maker in this instance appear to be I. G. Pipe-making was extensively carried on at Amesbury about this period by Gauntlett.

12. A curious object of similar ware in the form of a cocked hat. *Deposited by Rev. W. Blunt, Wallop House.*

- 13 to 25. Thirteen specimens of the Bellarmine or greybeard. *Deposited by Dr. Blackmore.*

This description of jug of mottled brown stone ware was in very general use during the 16th and 17th centuries. It was so named after the celebrated Cardinal Robert Bellarmine, who about that time made himself so conspicuous by his zealous opposition to the reformed religion. He was sent into the Low Countries to oppose the progress of the reformers, and he consequently received his share of hatred and derision from the Protestants. The controversy was maintained with great vigour, and its rancour was manifested by satirical allusions, like this of the bottle.

They are frequently alluded to in old plays. In "Epsom Wells," Clodpate, after pushing about the cups of true English ale, says, "My head begins to turn round; but let's into the house. 'Tis dark, we'll have one Bellarmine there, and then good night." This and similar passages, which seem to have frequently puzzled commentators, are thus easily explained.

It is presumed that the greater part, if not all, these greybeards were imported from Germany. The front is usually ornamented

with a device, or a coat of arms of some town in Holland or Germany ; but, from two examples now in the Museum, it would seem that they also came from France.

24 and 25. Have inscriptions containing initial letters, with the date, 1672 ; also the legend, JE . NE . MESTONE . PAS. The word "estonner" is the origin of our verb to stun, or dull the sense.

26. Stone ware jug, marked in blue R. W.

27. Jug, apparently of Spanish manufacture.

CASE G G.

The specimens in this Case, not otherwise indicated, are *deposited by Mr. Nightingale.*

1. A Majolica dish, subject, the departure of Æneas from Carthage. Painted by Francesco Durantino, about 1544.

The Italian pottery, generally known under the name of Majolica or Raffaele ware, was very extensively made during the fifteenth and sixteenth centuries ; works of very high artistic value were produced, the designs generally supplied by the great painters of that period.

The Italian Majolica is soft pottery, with a thick stanniferous glaze ; upon this ground the painting is made, and the whole fixed at one firing.

2. Oval dish of Palissy ware, subject, the sacrifice of Isaac. *Deposited by Mrs. Montgomery.*

Bernard Palissy is the glory of the French potters ; about the middle of the sixteenth century he succeeded, by incredible perseverance, in making an original kind of pottery, genuine specimens of which are excessively rare. He took for his models the fishes and reptiles of his country, which were moulded in high relief, and coloured. He also represented sacred and mythological subjects. The successors of Palissy continued the fabric for a long time, but contributed much to degenerate the art.

3. Early English agate ware.
4. Staffordshire white ware.
5. Leeds cream coloured ware.
6. Early Wedgwood.
7. Wedgwood.
8. Wedgwood plaques.
9. Chelsea porcelain, 1745.
10. Oriental porcelain decorated at Chelsea.
11. Chelsea.
12. Chelsea Derby.
13. Derby.
14. Early Worcester.
15. Worcester transfer printing.

16. Worcester.
17. Bristol.
18. Early French, St. Cloud.
19. Sèvres.
20. Menecy.
21. Chantilly.
22. Dresden.
23. Other German.

ORIENTAL.

24. Saucer of the Siouen-te period, date 1426 to 1435.
 25. Oriental, Chinese.
 26. Japan.
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Sculptures in Alabaster.

CASE P P.

Numerous tombs, effigies, and incised slabs of alabaster are to be found in most parts of England, more particularly in the Midland Counties; from this it would seem that an extensive and valuable branch of native industrial art, though now almost forgotten, once flourished in this kingdom. In most of our Cathedral churches ecclesiastical memorials are to be found sculptured in this fine material. Besides the productions of large dimensions, there exist various elaborate works of minor proportion, such as tablets or panels representing groups of small figures in high relief, and for the most part showing traces of rich colouring and gilding. They appear to have originally formed portions of tabernacle work, such as enriched the reredos of an altar or the shrine of a saint.

1. An alabaster tablet, found near Salisbury; representing the head of St. John the Baptist in a charger, St. Peter, and St. Thomas of Canterbury. (See woodcut.) *Deposited by Mrs. Sutton, of Laverstock.*

The head of St. John is represented with long hair and beard, the eyes closed in death, and apparently placed upon a circular object or disk. Above is a small naked figure, with the hands clasped, surrounded by an *aureola* of pointed-oval form, and supported by two angels, now much broken and defaced, who appear to bear towards heaven this representation of a disembodied spirit. Beneath is the upper part of a figure, with upraised hands, probably Christ, rising from the sepulchre. On the dexter side of the tablet appears St. Peter, with a key and book; on the other side is a mitred figure vested in a cope, holding an archiepiscopal cross-staff and a book. This probably represents St. Thomas, of Canterbury. The date of this curious tablet is the 15th century. Alabaster tablets, similar in dimensions, and in the general features of

design, have been noticed in several antiquarian works, and various explanations of their import have been offered. In all of these the head of St. John the Baptist, of large proportionate size, occupies the centre, and the summit of the whole design is filled with a representation of a soul conveyed to heaven by angels.

The Rev. E. Duke, of Lake, possesses one of these tablets similar to the present example, but with the addition of two figures in the back ground of St. Katherine and St. Helen.

Such is doubtless the true explanation of the constituent parts of these carvings, which have been much discussed, and greatly misinterpreted, but the reason or meaning of their being put together in this particular way still remains to be discovered.

2. Figure of St. George and the Dragon.
3. The Virgin and Child, with an ecclesiastical figure making a presentation.
- 4 to 6. Fragments of tabernacle work.

Nos. 2 to 6 *deposited by Mr. Nightingale.*

7. Portion of a crucifixion found at Stratford-sub-Castle, *presented by Mr. H. J. Swayne.*
8. Fragment of a female figure carrying a child, found in Catherine-street, Salisbury, *deposited by Mr. Lawrence.*
- 9 to 11. Three sculptures in alabaster, of the early part of the seventeenth century, representing some of the five senses, *deposited by Mr. Nightingale.*
12. A carved stone, with architectural features somewhat in the form of a temple, ornamented in low relief with shields of arms, diapered work, and crosses. It retains some traces of colour, and is apparently meant to contain some sacred deposit. *Brodie Coll.*
13. Four wooden tablets or roundels, curiously and richly emblazoned with moral precepts from Holy Writ. These tablets are supposed to have been used during the sixteenth century for handing round sweetmeats to guests at a social entertainment. *Deposited by the Rev. E. Duke.*
14. Tiles, ornamented with excellent examples of early transfer printing. This art, introduced about 1760, soon became popular ; it gave a great stimulus to several original manufactures, such as that of the Battersea enamels, &c.
15. Specimens of the Dutch tiles, on which are painted scriptural subjects, treated in the quaint, homely manner of the time.

Nos. 14 and 15 *deposited by Dr. Blackmore.*

Rubbings from Monumental Brasses.

Although the county of Wilts is not so rich in these monumental remains as some of the Eastern counties, still there are some interesting examples. The whole has been carefully collected and published with a good deal of explanatory matter by Mr. Edward Kite, of Devizes, a most praiseworthy work, under the title of "The Monumental Brasses of Wiltshire."

These memorials may be briefly described as plates of brass, or a mixed metal called *latten*, representing either in their outline, or by the lines engraved upon them the living forms of departed individuals. *All presented by Mr. John Brown, except otherwise described.*

1. The most important brass in the county, and one which may be taken as a type of the art generally, is that of Robert Wyvil, Bishop of Salisbury, who died in 1375, from the Cathedral of this city. This interesting and costly memorial may be regarded as one of the finest remaining examples of brass engraving executed in England.

The engraver has endeavoured to perpetuate two remarkable events which took place during his prelacy; the recovery of Sherborne Castle, and of Bere Chase, in Dorsetshire, both of which had long been alienated from the See. Any allusion of this kind to a particular circumstance in the history or actions of the deceased is very rarely met with. On the brass is seen a representation of the contested Castle, with the Bishop's champion standing at the gate of the outer ward, with buckler and the singular weapon the *uncinus* used in judicial conflict. In the gate of the first ward is a half-length effigy of the bishop, with uplifted hands, and clad in eucharistic vestments. Rising above the rest of the building is the keep or central tower, with its gateway and portcullis, and in the foreground of the fortress, the representation of a chase, with the figures of hares, in allusion to the recovery of the chase of Bere.

2. Figure of an ecclesiastic vested in a cope, date 1383, from St. Cross, near Winchester.
3. Rubbing from an incised slab of Purbeck marble, recently discovered in the chancel of Steeple Langford Church. *Presented by Mr. Nightingale.* The date of this interesting specimen of miniature effigy is probably early in the thirteenth century. The person portrayed appears in a long robe, open in front, his hands are raised and hold an escutcheon, which is perfectly plain. At the right side of the figure is a horn, suspended by a strap over the left shoulder, and this has been regarded as allusive probably to Waleran Venator, who held lands at Steeple Langford, Wilts, and was patron of the living at the early part of the thirteenth century.

The hunting horn is of comparatively uncommon occurrence on sepulchral memorials in England. These effigies of miniature dimensions are rare; a well-known example exists in the Cathedral of this city—that of the boy bishop; the story, however, needs confirmation. Diminutive effigies, in which the proportions are those of a man, are sometimes supposed to represent children, but probably without good reason.

4. Effigy in plate armour of Sir Anthony de Grey, from St. Albans Abbey.

5. Effigy of Sir Robert Demoke. Nos. 4 and 5 *presented by Mrs. Blunt, Wallop House.*
6. Inscription to Richard Venard. 1586.
7. Effigies of John Kent and wife. 1630. From St. John's Church, Devizes.
8. Edmund Geste, Bishop of Salisbury. 1576.
9. William Bulkely. 1568. From Fordingbridge Church.
10. John Coffe and wife. 1585. From Wilton Church.
11. Effigies from the brass of Sir Edward Baynton. 1578. From Bromham Church.

CASE F F.

1. A brank, or scold's-bridle. *Deposited by Mr. Jephson.*

This instrument, used for the punishment of scolds, was affixed to the head; an aperture being left for the nose, and a plate of metal placed in the mouth for the purpose of controlling the unruly member. A leading chain, by which the offender was led, is usually attached in front, immediately over the nose. A similar example to the present is preserved in the Ashmolean Museum at Oxford.

The origin of this grotesque implement of punishment, as well as the period of its earliest use in Great Britain, remain in considerable obscurity. No example of the scold's bridle has been noticed of greater antiquity than that preserved in the church of Walton-on-Thames, Surrey, which bears the date 1633, with the distich—

"Chester presents Walton with a Bridle,
To curb women's tongues that talk to Idle."

Tradition alleges that it was given for the use of that parish by a neighbouring gentleman who lost an estate, through the indiscreet babbling of a mischievous woman to the kinsman from whom he had considerable expectations.

It seems never to have been a legal punishment. The punishment for scolds was, and is still by the laws of England, the Cucking-stool. The locality in which this peculiar punishment was inflicted in Salisbury was at the open part of the New Canal, in Milford-street, a little to the east of the Red Lion. The site is indicated in an old map as "Cage and Ducking-stool."

It has been well observed that "these examples of ancient manners are worthy the attention of all who study what are frequently termed the good old times, and who may, by that study, have to be thankful that they did not live in them."

2. A truly royal example of the leathern black-jack or bombart, bearing the date 1646, surmounted by a crown, 24 inches high. *Deposited by the Rev. W. Blunt, Wallop House.*

These leather bottles, much used in the middle ages, appear to have been a peculiar branch of English industry. The upper edge of the vessel is squeezed into a slight lip in front, and the stout loop handle at the back is firmly stiched on either edge, thus making it strong, hard, and enduring as oak, and seeming to justify the old and oft-repeated adage, that "there is nothing like leather."

At the beginning of the sixteenth century wooden trenchers and pots of earth were commonly used at the tables of even the higher classes. The former were not easily to be broken; but the case was different with the earthen pots, which, from their fragile nature, were, it seems, a continued source of expense. In the Household Book of the Duke of Northumberland in 1512 it was, therefore, ordered that, "whereas *erthyn potts* be bought, that *ledder potts* be bought for them for serving meallys in my lord's hous."

In the time of Queen Elizabeth, leathern bottles were in common use, as is seen by the following quotation from a Lansdown MS. "Leathern cups, small jacks, we have in many ale-houses of the city and suburbs, tipt with the silver, besides the great black-jack and bombarts at the court, which, when the Frenchman first saw, they reported at their return into their country, that the Englishmen used to drink out of their boots."

3 and 4. Two small specimens of the leather jack, one is inscribed R.S.M., 1658. *Deposited by Mr. E. T. Stevens.*

A smaller measure called the jill or gill, is described in Dyche's Dictionary, 1744, as "a measure containing a quarter of a pint, much used by wine drinkers in a morning." The nursery rhyme concerning Jack and Jill probably refers to these cups.

5 and 6. Two plates of pewter, formerly belonging to the Joiners' Company at Salisbury, inscribed Henry Lake, Thomas Minty, Wardens, 1688; Jefery Barnes, Chamberlain. *Presented by Mr. C. Wyndham.*

7. A brass-bound wooden measure, inscribed "New Sarum Standard Pint." *Presented by the Archæological Institute.*

Seals.

The use of seals as a legal formality was introduced into this country by the Normans. It is a remarkable circumstance, that previous to the reign of Edward the Confessor, the Anglo-Saxon kings contented themselves with making a simple cross to authenticate their charters: the practice of sealing having prevailed among the Franks from the time of Clovis. There are, however, a few examples of the practice among the Anglo-Saxons, but they are excessively rare. One of the most remarkable is that of the seal of the Abbey of Wilton, one of the oldest monastic seals in existence.

After the Conquest seals became the component parts of legal documents, and it is to the legal importance which attached to them, that we owe the preservation of many thousands of impressions, dating from the eleventh to the end of the fifteenth century. As land became more and more sub-divided, and wealth generally more distributed, the use of seals was diffused among all classes legally competent to acquire or aliene property. Not only do we find the great or state seals of England, as well as of bodies, both ecclesiastical and secular, but innumerable personal seals. The introduction of heraldic insignia at the close of the twelfth century had the natural effect of producing a large class of seals exclusively armorial in character. At the commencement of the thirteenth century the legal necessity for these instruments was thoroughly established.

The impulse given to all branches of the arts soon after the accession of Henry III., apparent in all the monuments of that reign, is nowhere more conspicuous than in the design and execution of seals; and these objects continue to present features of considerable beauty from that time until the year 1400. Ample evidence of this may be seen in the fine collection of casts presented to the Museum by Mr. W. Osmond, jun.

After this time personal seals gradually decline in importance, as to size, style of design, and execution. Thenceforth many represent simply merchant-marks rudely executed, monograms, a letter surmounted by a coronet, or the name of the individual.

CASE N N.

1. Copy in gutta percha of an impression of the original seal of the Abbey of Wilton (see woodcut). It is of circular form, and

bears an effigy of an Abbess of the Monastery, who is thus described on the face of the seal itself, SIGILL. EADGYDE. REGAL. ADELPHIE. She appears in the habit of her order, the Benedictine, and holds in her left hand what seems to be a book, probably intended for the gospels, whilst the right is lifted as in the act of benediction.

The figure probably represents Edith, daughter of King Eadgar, who was a great benefactor to the monastery of Wilton; she entered the monastery as a nun, and was afterwards canonized, and became the patron saint of the abbey.

A curious metrical composition, on the lives and actions of the founders and benefactors of Wilton Abbey from the time of King Egbert, is still extant; in this are given full legendary accounts of her life and miraculous powers after death. She continued to be honoured long after her decease. In many of the calendars prefixed to the English Service Books, and especially those belonging to Salisbury, her name is inserted on the 17th September. In the Sarum Missal there is also an office appropriated to her.

This seal of Wilton Abbey was used in the time of King Eadgar about 974.

2. Seal of the Hospital of St. Giles, Wilton. Founded by Adelia, Queen of Henry I.
3. Common seal of the borough of Wilton.
4. Personal seal of the Mayor of Wilton.

This is a curious illustration of the complete change of subject in the process of re-engraving the seal. In an oval seal attached to a document, bearing date 1348, the subject is the Coronation of the Virgin, a not uncommon device at that period. In 1416 the seal is changed, being somewhat larger, and the subject much less distinctly given. At the Heralds' Visitation, in 1623, the two figures had become "Saxon Kings in Gothic niches," and were so allowed by the Herald.

5. Seal of Joan de Westone, found at Wilton.
7. Seal of the Guild of Weavers, Wilton, "Weave trust with truth."

Nos. 1 to 6. *Presented by Mr. Nightingale.*

7. Seal with figure of St. Margaret, having a dragon under her feet, and holding a spear surmounted by a cross, inscribed, SAVNTA MARRGORETA.
8. The counter seal of some Priory of St. John. It bears the effigy of St. John the Baptist, with camel's hair dress, and is inscribed CONTRA S'PRIORIS.
9. Seal of Walter Predie, device, a fish in water surmounted by foliage, inscribed, s'WALTERI PREDIE.
10. Four ordinary seals, one bearing the Agnus Dei.

Nos. 7 to 10 *formed part of the Brodie Coll.*

11. Oval seal, bearing a castle, and the letters L.S.

12. Oval seal of earlier date, device, a bird and branch.
Nos. 11 and 12. *Presented by Mr. Hicks.*
13. Impression of a mediæval seal, set with an antique intaglio.

CASE M M.

The whole collection of seals in this Case *presented to the Museum and catalogued by Mr. W. Osmond, jun.*

The seal of the Church for Petitions and Causes of the same era as the foundation of Salisbury Cathedral.

1. The first seal of the City of New Sarum. "Sigill. Nove Civitatis Sarisburie," about 1220.
2. "The Citie of New Sarum, 1658."
3. "Civitas Nove Sarum."
4. New Sarum. "Mayor, Aldermen, and Burgesses of New Sarum, 1836."
5. Mayor of Sarum. "Sigillum Maioris Sarum."
6. Mayor of Sarum. "Sigillum Maioris Nove Sarum."
7. Trinity Hospital, Sarum. "Sigillum Domus Sancte Trinitatis Sarum."
8. Hospital of the Trinity and St. Thomas the Martyr, Sarum. "Sigillu sancte Trinitatis sancti que Thomas Marteris."
9. St. Nicholas Hospital, Sarum. "Sigill. Domus Hospitalis beati Nicholai Sarum."
10. College of St. Edmund, Sarum. "S. cõe collegij sci Edmundi Nove Sari."

11. Weavers of Sarum. "Sigillum Textorum Civitatis Novæ Sarum."
12. Tailors of Sarum.
13. Herbert Poore, Bishop of Old Sarum, A.D. 1194.
14. Counter seal of ditto.
15. Richard Poore, Bishop and Founder of Salisbury Cathedral, A.D. 1217. "Ricardus Dei Gratia Saresberiensis Episcopus."
16. Counter seal of ditto. "Ave Maria gracia plena Dominus tecum."
17. Robert Bingham, Bishop of Salisbury, 1228. Robertus Dei Gratia Sarisburiensis Episcopus."
18. Counter seal of ditto.
19. Walter de la Wyle, Bishop of Salisbury, 1263. "Walterus Di Gra Salisburiensis Episcopus."
20. Robert de Wickhampton, Bishop of Salisbury, 1270. "Robertus Dei gratia Sarisbiriens Episcopus."
21. Robert Wyvil, Bishop of Salisbury, 1329. "S' Roberti Dei Gracia Epi Saresbiriensi."
22. Richard Metford, Bishop of Salisbury, 1395. "S' ad causas Ricardi Dei gratia Saru Episcopi."
23. Prebend of Yetminster. "Sigill. Jurisnis Prebend de Yetminster."
24. Prebend of Highworth. "Sigill. Jurisnis Prebend de Highworth."
25. Prebend of Burbage. "Sigill. Jurisnis Prebend de Burbagh."
26. "Prebend of Netheravon, 1720."
27. Archdeacon of Wilts. "Sigill. Archidiaconi Wilts, Anno Domini 1582."
28. Dean of Sarum. "Sigillum officialitatis Jurisdiaconis Decanatus Sarum."
29. "The seal of Matthew Marsh, B.D., Chancellor of the Diocese of Sarum."
30. J. R. Hope, Chancellor of the Diocese of Sarum. "Sigillu. Jacobi Roberti Hope, Cæcellar. Dioces. Sarisbur."
31. "James Stirling Samber, Subdean of Sarum, 1759."
32. Subdean of Sarum.
33. Treasurer of Salisbury Cathedral, 1679. "Sigillum Thomæ Jeames Thesaurii."
34. Archdeacon of Sarum. "Sigillum Domini Archidiaconi Sarum, 1710."
35. Peculiar of Gillingham. "Sigillum officii Peculiaris de Gyllingham, 1664."
36. Prebend of Wilsford and Woodford. "Sigill. Jo. Mosely, Prebend de Wilsford et Wodford."
37. Dean and Chapter of Sarum. "Sigillum Comminari Decani et Capitum Sarum, 1608."
38. Vicars Choral of Salisbury Cathedral. "S' commune Vic' Prior Eccl'e Saresburiens'."
39. Vicars Choral of Salisbury Cathedral. "Sig. Vic. Chor. Eccl. Sarum, 1747."

40. Salisbury Cathedral. "Sigill' sancte Marie Saresb'iensis Ecc'l'ie."
41. Dean of Sarum. "Sigillu. officii Decani Sarum."
42. Priory of Ivy Church, formerly called "Ederose." "Sigillum Comue Prioritatus Beatæ Marie de Ederose."
43. Chancellor and University of Oxford. "Sigill' Cancellarii et Universitatis Oxoniens'."
44. Carmelite Friars of St. Marie's, Oxford. "S. comune Fratru ordiis Be. Marie de Carmelo, Oxonie."
45. All Souls' College, Oxford. "Sigillum commune Collegii animarum on̄m fidelium defunctorum de Oxoniae."
46. Queen's College, Oxford, 1584. "S' prep' et Schol' Col' Regin' aca' de Oxon' stabilit' per Regin' Elizab'."
47. Oriel College, Oxford. "S' commune Domus e' Collegii Beate Marie Oxonie."
48. New College, Oxford. "Sigillum comune collegii scē mare of Wynchestre in Oxonia."
49. Exeter College, Oxford. "S. Rectoris et Scholarium de Stapledon Hal. Oxon."
50. Brazen-nose College, Oxford. "Sigillu coūe colegii regalis de Brazen-nose in Oxonia."
51. Lincoln College, Oxford. "Sigillū collegii Lyncoline in Oxonia ad causas."
52. Queen's College, Oxford. "S' comune Prepositi et scholarīū aule regine de Oxonia."
53. Queen's College, Cambridge. "Sigillū coē prepoliti scolarium collegii regalis bē Marie scī Nicholai de Cantebriḡii."
54. Clare Hall, Cambridge.
55. Eton College. "Sigillu. commune prepoliti et collegii regalis Beate Marie de Eton."
56. Winchester College. "Sig. coē collegii vocati scē Marie Collegie of Wynchestre ppē Wynton."
57. Counterseal of ditto.
58. Dean and Canons of Windsor. "Sigil. officialitatis Ecclæ Windsor."
59. Precentor of Westbury. "Sigill. Precentor de Westbury, 1720."
60. Dean and Chapter of Wells. "Sigillum Decani et Capitli Well' ad causas."
61. Bishop of Llandaff, 1399. "Sigillum Thome Peverell Ep̄ Landaneii."
62. Dean and Chapter of Hereford. "Sigillū Decani et Capitum Ecclīe Cathedralis Herefordiens'."
63. Monkton Farleigh Priory.
64. Counterseal of ditto.
65. Rural Deanery of Wylve. "Sigillum Decani decanatus de Wylve."
66. Chapter of Wolverhampton. "Sigillū coē capitati de Wolverhampton."
67. Found in Clarendon Forest. "S' Falcon' Magr'i S'ci Antonii."

68. Priory of Monk Sherborne, Hants.
69. Bradenstoke Priory, Wilts. "Sigill' Eccl'ie Beatae Marie de Bradenestokæ."
70. Heytesbury Hospital, Wilts. "Sigillum Hospitalis de Haytesberi."
71. Heytesbury. "Sigill. Dom.' Elimo Walt. & Rob. D. D. Hung. & de Heitsberi."
72. Lampeter College, Wales.
73. Priory of Maiden Bradly, Wilts. "Sigillum Conventies see Marie de Bradeley."
74. Stanley Abbey.
75. Ditto.
76. Southwick Priory, Isle of Wight. "Sit pro Suwika mediatrix virgo pudicæ et pax angelica sit nobis semper amica."
77. St. Augustin's Monastery, York. "S. Thome Dei gratia abbatis monastii sci Augustin eboratii."
78. Carmelites of Lynn, Norfolk.
79. Dean and Chapter of Exeter.
80. Collingham Priory.
81. Counterseal of ditto.
82. John Thoresbury, Archbishop of York, 1354.
83. Alexander Neville, Archbishop of York, 1374.
84. Bishop of Colombo, 1845.
85. Richard I., King of England.
86. Counterseal of ditto.
87. Henry IV., King of England.
88. Counterseal of ditto.
89. James I., ditto.
90. Counterseal of ditto.
91. Henrietta Maria, Queen of Charles I.
92. Counterseal of ditto.
93. Reginald, Abbot of Waltham.
94. Prior of Exeter. "S. Iris Thome Dene, prior Exonie," 1428.
95. "S' Comune Ville, xpi Ecclie de Twinham."
96. "Caput Domini Edwardi Regis Anglie."
97. Burgesses of Stanford. "Staunford Burgenses virgo fundunt tibi Preces."
98. "St. John of Waterford and Cork," found at Bradford, Wilts.
99. Town of Portsmouth, about 1310. "Portum virgo juva Nicholæ fove roge Thomæ."
100. Richard de Bury, Bishop of Durham, 1333. "S. Ricardi Dei Gra. Dunelmensis Epi."
101. St. Nicholas Hospital, Sarum, 1610.
102. Charles the Ninth of France.
103. Kingswood Priory, Wilts, founded 1139.
104. Edyngton Priory, Wilts. "S' Commune Prioris Conventus Edyngton."
105. Monkton Farleigh Priory, Wilts.
106. Prior of Monkton Farleigh.

- 107. Breamore Priory, Hants.
- 108. Counterseal of ditto.
- 109. Edward I. for acknowledgement of debts in the city of Winchester. "S' Edw' Reg' Angl' ad' recogn' debitor' apud Winton."
- 110. Lower Canada. "Sigill. Prov. Canadæ inferioris."
- 111. Found on the grounds of Wade Browne, Esq., at Monkton Farleigh. "Caput Marie Magdalene."
- 112. Found at Weymouth. "Glas. Glassen Bos."
- 113. Collector of 15th and 10ths, found in Gloucestershire.
- 114. Court of Exchequer.
- 115. University of Edinburgh. "Silligum com. Universit. Edinb., sive coll. Jac. vi. Scot. Reg."
- 116. Robert Neville, Bishop of Salisbury, 1427.
- 117. Mayor of Wilton. "S' Maioritatis Burg' de Wilton."
- 118. Town of Wooton Bassett. "Minor Sigillum Wootan Bassett als' Wootan Vetus."
- 119. Town of Romsey, Hants. "Sigillum de Romsey infra, 1578."
- 120. "Borough of Romsey, 1836."
- 121. Corporation of Westbury. "Sigillum Maioris et Burgen de Westburie."
- 122. Mayor and Corporation of Calne.
- 123. "Byredon, Comitatus Berks."
- 124. Mayor of Winchester. "Sigillum Maioratus Wintonie."
- 125. Mayor of Marlborough. "Sigillum Maioris Burgi de Marleberg."
- 126. Mayor of Devizes. "Sigill. Officii Maior Burgi Dne. Reg. Divisar."
- 127. Town of Ashburton, Devon. "Sigillum Burgi de Ayshberton."
- 128. City of Chichester. "Sigillum Civium Cicestrie."
- 129. "The seale of the Wardens of the Hospitall of St. Maries in Chichester."
- 130. Mayor of Portsmouth. "S' Prepositi de Portesmuth."
- 131. "Mayor, Aldermen, and Burgesses of the City and Borough of Winchester. Jan., 1836."
- 132. Counter Seal of ditto.
- 133. Mayor of Melcomb Regis. "Sigillum Maioratus Vill' D. Melcombe Reg."
- 134. Town of Melcomb Regis. "Sigillum Comunie de Melcoma."
- 135. Weymouth.
- 136. "Waymouth and Melcombe Regis."
- 137. Admiral of Weymouth. "Sigillum Admiralis de Waymouth et Melcombe Regis."
- 138. "Waymouth and Melcomb Regis."
- 139. Borough of Banbury, Oxon. "Sigillum Burgi de Banburie."
- 140. Borough of Dorchester, Dorset. "S. Communitatis Burgi Dorcestrie."
- 141. Borough of Dorchester, Dorset. "Sigillum Balliorum et Burgensium Burgi de Dorchester in comitatu, Dorset."

142. Ditto. "Sigillum Balliorum Dorcestre."
143. "Ball' de Dorchester."
144. "Sigillum Johanis Uvedale," 1430 or 1440.
145. "S' Johanna Gacelyn." From her Charter to Stanley Abbey.
146. Pope Boniface IX. "Bonifatius P.~P. VIII."
147. Counterseal of ditto. "S.P.A. S.P.E." (Sanctus Paulus, Sanctus Petrus.)
148. John Hertwell, Lord of Preston, Wilts. "S. Johan' Hertwell Dn's de Preston."
149. "Sigillu Johannis Pynnock."
150. "S' Thome Palet."
151. "Sigillum Johannis de Woodforde."
152. Prebend of Uffculmb in Salisbury Cathedral. "Sigill. Prebend de Uffculmb in Ecclia. Cath. Sarum."
153. Robert Benson, Recorder of New Sarum.
154. William, Abbot of Malmesbury.

Tobacco Pipes.

CASE N N.

From the large number of examples 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 small pipes is or was a common article of faith among the peasantry in England, Scotland, and Ireland; in the latter they were held to belong to the Cluricaumes, a mischievous fairy-demon, and when discovered they were broken, or otherwise treated with indignity, as a kind of retort for the tricks which their supposed owners had played off. Many pipes of this form were found in the parish of Old Swinford, Worcestershire: the country folks 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.

From the occasional juxta-position of tobacco-pipes with objects of more remote antiquity, it has been held by some writers, without sufficient reason, that they are to be assigned to a more ancient period than the introduction of tobacco in the reign of Elizabeth.

Fuller, in his "Worthies of Wiltshire," says "The best tobacco-pipes for shape and colour (as curiously sized) are made at Amesbury, in this county. *Gauntlett pipes*, having that mark at their *heel*, are the best. They may be called chimneys portable in pockets. At the first bringing over of tobacco, pipes were made of silver and other metalls." He then goes on to relate the ingenious

defence of a maker who was sued for pirating the mark, and alleged that the thumb of his gauntlet stood differently to the plaintiff's, and the same hand given dexter or sinister in heraldry is a sufficient difference. Aubrey says that "Amesbury is famous for the best tobacco-pipes in England, the clay of which they are made is excellent, and is brought from Chittern." The tobacco-pipe makers were incorporated in 1619; at a later period they petitioned in vain to become a livery company of the City of London.

1 to 36. Pipes of the ordinary type, part of the Brodie collection; some are marked with various initials, and seven bear the open hand or gauntlet.

A collection of 46 pipes, for the most part discovered during the drainage operations, generally of small size. There is a fine example of the Amesbury manufacture, consisting of a large bowl, inscribed "Amesbury Pipes, 1698," with an open hand, and the initials G. B.; also one of enormous size, dug up in a garden at Wigan, in 1769. *Deposited by Mr. E. T. Stevens.*

Two ivory rappoirs, *deposited by Mr. E. T. Stevens*, date the end of the 17th century: one French, on which is carved a half-length figure of a king of France, surmounted by the crown.

Another, having the figure of a female holding a distaff.

The grater is wanting in each instance.

The snuff-takers of the 17th century reduced their tobacco to a rough powder by grating, which was then known as *tabac en poudre* or *tabac râpé* (the origin of our name rappee, for a kind of snuff long after it has ceased to bear its legitimate sense of *grated tobacco*). Every snuff taker carried his grater or rappoir, and when he needed enough to fill his box at once, he rasped a sufficient quantity, and tilted the powder to the broad end of the rappoir, but if he only needed a pinch it was shaken out at the small end upon the back of the hand, and so taken.

On the wall of the Ante Museum near the entrance is suspended a horn, with its original brass mountings and chain, *deposited by the Town Council of Salisbury.*

This is one of the few relics preserved from the destruction of

the old Council House, which was burnt down in 1780, It was formerly used by the night-watch, in case of fire, or other cause of alarm in the city. On it are engraved the names of George Clemens and Peter Phelps, the arms of the city, and the date 1675 ; also, Thomas Shergold, Thomas Wavsbrough, head constables.

Over the fire-place in the Circular Room is hung a drawing in water colours of the old Guildhall, Salisbury, *deposited by Mr. E. T. Stevens.*

This ancient building stood behind the old Council House, occu-

pying, in fact, the precise spot where the present pile was subsequently erected. Besides the Guildhall, it comprised also the Debtors' Court, and other offices of public convenience. It was saved from the fire of 1780, but removed a few years afterwards.

Birds.

Natural history is not only a most fascinating and delightful study, but to the thoughtful student it teems with instruction. Birds and insects, from the attractive colours with which they are tintured, among other causes, are eagerly sought by the young collector ; they are the boy's first hobby. But a taste for natural history once acquired leads him onward to crave a nearer insight into all the wondrous works of nature, than which nothing can be more elevating, nothing more humbling, paradoxical as it may seem.

The present catalogue is merely that of birds in the collection ; these represent British birds only.

Birds are subdivided in accordance with marked characteristics, and it may be well to point out in general terms what system of classification is adopted.

In the first place, then, a convenient rather than scientific division of all birds was made by the older ornithologists by arranging them under two great classes, viz., "Land Birds" and "Water Birds." These classes were subdivided into various orders. This system has been followed in the present catalogue; although not strictly scientific, yet from its simplicity is very useful in classifying British Birds.

The Land Birds are divided into three orders—1st. Birds of Prey (Raptores); 2nd. Perchers (Insessores); 3rd. Ground Birds (Rassores). These are subdivided into tribes and families, as follows:—

Order.	Tribe.	Family.
1. Birds of prey (Raptores)		<ul style="list-style-type: none"> Vultures—Vulturidæ Falcons—Falconidæ Owls—Strigidæ
	<ul style="list-style-type: none"> Tooth billed (Dentirostres) 	<ul style="list-style-type: none"> Butcher birds—Laniadæ Flycatchers—Muscicapidæ Thrushes—Merulidæ Warblers—Sylviadæ Titmice—Paridæ Waxwings—Ampelidæ Wagtails—Motacillidæ Pipits—Anthidæ
2. Perchers (Insessores)	<ul style="list-style-type: none"> Cone billed (Conirostres) Climbers (Scansores) Wide billed (Fissirostres) 	<ul style="list-style-type: none"> Larks—Alaudidæ Buntings—Emberizidæ Finches—Fringillidæ Starlings—Sturnidæ Crows—Corvidæ Woodpeckers—Picidæ Creepers—Certhiadæ Cuckoos—Cuculidæ Bee-eaters—Meropidæ Kingfishers—Halcyonidæ Swallows—Hirundinidæ Goatsuckers—Caprimulgidæ
3. Ground birds (Rassores)		<ul style="list-style-type: none"> Pigeons—Columbidæ Pheasants—Phasianidæ Grouse—Tetraonidæ Bustards—Struthionidæ

Having thus disposed of the land birds proper, we pass to the fourth order.

4. Waders (Grallatores)		<ul style="list-style-type: none"> Plovers—Charadriidæ Cranes—Gruidæ Herons—Ardeidæ Snipes—Scolopacidæ Rails—Rallidæ Coots—Lobipedæ
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And lastly, we come to the fifth order, comprising the true water birds.

Order.	Tribe.	Family.
5. Swimmers (Natatores)		Ducks—Anatidæ Divers—Colymbidæ Auks—Alcadæ Cormorants—Pelecanidæ Gulls—Laridæ

Salisbury being an inland city it has been thought desirable to exhibit land birds chiefly. The marshy districts in our valleys, however, claim to send representatives of the waders, whilst stormy weather on the coast drives occasional examples of the natatores into our neighbourhood, as noticed in the accompanying catalogue. When additional room can be spared, it is, however, contemplated to include the water birds in the collection, and perhaps to place before the visitors to the Museum a complete series of the British birds.

The Bustard is a bird of so much local interest that it has been thought desirable to give a brief sketch of its habits, and a few notices of its more recent appearance in this neighbourhood.

The Great Bustard (*Otis tarda*) is the largest of British land birds, and in former years, having had its favourite haunts in our own neighbourhood, gives it the stronger claim to our attention; a full-grown male, in good condition, will weigh from twenty-five to twenty-eight pounds, and will measure forty-five inches in length; the female is not so large, seldom exceeding thirty-six inches in length. The adult male is distinguished from the female in being furnished with a tuft or plume of feathers, about seven inches long, growing laterally from the chin, passing backwards and downwards on each side; it is also said to possess a remarkable anatomical peculiarity, which is a gular pouch or bag, between the under side of the tongue and the lower mandible of the bill, capable of holding several pints of water, which was supposed to exist in order to supply the bird with drink in dry places when distant from water; more recent observations, however, tend to prove that this theory is not borne out by facts. The bustard usually lays two eggs, they are about the size of those of a turkey, of a pale olive brown colour, with spots of a darker hue; it makes its nest on the ground by scratching a hole in the earth; its food consists chiefly of herbage and grain, it is particularly fond of green rye and barley, and devours the stalks as well as the ears; it feeds also on insects, as well as on reptiles and the smaller mammalia. It is a very shy bird and difficult to approach, so much so, that sportsmen frequently had recourse to stratagem in order to get within gun-shot; it is nevertheless exceedingly bold and pugnacious, and has been known to attack even man; it is polygamous, the males separate from the females at the period of incubation, but they assemble in flocks as the autumn approaches, and during severe

weather are often compelled to seek shelter in the more enclosed districts from the plains and downs where they usually range.

A favourite sport of our forefathers seems to have been to hunt the bustard with greyhounds, probably trained for the purpose. A painting, of which this is the subject, may be seen at Wilton House, the seat of the Earl of Pembroke. As an article of food the flesh of the bustard was highly esteemed, and on this account, combined with its rarity, it always commanded a high price. On the 10th of October, 1555, the third year of Phillip and Mary, amongst a list of game provided at a feast in the Inner Temple, bustards were quoted as costing no less than ten shillings each, a large sum at that period. It is also recorded that it was the custom many years ago for the mayor of Salisbury to have a bustard as a prominent dish at the annual inauguration feast.

The great bustard is found in France, Germany, Russia, Greece, Italy, Dalmatia, the Levant, and is also numerous in Spain.

Wiltshire is always allowed to have been the stronghold of the bustard, and our extensive downs, especially Salisbury Plain were known to be its favourite haunts, but as soon as cultivation increased, and the downs began to be broken up, the waste lands to be reclaimed and drained, and the system of hoeing the corn became general, the bustard had no alternative but to seek for other more congenial quarters. Norfolk and Yorkshire are also noted as having possessed favourite haunts of this noble birds; the last killed in the former county was shot at Lexham, towards the end of the year 1838, whilst as recently as 1849, Mr. G. R. Waterhouse, the well-known naturalist of the British Museum, when returning to Salisbury with a party of friends from a visit to Stonehenge, saw one which from its size he thought was a female, it was seen several times on the wing by the party during an interval of eight or ten minutes, and flew with a heavy, though tolerably rapid flight, about twenty feet from the ground, was very wild, and would not suffer itself to be approached. The last British bustard on record was captured by a little boy in January, 1856, on the borders of Wiltshire, near Hungerford; he found it with its leg broken by the side of a field of turnips, as he was taking his brother's dinner to a lone farm, about a mile off. As the bird was fluttering he caught hold of one of its wings and dragged it along nearly a quarter of a mile till he reached the farm, when he took it into the barn, where the men were assembled at their dinner, and one of them killed it by breaking its neck. The little boy then bore it home in triumph to his mother. It afterwards passed into the hands of Mr. W. H. Rowland, of Hungerford, by whom it was sent to London to be preserved, and afterwards was added to the fine collection of the Rev. G. Marsh, at Sutton Benger. Some of the older inhabitants of Salisbury can still remember the bustard which was kept for several months at the Red Lion Hotel, in this city, by Mrs. Steedman, to whom it was given by a traveller who captured it as he was on his way from Devizes to Salisbury.

Mrs. Steedman valued this bird very highly, and refused an offer of ten guineas for it, but, like many pets, it met with an untimely end, being killed by a pointer which had got into the room in which it was kept,

CASE J J.

All deposited by Mr. Henry Blackmore.

A. BIRDS OF PREY (RAPTORES).

Abbreviations used :—m, male ; f, female ; a, adult ; y, young ; w.p., winter plumage ; s.p., summer plumage.

1 Gyr Falcon <i>m.</i>	...	Falco gyrfalco	...	
2 Peregrine ditto <i>f.</i>	...	Falco peregrinus	...	killed at North Tedworth, Wilts, July, 1860

The Gyr and Peregrine were the two Falcons chiefly used for the royal sport of Hawking. From Domesday Book we learn that a Gyr Falcon was valued at ten pounds, a sum almost equalling three hundred pounds in our day, and at so late a period as the reign of James I., Sir Thomas Monson is said to have given a thousand pounds for a cast (couple) of these Hawks. The Gyr Falcon, from its superior strength and courage, was preferred to the Peregrine, and it was procured at vast expense from the North of Europe. The Peregrine Falcon was obtained in our own country, and various legislative enactments were in force to secure it from destruction. From its docility the Peregrine was more easily trained by the falconer ; the admirable training of a good falcon has been thus described.

“In the air my noble generous Falcon ascends to such a height as the dull eyes of beasts and fish are not able to reach to : their bodies are too gross for such elevation ; but from which height I can make her to descend by a word from my mouth, which she both knows and obeys, to accept meat from my hand, to own me for her master, to go home with me, and be willing the next day to afford me the like recreation.”

				Where Killed.
3 Hobby ditto <i>m.</i>	...	Falco subuteo	...	Clarendon, Wilts, 1856
4 Red-footed ditto <i>m.</i>	...	Falco rufipes	...	
5 Ditto <i>f.</i>	...	Ditto	...	
6 Merlin ditto <i>f.</i>	...	Falco æsalon	...	Near Stromness, Orkney,
7 Ditto <i>m.</i>	...	Ditto	...	Ditto, 1863 [1862]
8 Kestrel ditto <i>m.</i>	...	Falco tinnunculus	...	Near Salisbury, 1861
9 Ditto <i>f.</i>	...	Ditto	...	Grovely, Wilts, 1853
10 Goshawk <i>a.m.</i>	...	Astur palumbarius	...	
11 Sparrow Hawk <i>m.</i>	...	Accipiter nisus	...	Winterslow, Oct., 1863
12 Ditto <i>f.</i>	...	Ditto	...	Groveley, 1853
13 Kite	...	Milvus vulgaris	...	
14 Swallow-tailed Kite	...	Nauclerus furcatus	...	
15 Common Buzzard	..	Buteo vulgaris	...	Brook, New Forest, 1854
16 Rough-legged ditto	..	Buteo lagopus	...	
17 Honey ditto	...	Pernis apivorus	...	
18 Marsh Harrier	...	Circus æruginosus	...	
19 Hen ditto <i>f.</i>	...	Circus cyaneus	...	

		Where Killed.
20 Montagu's ditto <i>m.</i> ...	<i>Circus Montagui</i> ...	This pair of birds was killed in Cambridgeshire
21 Ditto <i>f.</i> ...	<i>Ditto</i> ...	
22 Ditto <i>a.m.</i> ...	<i>Ditto</i> ...	
23 Eagle Owl ...	<i>Bubo maximus</i> ...	
24 Snowy ditto ...	<i>Surnia nyctea</i> ...	
25 Hawk ditto ...	<i>Surnia funerea</i> ...	
26 Long-eared ditto ...	<i>Otus vulgaris</i> ...	Red Hone, near Devizes, 1863
27 Short-eared ditto ...	<i>Otus brachyotos</i> ...	
28 White or Barn ditto...	<i>Strix flammea</i> ...	
29 Tawny ditto ...	<i>Syrnium stridula</i> ...	Near Salisbury, 1860
30 Scops-eared ditto <i>m.</i> ...	<i>Scops aldrovandi</i> ...	
31 Little ditto ...	<i>Noctua passerina</i> ...	
32 Tengmalm's ditto <i>m.</i> ...	<i>Noctua Tengmalmi</i> ...	Near Genoa, 1860

CASE K K.

Deposited by Mr. Henry Blackmore.

B. PERCHERS (INSESSORES).

1 Red-backed Shrike <i>m.</i> ...	<i>Lanius collurio</i> ...	Near Devizes, 1863
2 Great Gray ditto <i>a.m.</i> ...	<i>Lanius excubitor</i> ...	May, 1863
3 Woodchat ditto ...	<i>Lanius rutilus</i> ...	May, 1863
4 Spotted Fly Catcher...	<i>Muscicapa gricola</i> ...	
5 Common Dipper ...	<i>Cinclus aquaticus</i> ...	Near Stromness, 1862
6 Missel Thrush ...	<i>Turdus viscivorus</i> ...	Stratford-sub-Castle, 1853
7 Fieldfare ...	<i>Turdus pilaris</i> ...	Near Devizes, 1863
8 Song Thrush ...	<i>Turdus musicus</i> ...	Harnham, Wilts, 1853
9 Redwing ...	<i>Turdus iliacus</i> ...	Ditto
10 Blackbird <i>m.</i> ...	<i>Turdus merula</i> ...	Ditto
11 Ditto <i>f.</i> ...	<i>Ditto</i> ...	
12 Ring Ouzel <i>m.</i> ...	<i>Turdus torquatus</i> ...	Isle of Sheppey, 1861
13 Golden Oriole <i>a.m.</i> ...	<i>Oriolus galbula</i> ...	
14 Rock Thrush <i>m.</i> ...	<i>Petrocincla saxatilis</i> ...	
15 Hedge Accentor ...	<i>Accentor modularis</i> ...	In Salisbury, 1863
16 Redbreast ...	<i>Erythaca rubecula</i> ...	Near London, 1863
17 Blue-throated Warbler <i>m</i> ...	<i>Phœnicura suecica</i> ...	
18 Redstart ...	<i>Phœnicura ruticilla</i> ...	Bemerton, Wilts, 1853
19 Stonechat ...	<i>Saxicola rubicola</i> ...	Ditto
20 Black Redstart ...	<i>Phœnicura titiys</i> ...	
21 Wheatear <i>m.</i> ...	<i>Saxicola œnanthe</i> ...	Ditto
22 Garden Warbler ...	<i>Curruca hortensis</i> ...	Near London, 1863
23 Common Whitethroat ...	<i>Curruca cinerea</i> ...	
24 Willow Warbler ...	<i>Sylvia trochilus</i> ...	Haybrook, Pewsey, 1863
25 Chiff Chaff ...	<i>Sylvia rufa</i> ...	By flying against the tower of St. Mary's Church, Devizes
26 Golden-crested Wren <i>m.</i> ...	<i>Regulus cristatus</i> ...	Haybrook, 1863
27 Fire-crested ditto <i>m.</i> ...	<i>Regulus ignicapillus</i> ...	
28 Great Tit ...	<i>Parus major</i> ...	Bemerton, 1853
29 Blue ditto ...	<i>Parus cœruleus</i> ...	
30 Cole ditto ...	<i>Parus ater</i> ...	Haybrook, 1863
31 Bearded ditto <i>m.</i> ...	<i>Calamophilus biarmicus</i> ...	
32 Ditto <i>f.</i> ...	<i>Ditto</i> ...	
33 Long-tailed ditto ...	<i>Parus caudatus</i> ...	
34 Bohemian Waxwing <i>m.</i> ...	<i>Bombycilla garrula</i> ...	
35 Pied Wagtail ...	<i>Motacilla Yarrellii</i> ...	
36 White ditto ...	<i>Motacilla alba</i> ...	
37 Gray-headed ditto ...	<i>Motacilla flava</i> ...	Harnham, 1853
38 Ray's ditto ...	<i>Motacilla Rayi</i> ...	
39 Rock Pipit ...	<i>Anthus petrosus</i> ...	Near Stromness, 1863

			Where Killed.
40 Meadow ditto	...	<i>Anthus pratensis</i>	Wilcot, Wilts, 1862
41 Shore Lark	...	<i>Alanda alpestris</i>	
42 Sky ditto	...	<i>Alanda arvensis</i>	
43 Crested ditto	...	<i>Alanda cristata</i>	
44 Short-toed ditto	...	<i>Alanda brachydactyla</i>	
45 Common Bunting	...	<i>Emberiza miliaria</i>	
46 Snow ditto <i>w.p.</i>	...	<i>Plectrophanes nivalis</i>	Yorkshire
47 Black-headed ditto	...	<i>Emberiza schoeniclus</i>	
48 Yellow ditto	...	<i>Emberiza citrinella</i>	Near London, 1863
49 Cirl ditto	...	<i>Emberiza cirrus</i>	North Tedworth, 1861
50 Chaffinch	...	<i>Fringilla cœlebs</i>	Near London, 1863
51 Mountain Finch	...	<i>Fringilla montifringilla</i>	Ablington, Wilts, 1861
52 Tree Sparrow	...	<i>Passer montanus</i>	New Park, Devizes, 1862
53 House Sparrow	...	<i>Passer domesticus</i>	
54 Greenfinch	...	<i>Coccothraustes chloris</i>	
55 Hawfinch <i>m.</i>	...	<i>Coccothraustes vulgaris</i>	Britford, Wilts, Dec., 1863
56 Ditto <i>f.</i>	...	Ditto	Ditto
57 Goldfinch	...	<i>Carduelis elegans</i>	Near Salisbury, 1861
58 Common Linnet	...	<i>Linota caunabina</i>	Near London, 1863
59 Mountain ditto	...	<i>Linota montium</i>	Near Stromness,
60 Common Bullfinch <i>m.</i>	...	<i>Pyrrhula vulgaris</i>	Bemerton, 1853
61 Pine Grosbeak <i>m.</i>	...	<i>Pyrrhula enucleator</i>	
62 Ditto <i>f.</i>	...	Ditto	
63 Common Crossbill <i>m.</i>	...	<i>Loxia curvirostra</i>	New Park, Devizes, 1861
64 Ditto <i>f.</i>	...	Ditto	Ditto
65 Parrot ditto <i>m.</i>	...	<i>Loxia pityopsittacus</i>	
66 American white-winged ditto <i>m.</i>	...	<i>Loxia leucoptera</i>	
67 Ditto <i>f.</i>	...	Ditto	
68 Rose-coloured Pastor	...	<i>Pastor roseus</i>	
69 Raven	...	<i>Corvus corax</i>	Isle of Man, 1859
70 Carrion Crow	...	<i>Corvus corone</i>	
71 Hooded ditto	...	<i>Corvus cornix</i>	Grovely, 1853
72 Rook	...	<i>Corvus frugilegus</i>	
73 Jackdaw	...	<i>Corvus monedula</i>	Clarendon, Wilts, 1863
74 Chough	...	<i>Fregilus graculus</i>	
75 Magpie	...	<i>Pica caudata</i>	Brooke, N.F., 1853
76 Jay	...	<i>Garrulus glandarius</i>	Winterslow, Wilts, 1863
77 Nutteracker	...	<i>Nucifraga caryocatactes</i>	
78 Great Black Woodpecker	...	<i>Picus martius</i>	
79 Green ditto	...	<i>Picus viridis</i>	Winterslow, Jan., 1864
80 Great spotted ditto	...	<i>Picus major</i>	Near Romsey, Hants, 1860
81 Lesser spotted ditto	...	<i>Picus minor</i>	Whiteparish, Wilts
82 Wryneck	...	<i>Yunx torquilla</i>	Harnham, 1853
83 Wren	...	<i>Troglodytes vulgaris</i>	
84 Common Creeper	...	<i>Certhia familiaris</i>	
85 Hoopoe	...	<i>Upupa epops</i>	Hampshire, 1850
86 Nuthatch	...	<i>Litta Europæa</i>	
87 Common Cuckoo <i>a.m.</i>	...	<i>Cuculus canorus</i>	Near Devizes, 1863
88 Ditto <i>y</i>	...	Ditto	Near Southampton, 1862
89 Yellow-billed American ditto	...	<i>Coccyzus Americanus</i>	
90 Roller <i>m</i>	...	<i>Coracias garrula</i>	
91 Bee-eater <i>m</i>	...	<i>Merops apiaster</i>	
92 Kingfisher	...	<i>Alcedo ispida</i>	Britford, December, 1863
93 Belted Kingfisher	...	<i>Alcedo aleyon</i>	
94 Red-winged Starling	...	<i>Agelaius phœniceus</i>	
95 Ortolan Bunting	...	<i>Emberiza hortulana</i>	

C. GROUND BIRDS (RASORES).

		Where Killed.
1 Ring Dove or Wood Pigeon	<i>Columba palumbus</i>	
2 Stock Dove	<i>Columba oenas</i>	
3 Rock ditto	<i>Columba livia</i>	Near Stromness, 1863
4 Turtle ditto	<i>Columba turtur</i>	
5 Passenger Pigeon	<i>Ectopistes migratorius</i>	
6 Ring-necked Pheasant <i>m.</i>	<i>Phasianus torquatus</i>	Breamore, Nov., 1862
7 Common Quail	<i>Coturnix vulgaris</i>	Old Sarum, Wilts, 1853
8 American ditto <i>m.</i>	<i>Ortyx Virginiana</i>	
9 Ditto <i>f.</i>	Ditto	

D. WADING BIRDS (GRALLATORES).

1 Cream-coloured Courser	<i>Cursorius Europæus</i>	
2 Golden Plover, <i>s.p.</i>	<i>Charadrius pluvialis</i>	Near Stromness, 1862
3 Ringed ditto <i>s.p.</i>	<i>Charadrius hiaticula</i>	
4 Little-ringed ditto <i>a.m.s.p.</i>	<i>Charadrius minor</i>	
5 Ditto <i>y</i>	Ditto	Portland, Dorset, 1853
6 Gray ditto <i>w.p.</i>	<i>Squatarola cinerea</i>	
7 Peewit or Lapwing <i>m.s.p.</i>	<i>Vanellus cristatus</i>	
8 Golden Plover <i>w.p.</i>	<i>Charadrius pluvialis</i>	Near Stromness, 1863
9 Turnstone <i>m.s.p.</i>	<i>Streptilas interpres</i>	
10 Sanderling	<i>Calidris arenaria</i>	
11 Common Heron	<i>Ardea cinerea</i>	Bishopstone, Wilts, 1853
12 Purple ditto <i>m</i>	<i>Ardea purpurea</i>	
13 Little Egret	<i>Ardea garzetta</i>	
14 Squacco Herron	<i>Ardea cornata</i>	
15 Little Bitterne <i>m</i>	<i>Botaurus minutus</i>	
16 Common ditto	<i>Botaurus stellaris</i>	
17 Night Heron <i>a.m.</i>	<i>Nycticorax gardeni</i>	
18 White Spoonbill <i>a.m.</i>	<i>Platalea leucorodia</i>	
19 Common Curlew	<i>Numenius arquata</i>	
20 Whimbrell	<i>Numenius phœopus</i>	Near Romsey, 1862
21 Common Redshank	<i>Totanus calidris</i>	Near Stromness, 1863
22 Greenshank	<i>Totanus glottis</i>	
23 Blacktailed Godwit	<i>Limosa melanura</i>	
24 Bartailed ditto	<i>Limosa rufa</i>	
25 Ruff <i>m.s.p.</i>	<i>Machestes pugnax</i>	Lincolnshire, 1862
26 Ditto <i>m.s.p.</i>	Ditto	Ditto
27 Reeve <i>f.</i>	Ditto	Ditto, 1863
28 Common Snipe	<i>Scolopax gallinago</i>	Stratford-sub-Castle, 1853
29 Knot <i>s.p.</i>	<i>Tringa canutus</i>	
30 Green Sandpiper	<i>Totanus ochropus</i>	Near Salisbury, 1862
31 Common ditto	<i>Totanus hypoleucos</i>	
32 Purple ditto	<i>Tringa maritima</i>	
33 Gray Phalarope <i>s.p.</i>	<i>Phalaropus lobatus</i>	Near Stromness, 1863
34 Landrail or Corn Crake	<i>Crex pratensis</i>	Near Salisbury, 1863
35 Little Crake	<i>Crex pusilla</i>	
36 Moorhen <i>m.</i>	<i>Gallinula chloropus</i>	Salisbury, 1863
37 Water Rail	<i>Rallus aquaticus</i>	Stratford-sub-Castle, 1853
38 Brown Snipe	<i>Macrorhamphus griseus</i>	

E. SWIMMING BIRDS (NATATORES).

1 Tufted Duck <i>f.</i>	<i>Fuligula cristata</i>	Breamore, 1862
2 Summer Teal	<i>Anas querquedula</i>	
3 Puffin	<i>Fratercula arctica</i>	Weymouth, 1852
4 Common Guillemot	<i>Uria troile</i>	
5 Little Ank	<i>Mergulus melanoleucos</i>	Stromness, 1862

			Where Killed.
6 Fulmar Petrel	...	<i>Procellaria glacialis</i>	Off Cape Horn, 1863
7 Common Tern	...	<i>Sterna hirundo</i>	
8 Black Tern <i>s.p.</i>	...	<i>Sterna fassipes</i>	
9 Slavonian Grebe <i>m.s.p.</i>		<i>Podiceps cornutus</i>	
10 Razor Bill	...	<i>Alca torda</i>	Stromness, 1863
11 Teal <i>f.w.p.</i>	...	<i>Anas crecca</i>	Breamore, 1864
12 Ferruginous Duck	...	<i>Fuligula nyroca</i>	Wylie, Wilts, Jan., 1864
13 Little Grebe or Dabchick		<i>Podiceps minor</i>	Bemerton, 1853
<i>a.m.s.p.</i>			
14 Ditto <i>f.</i>	...	Ditto	Ditto
15 Ditto <i>y.</i>	...	Ditto	Ugford, Wilts, 1862
16 Wilson's Petrel	...	<i>Thalassidroma Wilsoni</i>	Off Cape Horn, 1863
17 Fork-tailed ditto	...	<i>Thalassidroma Leachii</i>	Quidhampton, Wilts, Oct. 27th, 1859, by flying against the Electric Telegraph wires
18 Slavonian or Dusky Grebe <i>w.p.</i>		<i>Podiceps cornutus</i> ...	Britford, Jan., 1864

- Case 1. Eagle owl (*Bubo maximus*), snowy owl (*Surnia nyctea*), marsh harrier (*Circus æruginosus*), hen harrier (*Circus cyaneus*), Montagu's harrier (*Circus Montagu*). Numbers A 23, 24, 18, 19, and 22 in Catalogue. *Deposited by Mr. Henry Blackmore.*
- Case 2. Cormorant (*Phalacrocorax carbo*), killed at Little Durnford, Wilts, 1860; great northern diver (*Colymbus glacialis*), killed at Harnham, Wilts, 1852. *Deposited by Mr. E. T. Stevens.*
- Case 3. Common bittern (*Botaurus stellaris*), killed at Winterbourne, Wilts, 1853. *Deposited by Mr. Cookman.*
- Case 4. Osprey or fishing hawk (*Pandion haliaëtus*), killed on the Severn. *Deposited by Mr. Cookman.*
- Case 5. Black grouse, m. and f. (*Tetrao tetrix*), killed in the New Forest, 1859. *Deposited by Mr. Cookman*
- Case 6. Peregrine falcon, a. m. (*Falco peregrinus*), killed in Wilton Park. *Deposited by Mr. Henry Blackmore.*
- Case 7. Kite or glead (*Milvus vulgaris*), killed at Cholderton, Wilts. *Deposited by Mr. J. Horne, Allington.*
- Case 8. Tawny owls, m. and f. (*Syrnium stridula*), killed at Little Durnford, 1861. *Deposited by Mr. E. T. Stevens.*
- Case 9. Little grebe or dabchick, m. f. and y. (*Podiceps minor*). Numbers E 13, 14, 15 in Catalogue. *Deposited by Mr. Henry Blackmore.*
- Case 10. Wilson's Petrel (*Thalassidroma Wilsoni*), and Fork-tailed Petrel (*Thalassidroma Leachii*). Numbers E 16 and 17 in Catalogue. *Deposited by Mr. Henry Blackmore.*
- Case 11. Hobby, m. (*Falco subuteo*), killed at Wilton Park, 1856. *Deposited by Mr. Henry Blackmore.*
- Case 12. Great bustards, m. and f. (*Otis tarda*), killed at Malton, Yorkshire, 1825. *Deposited by Mr. Henry Blackmore.*
- Case 13. Sand martin, white (*Hirundo riparia*). *Deposited by Mr. Wyndham Pain.*

CASE O.

(All the specimens in Cases O and M are from the clay of Fisherton, unless the contrary is stated).

The bones in the subjoined catalogue are, with a very few exceptions, from the brick-fields of Fisherton, about a mile to the west of Salisbury. The clay from which they are obtained belongs, geologically speaking, to that division of the tertiary formations which is technically known as the *Mammalian drift* or *Pleistocene*.*

The gracefully-sloping hill sides of the various ranges of chalk which bound the river Avon, and its tributary streams the Wiley, Nadder, and Bourne, are in many places covered with detached patches of clay and gravel; but in this neighbourhood they are more conveniently exposed, and of far greater extent at Fisherton than elsewhere. Here the gravel, clay, and brick earth, are deposited upon the south side of the northern boundary of the river Nadder; the deposits vary considerably in thickness, in parts vertical sections show a height of about 30 feet; they everywhere gradually thin out towards the valley. At the base of the clay in some of the pits may be detected a very thin band of light coloured marl, which contains a large number of both land and freshwater shells, all of species similar to those now found inhabiting the streams and meadows of the valley below, and hence it is very clear that these beds of gravel, clay and sand, are the result of freshwater action, not a single marine shell has hitherto been discovered.

The bones and teeth themselves occur scattered through the clay and gravel, but are met with most abundantly low down, generally a few feet from the base of the deposits. From the great lapse of time which must have occurred since these bones were first buried where they are now found, considerable alteration in their chemical composition has taken place, nearly all traces of gelatine are lost, only the earthy salts remaining; and hence, when the bones are dry, they very readily absorb moisture, sticking to the wetted finger like a piece of dry chalk or lime: this is a rough, but often a very useful, test of the genuineness or otherwise of the remains of such animals as are still living, the ox, horse, and others.

The bones exhibited give but an imperfect idea of the state in which they usually occur; these specimens have been selected from a large number, many having undergone extensive repairs, the majority being fragmentary and very much broken, although scarcely ever water-worn; it is quite the exception to meet with any of the long bones of the extremities entire.

* The terms Eocene, Miocene, Pliocene, and Pleistocene, employed by Sir Charles Lyell to designate the different tertiary strata, are derived from the Greek words *εως*, eos, dawn; *μειον*, meion, less; *πλειον*, pleion, more; *πλειστος*, pleistos, most; and *καινος*, kainos, recent; each being intended to express the relative proportions of recent and extinct shells found in the several strata. Thus the shells of the Eocene period contain a very small number of living species, and may be looked upon as indicating the *dawn* of the existing state of the testaceous fauna. In the Pleistocene, on the other hand, all, or nearly all, the shells belong to existing species.

Old bones are proverbially dry, but even they, by the aid of the sister sciences of Comparative Anatomy and Paleontology, give strange and startling revelations of creatures that lived ages ago, and dying left their bones to testify how vastly different our County must have appeared when inhabited by such denizens as the great hairy mammoth, the woolly rhinoceros, cave lion, and hyæna. Our peaceful downs, could they speak, would tell of vast droves of rather small but hardy horses, not unlike the half-wild forest ponies of the present day ; of the dainty browsing of whole herds of deer, of a small, short-horned ox, and a shaggy-maned bison ; of the stillness of the night, broken by the terror-inspiring roar of a hungry lion, or perchance the hideous discord of a pack of savage hyænas, quarrelling over some half-putrid carcass of a young rhinoceros, making the air re-echo with their peculiar yells—that strange, half-human expression of savageness and mirth ; of winters of intense cold, when even the hardy reindeer and musk buffalo found it difficult to procure food sufficient to support life, and gladly availed themselves of the miniature stacks of hay collected in the summer by the provident little marmots.

In glancing over the many bones found at Fisherton, one has been forcibly struck with the fact that the same divine and beneficent law, which at the present day prevents the injurious increase of any one race, must have obtained also in those remote ages. The too rapid extension of the *herbivora*, or vegetable feeders, was kept within proper limits by the presence of the very formidable *carnivora*, or flesh eaters. Nor was this all, for upon careful examination it will be seen that amongst the former the great bulk of the bones belong either to the very young or old individuals, in both cases indicating that it was the weak, sickly, and comparatively useless members that were sacrificed for the benefit of the strong and healthy. Let not, then, old bones be despised ; they can teach us all this and very much more—let them speak for themselves, they are eloquent as any Egyptian hieroglyphics, and like them require some little time and careful study to translate, yet always fully repaying the student for any such outlay of time and trouble.

1. Cave lion (*Felis spelæa*), portion of lower jaw, right side, with last molar tooth *in situ*. Deposited by Dr. Blackmore.

This specimen proves beyond doubt that in bygone ages a veritable "British lion" roamed over our plains—a lion that, in point of size, exceeded even the largest African or Asiatic species of the present day. Look well at the form of the one remaining tooth : how admirably it is adapted to the scissor-like office assigned to it, that of dividing the yet quivering flesh of its prey ; thus scattering to the winds the beautiful and poetic, but false idea, of the lion once eating grass like the lamb.

2. Cave hyæna (*Hyæna spelæa*), nearly half of lower jaw, left side containing one incisor, canine, and three molar teeth. Deposited by Dr. Blackmore.

In this specimen we have a good example of the teeth of the great hyæna, which was contemporary with the cave lion. The last molar tooth is deserving of especial notice, from its close resemblance to that of the lion above mentioned; it differs, however, in possessing two small tubercles, one at each end of the base of the crown, that on the posterior margin being the larger and better marked: but this slight deviation in form is very significant, as it indicates greater strength, and implies an additional use to that of mere flesh-dividing.

The spotted hyæna (*H. crocuta*) of the Cape, although greatly inferior in size, is the animal which most nearly approaches this extinct species; now it is well-known that the fierce crocuta lives to a great extent upon the putrifying carcasses of dead animals, having a decided preference for the bones and marrow, and we consequently find that both the form of the teeth, and the unusually large and powerful muscles which work the jaw are specially adapted to allow the free indulgence of this creature's appetite for marrow bones. The great extinct species was equally well provided for; not only are the stout conical teeth of the very best form for breaking bones, but each tooth is provided at its base with a prominent collar of enamel, the use of which was evidently to protect the gum from injury by any sharp splinters of bone. It is said that a late eminent engineer, upon seeing the jaw of a hyæna, at once fixed on these teeth as affording the best possible model for a hammer for breaking stones upon the roads. The fossil remains of this extinct cave hyæna are comparatively rare in the unstratified drift, but in many of the caverns and fissures in the limestone rocks formerly used by these creatures as dens, their bones and teeth occur in great abundance. In the celebrated cave at Kirkdale, in Yorkshire, Dr. Buckland estimated the detached teeth which he had himself either discovered or seen, as belonging to between 200 and 300 individuals, of all ages. The caverns in the Mendip Hills, more particularly at Bleadon and Banwell, were probably the head quarters of the troops of these powerful animals who once scoured over our quiet chalk downs.

3. Fox (*Canis vulpes*), fragment of lower jaw, left side, containing portion of canine and four molar teeth. *Deposited by Dr. Blackmore.*

4. Lower third of humerus. *Deposited by Dr. Blackmore.*

As far as we can judge from the two small fragments of bone hitherto found at Fisherton, the fossil fox differed in no respect from its cunning descendant of the present day; even its habits and tastes seem unaltered, as the impression of its teeth on No. 112 still bears testimony of its former partiality for goose.

This specimen closes the list of Carnivora as yet discovered at Fisherton; a list short and imperfect indeed, but one that every year of careful search will doubtless considerably increase.

5. Pouched marmot *Spermophilus (superciliosus ?)* card containing portion of skull ; (superior maxillaries with 2 incisor, 5 molar on left side, and last molar tooth on right, frontal, and part of parietal bones), nearly perfect lower jaw with all the teeth, wanting only ascending ramus on left side ; 1 detached upper, and 1 lower incisor tooth ; petrous portion of temporal bone ; 3 vertebræ (axis and 2 dorsal *imperfect*) ; right clavicle ; right and left first ribs ; fragment of scapula ; left humerus ; left ulna, wanting distal articular extremity ; os calcis, astragalus, and 5 phalanges. *Deposited by Dr. Blackmore.*

This little spermophile, or pouched marmot was about the size of a squirrel, and as no published account has been given of this fossil, which is of great local interest, the subjoined anatomical details may not be deemed out of place. First, as regards the teeth: the incisors are strong, rounded anteriorly, and slightly flattened on the inner lateral surface ; the molars are simple, the roots being long and distinct. The crown of the first upper molar consists of a single sharp transverse ridge, that of each of the remaining four is divided transversely by a deep valley bounded by two sharp ridges, which terminate externally in two pointed processes, and internally in a single rounded tubercle.

In the lower molars the transverse valley is wider and not so central, the anterior ridge is notched, and more elevated than the posterior one. Both upper and lower molar teeth gradually increase in size from before backwards, the first being the smallest and the last the largest of the series. In old individuals the thin coating of enamel is worn away at the more salient points. The nasal bones are rounded anteriorly ; the frontal is flattened above, and slightly depressed between the well marked superciliary ridges, which are elevated and form posteriorly strong postorbital processes. The parietal is a single bone ; the suborbital foramen is round. Judging from the size of the orbit, the eyes must have been large. The clavicles are strong, and well developed ; the humerus measures 1 in. $4\frac{1}{2}$ lines in length. From the size and shape of the last or ungual phalanx, the animal must have been armed with strong sharp claws. Remains of at least 13 individuals have already been discovered at Fisherton, of these 12 have been found within a few feet of each other, hence it is highly probable that the fossil species was social in its habits, like the *S. Paryii* of the present day.

6. Lemming, *Lemmus (Grœnlandicus ?)*, card containing 2 detached upper and two lower incisor teeth of large size ; small fragment of superior maxillary bone with 5 molar teeth ; portion of lower jaw with incisor, and 4 molar teeth, wanting last molar on both sides ; (2) half lower jaw right side, with incisor and all molar teeth ; portion of right scapula ; (2) lower three-fourths of left humerus ; upper one-third of right radius and ulna ; body of left ilium, upper one-third of left

and lower two-thirds of right femur; lower three-fourths of right tibia; part of rib; (5) caudal vertebræ. *Deposited by Dr. Blackmore.*

This small rodent was rather larger than our common Field vole (*Arvicola agrestis*), for the remains of which it might at first sight have been easily mistaken. A careful examination of the skeleton of the two, however, shows that both upper and lower molar teeth in the fossil are larger; there is a less marked diminution of size between the last and first molar tooth, whilst the triangular prisms of which they are composed are relatively wider apart than in the Field vole. The second upper molar also consists of only "four" triangular prisms, the last or internal one being absent. The lower articular surface of the humerus is relatively broader, the internal condyle more prominent, and the deltoid crest extends lower down in the fossil than in the vole.

The Fisherton fossil is closely allied to, if not identical with, the "Owinyak," or Greenland lemming (*Lemmus Grænlædicus*), a native of Hudson Bay. There is a good recent skeleton in the British Museum with which the present fossil has been compared.

7. Hare (*Lepus timidus*), upper half of left femur. *Deposited by Dr. Blackmore.*

This bone, and those of the two preceding fossils, are in the same semi-fossilized condition as those of the larger extinct mammalia; it was, moreover, dug up about 12 feet from the surface. Professor Owen has demonstrated that a hare, probably identical with the existing Irish species, was contemporary with the mammoth, rhinoceros, &c.

8. Mammoth (*Elephas primigenius*), small fragment of tusk. *Deposited by Dr. Blackmore.*

9. Fragment of tusk. *Presented by Dr. Fowler.*

10. Fragment of small tusk (not from Fisherton). *Presented by Miss Salisbury.*

These specimens are very insignificant fragments as compared with many found in the British Isles. No. 8, however, beautifully illustrates the progressive growth of the cement-forming capsule, which is hardened by the deposition of earthy salts, and thus converted into dentine: the partial decomposition which this fossil has sustained from the loss of nearly all its gelatine has caused the tusk to split up into a number of hollow cones. Many examples of tusks have been discovered so little altered by time as to be of considerable commercial value, finding a ready sale as a substitute for recent ivory. The tusks of the mammoth were very much more curved than in any living elephant. The perfect specimens which have been found arrange themselves in two groups, the larger tusks, which probably belonged to the male, measure $9\frac{1}{2}$ feet in length and about two feet in circumference, the smaller ones only between five and six feet in length. A tusk was found at

Stroud, and is now in the Museum of the Royal Agricultural College, Cirencester, which measures upwards of 15 feet in length.

11. Portion of a large lower molar tooth. *Presented by Dr. Fowler.*

12. Portion of molar tooth. *Presented by Mr. John Harding.*

13, 14, 15, and 19. Lower molar teeth. *Deposited by Dr. Blackmore.*

16 and 17. Portions of upper molar teeth. *Presented by Dr. Fowler.*

18. Portion of upper molar tooth, from shell marl below the Peat, Berkshire. *Presented by Mr. James Rawlence.*

Before the researches of Cuvier, the various elephantine remains, found in the superficial tertiary deposits, were looked upon as mere varieties of the existing Asiatic species, and, absurd as it may now seem, persons were not wanting who boldly attributed the fossil remains of the Mammoth, frequently disinterred in almost every county in England to the *one* elephant imported by Cæsar. There are, however, well marked anatomical differences. Those in the molar teeth are thus well described by Professor Owen :—
“The grinders are broader and have narrower and more numerous and close-set transverse plates and ridges than in other elephants. In the existing Indian species the molars are relatively narrower, the plates are less numerous, and their enamelled border is festooned. In the African elephant the plates are still fewer, are relatively larger, and so expanded at the middle as to present a lozenge-shape.” The adult Mammoth was at least a third larger than the largest of the existing elephants, and no animal of the drift fauna could have presented a more startling appearance, with its long, shaggy coat of reddish brown hair and strange horn-like tusks.

20 and 21. Lower molar and part of upper molar of *Elephas antiquus*, found in digging sand in the side of a chalk hill at Dewlish, Dorset, July, 1814. This deposit is mentioned by Mr. Hall, in the “Monthly Magazine” for May, 1814. *Deposited by Dr. Blackmore.*

22. Tichorhine Rhinoceros (*Rhinoceros tichorhinus*), upper molar tooth, found near Bath. *Presented by Miss Salisbury.*

23 to 29. Upper molar teeth, of different ages, the grinding surface being altered by the wearing down of the teeth in the mastication of food. *Deposited by Dr. Blackmore.*

30 and 31. Portions of upper molar teeth. *Presented by Dr. Fowler.*

32 to 36. Lower molar teeth. *Deposited by Dr. Blackmore.*

The Tichorhine rhinoceros, as well as the Mammoth, was furnished with a thick coat of woolly hair, which enabled it to resist

the extreme cold of an arctic winter. Like the present Indian species it possessed two horns, which, from the peculiar structure of the nasal bones, Cuvier concluded were both larger and more formidable than in the existing animal.

37 and 38. *Equus plicidens*, upper molar teeth. In these specimens the enamel is not quite so much plicated as in the teeth from Oreston, but No. 37, the first molar, shows the characteristic width of the anterior angle. *Deposited by Dr. Blackmore.*

39 and 40. Fossil horse (*Equus fossilis*), incisor teeth of young animal. *Deposited by Dr. Blackmore.*

41 to 43. Upper molar teeth of young animal, showing in a very marked degree the greater length in an antero-posterior direction as compared with breadth. *Deposited by Dr. Blackmore.*

44 and 45. Upper molar teeth. *Deposited by Dr. Blackmore.*

46. Portion of lower jaw, with first three molar teeth *in situ* (young animal). *Deposited by Dr. Blackmore.*

47. Nearly right half of lower jaw, with four teeth; the last tooth was just appearing above the gum when the creature died—it belonged to a young animal, about the same age as No. 46. *Deposited by Dr. Blackmore.*

79. Portion of lower jaw, with three molar teeth (young animal). *Presented by Mr. Jno. Harding.*

49 to 51. *Asinus fossilis*? Series of upper molar teeth of large ass or small pony. *Deposited by Dr. Blackmore.*

52. Upper molar tooth. *Presented by Dr. Fowler.*

54. Part of lower jaw, with three teeth. *Deposited by Dr. Blackmore.*

48. Horse (*Equus caballus*), series of upper molar teeth, of small size. *Deposited by Dr. Blackmore.*

53. First upper molar of very old animal. *Deposited by Dr. Blackmore.*

55 to 61. Lower molar teeth; No. 58 is three inches in length from grinding surface to root. *Deposited by Dr. Blackmore.*

62. Lower molar teeth. *Presented by Mr. Harding.*

63 to 65. Lower molar teeth. *Deposited by Dr. Blackmore.*

66 to 69. Upper molar teeth, small size. *Presented by Dr. Fowler.*

70 to 73. Upper molar teeth. *Presented by Dr. Fowler.*

75. Upper molar tooth, large size. *Presented by Mr. J. Harding.*

74, 76, and 77. Upper molar teeth of large size. *Deposited by Dr. Blackmore.*

78. Anterior portion of lower jaw of very old horse, containing the incisor, canine, and first molar teeth, on right side. *Presented by Mr. John Harding.*

80 to 85. Specimens of the ungual or hoof phalanx (*os pedis*) of different sizes. *Deposited by Dr. Blackmore.*

86 to 94. First and second phalanges; (the pastern, *os suffraginis*, and coronet bones, *os coronæ* of veterinary surgeons). No. 89 is a coronet bone of large size. *Deposited by Dr. Blackmore.*

95. Small stout metacarpal bone. *Presented by Mr. John Harding.*

96. Metacarpal bone of young animal. *Deposited by Dr. Blackmore.*

97. Metatarsal bone. *Deposited by Dr. Blackmore.*

98. Metatarsal bone. *Presented by Mr. Jno. Harding.*

99 and 100. Small-metacarpal and metatarsal bones. *Deposited by Dr. Blackmore.*

101 and 102. Lower portion of tibia and astragalus. *Presented by Mr. Jno. Harding.*

103 and 104. Os calcis and astragalus. *Deposited by Dr. Blackmore.*

105 to 107. Scaphoid and two cuneiform bones.

At Fisherton, as in the various pleistocene deposits in other parts of England, remains of the Horse and Ox are more abundant than those of other animals, and of the former, as proved by the testimony of the teeth and bones, there existed at least four species or varieties. One, which is chiefly distinguished by the elegant and more complex foldings of the enamel in the upper molar teeth, must have represented a horse of about 13 or 14 hands high. A second species is also mainly distinguished by the conformation of its teeth, having the second and third molars in both upper and lower jaws, relatively longer in an antero-posterior direction than in the existing race of horses. The third species was a large Horse, whose bones and teeth are undistinguishable in an anatomical point of view from those of the present day; it not improbably represents the ancestors of the large black wild horse which formerly inhabited the extensive forests in the North of Gaul and the Netherlands. The fourth and most numerous variety was most likely identical with the small Pony which Cæsar found running wild in many parts of Britain, and whose descendants may still be traced in the small rough Ponies of the New Forest, Dartmoor, and the Welsh Mountains. Some of the smaller teeth may possibly belong to a fossil Ass of large size, but the remains as yet found are too fragmentary and scattered to enable one to speak with any degree of certainty on this point.

108. Wild boar (*Sus scrofa*?) Portion of os calcis of young animal. *Deposited by Dr. Blackmore.*

It would be rash to say positively, upon the slender evidence of a mere fragment, to what species this fossil should be referred. The testimony, however, as far as it goes, is in favour of its belonging to an individual not different from the Wild boar which was formerly so abundant in our native forests. The comparative

scarcity of remains of pigs in strata of this age is very remarkable, more especially in this neighbourhood, as we know that in the adjacent Caves at Banwell their bones and teeth are by no means uncommonly met with. Again, in the Turbary period, so immediately subsequent to that of the Drift, as in the peat at Romsey and at Newbury, remains of the boar occur in the greatest profusion ; and, descending still later to historic times, our Forest of Grovely was quite noted for the production of perfect giants in the shape of Wild boars.

109. Small portion of Egg-shell, corresponding in size to a similar fragment of egg of Wild duck (*Anas boschas*). *Deposited by Dr. Blackmore.*

110. Portion of larger Egg-shell, corresponding in size to that of Wild goose (*Anser palustris*). *Deposited by Dr. Blackmore.*

These two specimens are extremely interesting, being the first examples hitherto met with in this country of fossil Egg-shells occurring in deposits of this age. They are both stained of a pale fawn colour, and in many parts are covered with superficial encrustations. Nos. 111 and 112 were found within a few feet of No. 110, but no bones accompanied No. 109 : they were obtained from undisturbed soil at a very considerable depth from the surface.

111. Wild goose (*Anser palustris*?). Portion of femur, wanting lower articular extremity. *Deposited by Dr. Blackmore.*

112. Coracoid bone shewing impressions of teeth of some carnivorous animal, probably fox. *Deposited by Dr. Blackmore.*

CASE M.

1. Rein-deer (*Cervus tarandus*), fragment of lower jaw of young animal, containing four teeth : the third pre-molar is still in the jaw, and the last true molar is not fully acquired. *Deposited by Dr. Blackmore.*

2. Nearly half of lower jaw, with complete series of molar teeth. *Deposited by Dr. Blackmore.*

8 to 12. Portions of shed antlers : these have apparently all belonged to young animals ; the beam of the horn is smooth and very much compressed laterally. They correspond with the variety named *C. Guettardi*, which Dr. Falconer now considers as the young of *C. tarandus*. *Deposited by Dr. Blackmore.*

15 to 18. Portions of shed horns, differing from preceding in position of brow antler, and in more rounded form of beam. *Deposited by Dr. Blackmore.*

19. Small shed horn of very young animal. *Deposited by Dr. Blackmore.*

28. Distal extremity of metacarpas. *Deposited by Dr. Blackmore.*

29 and 30. Portions of metatarsus. *Deposited by Dr. Blackmore.*

31 and 32. Os calcis and astragalus. *Deposited by Dr. Blackmore.*

- 21 and 22. Small fragment of palmated horns. *Deposited by Dr. Blackmore.*
3. Lower molar tooth of species of *Cervus*. *Deposited by Dr. Blackmore.*
4. Part of large upper molar tooth of a species of *Cervus*. *Deposited by Dr. Blackmore.*
- 5 and 6. Red-deer (*Cervus elaphus*), series of upper molar teeth, showing the deciduous or milk molars, about to be displaced by the permanent premolars: the last true molar has not risen to the level of the grinding surface of the other teeth. *Deposited by Dr. Blackmore.*
7. Part of lower jaw, with complete series of molar teeth *Deposited by Dr. Blackmore.*
20. Fragment of small round snag of horn. *Deposited by Dr. Blackmore.*
38. Base of horn with brow antlers, from the neighbourhood of Lavington. *Presented by Mr. Tucker.*
39. Base of large shed horn, measuring $10\frac{1}{4}$ inches in circumference, immediately above the burr. *Deposited by Dr. Blackmore.*
23. Metacarpal bone. *Deposited by Dr. Blackmore.*
- 24 and 25. Metatarsal bones. No. 24 is a gnawed fragment. *Deposited by Dr. Blackmore.*
- 26 and 27. Portions of metatarsal bones. *Presented by Mr. John Harding.*
- 32 to 35. Bones of the tarsus found with No. 25. No. 36 is the patella. *Deposited by Dr. Blackmore.*
- 41 to 49. Specimens of the phalanges. No. 45 is the ungual or hoof phalanx: *Deposited by Dr. Blackmore.*
40. Os calcis which has been water-worn.
37. Small os calcis of species of *Cervus* (imperfect). *Deposited by Dr. Blackmore.*
- 13 and 14. Portions of small round horns. No. 14 is attached to the skull, and not shed as in all the other specimens. *Deposited by Dr. Blackmore.*
- It is a well-known fact that Deer annually cast off and re-produce their horns, and it is worthy of remark that the number of shed horns disinterred from the more recent geological deposits usually bear the same proportion as in the present day; four or five pair of shed antlers occurring to every single pair found attached to the skull. This is a strong argument in favour of the animals having lived and died in those places where we now find their fossilised remains.
50. Great fossils aurochs (*Bison priscus*). Metatarsal bone of small size. The peculiar ridge of bone on the inner side of the groove for the extensor tendon is very strongly marked. *Deposited by Dr. Blackmore.*
- 51 to 54. Phalanges. No. 51 to 53 were found with No. 50. *Deposited by Dr. Blackmore.*

55 and 56. Unguial, or hoof phalanges. *Deposited by Dr. Blackmore.*

57 and 58. Small fossil Bison (*Bison minor*). Metatarsal bones. *Deposited by Dr. Blackmore.*

59 to 61. Metacarpal bones. *Deposited by Dr. Blackmore.*

Scattered metacarpal and metatarsal bones of slender proportions, and having a well marked thickening of the inner edge of the groove for the extensor tendon, are not of unfrequent occurrence at Fisherton; the metatarsal bones in particular are almost identical with those in the Museum of the Royal College of Surgeons from the ossiferous fissures at Oreston. It is not improbable that the scanty supply of grass afforded by our chalk hills accounts for the predominance of the small-sized breeds of the different herbivorous quadrupeds in this neighbourhood.

62 to 64. Upper molar teeth. *Deposited by Dr. Blackmore.*

65 and 66. Series of upper molar teeth of both right and left sides.

The permanent premolars are fully developed in the jaw, and about to displace the deciduous ones; the crown of the last molar has just commenced to be worn down by the mastication of the food. *Deposited by Dr. Blackmore.*

These molar teeth (62 to 66) are remarkable as possessing a small accessory column between the two lobes on the *external* surface, in addition to that one so constant in the upper molar teeth of the Bovidæ, on the inner side. This column is most fully developed in the last molar; it is also very distinct in the second, but absent in the first true molar.

67 and 68. First and second upper molar teeth of right and left sides. *Deposited by Dr. Blackmore.*

69. Second and third upper molars. *Deposited by Dr. Blackmore.*

70 and 71. Upper molar teeth. *Presented by Mr. John Harding.*

72 to 75. Upper molar teeth, having the two central islands of enamel quite simple. *Deposited by Dr. Blackmore.*

76. Series of three lower molar teeth. *Deposited by Dr. Blackmore.*

77. Lower molar teeth, found with 65 and 66. *Deposited by Dr. Blackmore.*

78 to 80. Last lower molar teeth, more curved than usual. *Deposited by Dr. Blackmore.*

81 to 84. Lower molar teeth. *Presented by Mr. John Harding.*

85. Small lower molar tooth in portion of jaw. *Deposited by Dr. Blackmore.*

86. Rather large, unworn upper molar tooth. *Deposited by Dr. Blackmore.*

The identification of the different species of Oxen from isolated bones and detached molar teeth is always most difficult, and in many cases impossible; indeed, Cuvier affirmed that the bones of the existing races of this numerous family resembled each other so closely that entire crania were necessary to satisfactorily

determine the relation of the fossil species. The upper molar teeth from Fisherton are all unusually narrow, as will be readily seen by comparing them with the teeth from Berwell Fen.

87. Great fossil Ox (*Bos primigenius*), series of 4 upper molar teeth from Berwell Fen, Cambridgeshire. *Deposited by Dr. Blackmore.*
88. Metacarpal bone from Banwell Cave. *Deposited by Dr. Blackmore.*
89. Metacarpal bone. *Deposited by Dr. Blackmore.*
- 90 to 98. Phalanges. 93 and 98 are the ungual, and 99 is the accompanying sessamoid bone *Deposited by Dr. Blackmore.*
- 135, 136, and 137. Os calcis, astragalus, and scaphocabrides. *Deposited by Dr. Blackmore.*
100. Metatarsal bone. *Deposited by Dr. Blackmore.*

The Great fossil Ox (*Bos primigenius*) was still living in the ancient forests of our island when Cæsar first invaded Britain; and the gigantic proportion of this animal was noticed by the Roman historian, who described it as but little inferior in size to the elephant. The long horns were gracefully curved, first slightly backward and upward, then downward and forward, and lastly inward and upward, the tips spreading to a breadth of nearly five feet. Against the wall of the circular room is a very perfect, though small, skull of this Ox, which was obtained from the peat of Berwell Fen, about 13 feet from the surface.

The forehead is rather longer and narrower than in the typical examples of this species; it probably belonged to an adult female. Mr. Dowding, of this city, possesses a fragment of a horn core (from the Fisherton clay), which must have belonged to a large animal; it is broken off some distance from the base, but even now measures 13 inches in circumference.

- 101 to 104, and 107. Small long-fronted Ox (*Bos longifrons*). Upper molar teeth. *Deposited by Dr. Blackmore.*
- 105 and 106. Upper molar teeth. *Presented by Mr. John Harding.*
- 108 to 110. Upper molar teeth. *Presented by Dr. Fowler.*
111. Upper molar of very old animal. *Deposited by Dr. Blackmore.*
- 112 and 113. Upper molar teeth. *Presented by Miss Salisbury.*
- 114 to 118. Upper premolar teeth. *Deposited by Dr. Blackmore.*
119. Deciduous or milk molar teeth. *Presented by Mr. John Harding.*
120. Portion of lower jaw, with series of deciduous teeth. *Presented by Mr. Jno. Harding.*
121. Portion of lower jaw, with series of deciduous teeth. *Deposited by Dr. Blackmore.*
122. Lower molar teeth. *Presented by Mr. Jno. Harding.*
- 123 to 126. Lower molar teeth of large size. *Deposited by Dr. Blackmore.*

127. Series of lower molar (4) of old animal. *Deposited by Dr. Blackmore.*
128. Last lower molar of very old animal. *Deposited by Dr. Blackmore.*
- 129 and 130. Incisor teeth. No. 130 must have belonged to a very old animal, as the whole of the crown of the tooth is worn away. *Deposited by Dr. Blackmore.*
131. Nearly half lower jaw with teeth. The first premolar is wanting. *Presented by Mr. John Harding.*
- 132 and 133. Half lower jaw with complete series of teeth, and also teeth of opposite side. *Deposited by Dr. Blackmore.*
134. Horn core, slightly imperfect. *Presented by Mr. John Harding.*
- 138 and 139. Metatarsal and metacarpal bones. *Presented by Mr. John Harding.*
- 140 to 142. Metacarpal bones. No. 140 is a remarkably stout bone. 142 belonged to a young animal. *Deposited by Dr. Blackmore.*
- 143 and 144. Phalanges. *Deposited by Dr. Blackmore.*

The Long-fronted Ox in point of size presented a striking contrast to that of the gigantic primigenial one; it had short, strongly-curved horns, which were often slightly flattened laterally. This small Ox was in domestic use during the time of the Roman occupation of Britain, and it has undoubtedly afforded us the primitive stock from which all our present breeds of short-horned cattle have been derived.

CASE N.

The bones in this case have not yet been arranged; the contents may be briefly stated to consist of remains of the Mammoth (*Elephas primigenius*), Tichorhine rhinoceros (*Rhinoceros tichorhinus*), Great fossil Ox (*Bos primigenius*), Small long-fronted Ox (*Bos longifrons*), Small fossil Bison (*Bison minor*), Rein-deer (*Cervus tarandus*), Red-deer (*Cervus elaphus*), and various Equine remains. There is also on the upper shelf a tolerably perfect skull of the Thick-toothed grampus (*Phocæna crassidens*), from the alluvial deposits of Kent.

Some of these bones are presented by *Miss Salisbury, Dr. Fowler, and Mr. John Harding*, whilst the remainder are deposited by *Dr. Blackmore*: the majority are from the Fisherton clay pits.

The chronological relation of the different Bone caves has always been involved in considerable uncertainty from the necessarily isolated position of these deposits; very much light, however, may be thrown upon this question by comparing the remains found in well defined deposits with those of the Caves. In this view the fauna of the Fisherton beds, bears a striking resemblance to that of the ossiferous fissures of Oreston, in Devonshire.

1.

2.

3.

3A.

Flint Implements found in the Drift

Group 1. Flakes.

Fig 1 Found at Porte Marcade's Abbeville

Fig 2 Chisel-pointed Flake found at Montiers, near Amiens

Group 3. Oval and Almond-shaped Implements with a cutting edge all round.

Fig 3. Found at Menchecourt near Abbeville. Length $4\frac{1}{4}$ inches. Greatest width $2\frac{3}{4}$ inches. Greatest thickness $\frac{1}{2}$ inch.

Fig 3A. Side view of the same.

E T. Stevens. Inst.

1.

1A.

2.

2A.

Flint Implements found in the Drift.

Group 2. Acute and Round-Pointed Implements.

*Fig 1. Found at Biddenham near Bedford. Length $6\frac{3}{4}$ inches
Greatest width $\frac{1}{2}$ inches. Greatest thickness $1\frac{1}{2}$ inches.*

Fig 1A Side view of the same.

*Fig 2. Found at St. Acheul near Amiens. Chipped from a pebble,
butt formed of the naturally rounded end of the Flint.
Length $6\frac{1}{2}$ inches. Greatest width $2\frac{3}{4}$. Greatest thickness $1\frac{3}{4}$ inches.*

Fig 2A Side view of the same.

Fig 1 & 2 Specimens of *Orbitolina globularis*. Fig 2 being perforated naturally and thus resembling the "Fossil Beads" (so called). The specimens figured are obtained direct from the Chalk and as the external structure shows have not been subjected to any rolling action.

Fig 3. Part of *O. globularis* magnified.

Fig 4. Necklace of Shells (*Dentalia*) found in a tumulus at Wintertonne Stoke, Wilts. with a Bronze dagger and Clay beads.

Fig 1. Flint Core (nat. size) in the Museum of the Royal Irish Academy.
 Fig 2. Flint flake from such a core.

Fig 3. Diagram to illustrate the process of flaking). A, represents the point at which the blow would be given to produce the flakes A.B. which would be characterised by a ridge passing down the front and a sharp cutting edge on each side whilst the back of the flake would be slightly convex.

Fig 4. Diagram showing the block of flint after the last process had been carried out. A would again represent the point at which the blow would be struck and A.B. the flake produced which would have a flat band passing down the front, this process would restore the block to its original form.

Length $3\frac{1}{4}$ inches.

2.

3.

4.

5.

Fig 1. Stone Hatchet mounted in Stag's horn from the ancient Lake settlement of Robenhausen, Switzerland.

Fig 2, 3, 4. Illustrations of similar mode of mounting hatchets.

Fig 5. Flint flake mounted in lower end of humerus of Red Deer (*Cervus Elaphus*)

Fig 2, 3, 4, 5 are from specimens in the collection of M. Boucher de Perthes obtained from the peat of the Valley of the Somme.

Fig 1 & 2. are from Specimens in the Collection of M. Boucher de Perthes obtained from the peat of the Valley of the Somme.

Fig 3. Digging Implements made from ulna of Bos (young) Robenhausen. Switzerland

Fig 4. Bone Implement Berwell Fen.

Fig 5. Piercing Implement made from splint bone (metacarpal) of Horse. Berwell Fen.

Fig 6. Piercing Implement made from Metatarsal bone of Red Deer (Cervus elaphus) Robenhausen.

Fig 7. 8. 9. Bone Chisel / Bos / Robenhausen.

Classification of Stone Celts

Fig 1. Class 1. Rectangular Scandinavian type.

Fig 2. Class 2. Cylindrical; sides rounded.

Fig 3 & 4. Class 3. Triangular; flat; circumference sharp-edged.

Fig 5. Stone Celt showing a number of faces from having been rubbed upon a flat surface.

Tools used in the manufacture of gun flints.

Fig 6. Quartering Hammer.

Fig 7. Flaking Hammer.

Fig 8. Knapping Hammer.

Fig 9. Solid Iron Stake.

1.
Length $6\frac{1}{8}$ inches.

2.
Length $5\frac{1}{4}$ inches.

Fig. 1 Chipped Flint-belt not artificially rubbed (Celtic period.)
 Fig 2. Chipped Flint-belt artificially rubbed, but not sufficiently
 to obliterate the chippings (Celtic period.)
 Both found, in a tumulus upon Upton Lovel Down, Wilts
 in 1801. by the late Mr. Cunningham (From Sir R. C. Hoares
 Ancient Wiltshire).
 Fig 3. 4. Stone Hatchets mounted, in Stag-horn found, in the
 Swiss Lake Settlements.

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

11.

12.

13.

Classification of Flint Arrow-heads.

Class 1. Fig 1 & 2 (Triangular.)

Class 2. Fig 3, 4 & 5 (Hollowed out at the base)

Class 3. Fig 6 & 7 (Stemmed the true barbed Arrow-head)

Class 4. Fig 8, 9 & 10 (Stemmed with wings or barbs prolonged)

Class 5. Fig 11, 12 & 13 (Leaf-shaped)

*All figured from the Catalogue of the Museum of the
Royal Irish Academy.*

Length $10\frac{1}{2}$ inches.

Thickness from 3 to $3\frac{1}{2}$ inches.

... Cutting edge.

Length $12\frac{1}{2}$ inches.

Fig 1. Aztec Stone Hatchet (very hard green stone, not jade) highly polished.

Fig 2. Aztec Knife of Chalcedony, mounted on wooden handle inlaid with mosaic work of malachite, bone, shell, and turquoise.

Both specimens in the Collection of H. Christy, Esq.

F.T. Stevens, del.

1.

2.

3.

Fig. 1. Grain-rubber 1 foot $4\frac{1}{2}$ inches long. 11 inches broad $\frac{1}{2}$ inches average thickness - made of sandstone.

Fig. 2. Top Stone of Quern 18 inches in diameter decorated with the Ancient Irish Cross carved in relief. the handle-hole is placed in one of the arms of the cross.

Fig. 3. Pot Quern 9 inches in diameter and $\frac{1}{2}$ inches high. It stands on three feet and has two handle holes in the upper stone and a meal-hole in the lower.

All three specimens are figured from the Catalogue of the Museum of the Royal Irish Academy.

- Fig 1. Group of Mounted Stone Implements from the South Pacific.
 Fig 2 & 3. Mounted Stone Implements (Worsaae's Antiquities of Denmark).
 Fig 4. Mounted Stone Hammer in the Museum of the
 Royal Irish Academy.
 Fig 5. Perforated Stone Hammer showing the deep splay for the hole.
 Fig 6. Mounted Stone Implement from North America in the
 International Exhibition 1862.
 Fig 7. Stone Adze used by Clalam Indians (Wilson's Pre-historic Man)
 E.T. Stevens' Art.

CLASSIFICATION OF BRONZE CELTS.

Fig: 1 & 2 Class 1. Fig: 6 Class. 4 Fig: 11 Class 7
 Fig: 3 Class 2 Fig: 7, 8 & 9 Class 5 Fig: 12, 13 & 14 Class 8
 Fig: 4 & 5 Class 3 Fig: 10 Class 6 Fig: 15 Class 9

PLATE 13.

1. Spanish Bronze Celt, 7 inches long, in the British Museum.
2. Bronze Celt, in the Bibliothèque Nationale at Paris.
3. Bronze Celt, found at Herculaneum, by Count Caylus, nearly 8 inches in length.
4. Bronze Celt, with loop parallel to axis, found in the bed of the Thames, near Wandsworth, $4\frac{3}{4}$ inches in length.
5. Bronze Celt, found at Pæstum, in the National Museum, Naples.
6. Bronze Shears, found at Pompeii, in the National Museum, Naples.
7. Bronze Celt, with ring attached, having on it a bead of jet, found at Tadcaster, in Yorkshire, and now in the British Museum.
8. Handle of Rapier-shaped Bronze Sword, Dr. Petrie's collection.
9. Bronze Dagger, with handle found in a tumulus at Brigmilston, Wilts.
10. Bronze Dagger, with ivory handle, found with two bronze spearheads, in a tumulus at Blandford, Dorset.
11. Dagger formed out of the leg-bone of one of the large ruminants, $10\frac{1}{8}$ inches in length, found in the bed of the river Boyne.
12. Bronze Dagger with handle.
13. Bronze leaf-shaped Sword.

The originals of Fig. 11, 12, and 13 are in the Museum of the Royal Irish Academy.

Fig 1. Handled belt found, in Co. Tyrone, near Cookstown.

Fig 2. Handled Iron Hatchet in Belfast Museum.

Fig 3. Handled belt from Mexico.

Fig 4. Handled belt (4 ft 9 in. long), carved on an ancient
Sepulchral Monument at Lok-maria, Ker Brittany.

Fig 5. Handled Bronze belt (13 1/2 in. long) found in the bed
of the River Boyne, near Edenderry.

Fig 6. Handled Bronze belt found, in a humulus at Everley, Wills.

Fig 7. Handled Bronze Hatchet found at Pompeii

E.T. Stevens. del.

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