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REPORT AND COMMUNICATIONS.

REPORT

PRESENTED TO THE

Cambridge Antiquarian Society,

AT ITS FORTY-SECOND ANNUAL GENERAL MEETING,

MAY 22, 1882,

WITH AN ABSTRACT OF THE PROCEEDINGS OF THE SOCIETY,
1881—1882.

ALSO

Communications

MADE TO THE SOCIETY.

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REPORT

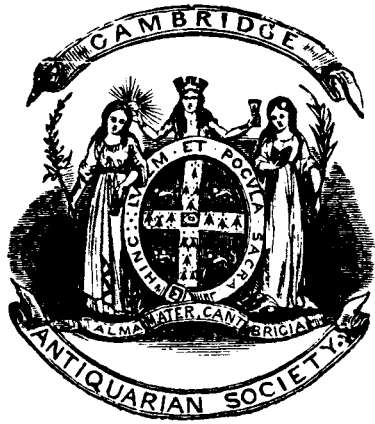
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WITH APPENDIX.



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1884

Cambridge:

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REPORT.

SINCE our last Annual Meeting in May, 1881, excursions have been organized by a Committee of the Society to Royston, Saffron Walden, and St Ives, which have been well attended and have produced interesting communications on the architectural and antiquarian features of each locality visited. In February of the present year the Rev. J. COLLINGWOOD BRUCE, LL.D., an Honorary Member of our Society, gave a lecture on Hadrian's Wall in North Britain, which was copiously illustrated by water-colour drawings and diagrams: and Mr J. W. CLARK has in two lectures given the Architectural History of Trinity College down to the end of the seventeenth century. Eighteen Papers have been read during the past year at the General Meetings of the Society, the attendance at which has proved the continuous and increasing interest felt in archaeological studies. Excavations have been carried on at Girton and at Great Chesterford, and the results have been exhibited and described at meetings of our Society; but the most remarkable discovery in this county during the present year has been

at Wilburton, where on land belonging to Mr O. C. PELL, twelve swords, mostly with their scabbards, and one hundred and twenty-two spears were discovered last January.

Dr RAVEN'S *Bells of Cambridgeshire*, in the octavo series of our Publications, and the two delayed numbers of our Annual Reports and Communications for 1878-79 and 1879-80 have been issued to Members: a Supplement to Dr RAVEN'S *Bells of Cambridgeshire* is in the press, and the Reports and Communications for 1880-81 and for 1881-82 are, the former in type and the latter in preparation, as is also the new edition of Professor BABINGTON'S *Ancient Cambridgeshire*.

Fifty-nine new Members have been elected into the Society, which now numbers 274 Members; four have withdrawn, and three have been removed by death. By one of these, Mr T. H. NAYLOR, M.A., our Museum was lately enriched with several memorials of the STUART family. By the death of Dr FERDINAND KELLER, last July, in his 81st year, the Society has lost one of its most distinguished Honorary Members. He founded and from 1832 to 1871 was President of the Archaeological Society of Zürich, but he will be chiefly remembered in connexion with the Lake-Dwellings, the first recognition of which (at Ober-Meilen on the Lake of Zürich) in 1853 was due to his sagacity.

The following Institution has been admitted to an exchange of publications with our Society:

The United States Geological Survey, Washington, D.C.
(Feb. 27, 1882).

APPENDIX.

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I. AN ABSTRACT OF THE PROCEEDINGS AT THE MEETINGS OF THE SOCIETY

DURING THE YEAR ENDING

MAY 22, 1882.

Nov. 14, 1881. The President (Rev. R. Burn) in the chair.

The following new Members were elected :

- W. Austen Leigh, Esq., M.A., King's College.
- Rev. E. J. Beck, M.A. (Clare Coll.), Rotherhithe Rectory.
- W. M^c Oran Campbell, Esq., Bottisham Hall.
- A. Deck, Esq., King's Parade.
- A. N. Disney, Esq., B.A., Trinity College.
- F. N. Fordham, Esq., Royston, Herts.
- E. Freshfield, Esq., M.A. (Trinity Coll.), 5 Bank Buildings, London.
- Very Rev. J. S. Howson, D.D., Deanery, Chester.
- W. Lloyd, Esq., Myvold, Wednesbury.
- G. T. Molecey, Esq., St Martin's, Stamford.
- S. H. Vines, Esq., M.A., Christ's College.
- Rev. C. Allix Wilkinson, M.A. (King's Coll.), Boxworth Rectory.

Mr Lewis read a paper by Mr C. W. King on two early Christian *intagli* of lapis lazuli, which had lately come from Alexandria, and passed into the cabinet of Mr Lewis. (See Communications, Vol. V, No. VIII.)

Prof. Hughes exhibited a bronze helmeted bust* from the Banks collection, upon which he offered the following remarks :

"It consists of the bust proper, seven inches high, the helmet, two inches high, and the crest, which stood one inch above the helmet. They were all separated, most likely owing to the decomposition of the solder which had originally held them together, as the ragged edge of the metal within the bust makes it improbable that the helmet was intended to be lifted off.

* Since bought by the Fitzwilliam Museum.

The crest was found among some odds and ends in a sepulchral urn in the collection, but I feel sure that it belonged to the helmet. The pin on the under surface was not inserted into a hole in the helmet, but simply soldered on, and was intended to keep the crest raised above the helmet, as is common in many similar cases in the British Museum. The mark of the soldering can be detected on the helmet. The bust is that of a Roman Emperor ; Mr King suggested that it represented Marcus Aurelius.

"The chief interest of the specimen is however in the helmet, which represents the face of a Gaul or Briton. The same character of face, the same lips and moustache may be seen in the statue of the Gaul in the Villa Ludovisi, on the Dying Gaul of the Capitol, or the earlier Pergamene sculpture. On the forehead is an ornament like the ring money of ancient Ireland or modern Africa ; and behind that on either side above the ears are two snake-like figures. As it would not do to represent the hair in strong relief on a casque, it is merely indicated by a rough etching, which seems also used for shading on other parts of the face. The specimen is said to have been found near Cottenham, but unfortunately I am not in possession of the exact circumstances of the find. From the same district came the Earith bronze now in the British Museum, and various less important bronze objects in the Banks collection and elsewhere. It seems not improbable, therefore, unless these were spoil carried away from the Romans, that we may find by and by that there were stations and villas of considerable importance and wealth on the gently rising grounds that run into the Fen lands north of Cambridge. But as there is no place in the district where the public and market-folk can see what has been already found, we cannot expect to learn, except by accident, of any discoveries that may be made."

Dr Bacon shewed two vases or jugs of mediæval manufacture dug out recently at Ditton. One was unbroken, and had remains of a dark bluish colour, and was glazed. It was $10\frac{1}{2}$ inches in height, the mouth had a diameter of 4 inches, and the greatest circumference was 23 inches. The other was of a light red colour and glazed, and had some yellow lines of ornamental tracery: the measurements of this were very nearly the same as the last. The capacity of each would be about $3\frac{1}{2}$ pints. They were found in an old well which was being excavated, and at a depth of 18 feet. The red one was broken by the pick of the excavator. The vases belong to Mr Roe, of Cambridge, who kindly lent them for exhibition.

Mr Wilkinson exhibited a silver-gilt vase 25 inches high, enriched with repoussé work of the close of the 16th century. A shield on the inside of the cover bears the arms of the Austrian family of Mülch. Figures in relief representing Faith, Wisdom, and Justice adorn the lower part of the bowl: the cover is decorated with oval medallions, and surmounted by a Minerva in full armour.

Mr J. E. Foster drew attention to the similarity between this vase and one in the South Kensington Museum, that had been attributed to Wentzel Jamnitzer of Nürnberg, and dated about 1534.

Mr T. H. Naylor exhibited and kindly presented to the Society a case containing six engravings, two bronze medals, a reprint of *Eikon Basilike*, and other memorials of the Stuarts. (See p. lvii.)

Mr Foster remarked that the portrait of Charles I. now in the vestry of S. Michael's Church in this town appeared to have been copied from the same original as one of those now given by Mr Naylor.

Mr F. N. Fordham exhibited two gold coins of James I, the one dating before, the other after his accession to the throne of England; they had been recently found near Royston.

Nov. 28, 1881. The President (Rev. R. Burn) in the chair.

The following new Members were elected:

J. J. Brigg, Esq., Trinity College.
 L. Copeland, Esq., King's College.
 G. M. Edwards, Esq., B.A., Sidney Sussex College.
 Marshall Fisher, Esq., Lynn Road, Ely.
 G. S. Gibson, Esq., Saffron Walden.
 Rev. J. J. Halcombe, M.A., Balsham Rectory.
 Rev. R. E. Hooppell, LL.D., Byers Green Rectory.
 Rev. E. C. Ince, M.A., Sunbury House, Watford.
 J. P. Postgate, Esq., M.A., Trinity College.
 R. Scriven, Esq., Trinity College.
 A. Hamilton Smith, Esq., Trinity College.
 Rev. K. A. Smith, The Cambridge Road, Ely.
 C. Turner, Esq., 5 Park Terrace.

Dr Bryan Walker read a Communication on the units of measurement in Domesday, and began by referring to the variety of opinions about the size of a Norman *Hide*, the principal being (1) that it was about 240 modern statute acres; (2) that it was 100 or 120; (3) that it was unconnected with acreage and a mere assessment unit. In each of these views, he believed, an element of truth is contained. He shewed by tabulation of the Hides assigned to the Manors in Cambridgeshire, that the *average* hide would be throughout this county the same as calculation has made it in Lincolnshire, Dorset, Somerset, Salop, Sussex and Leicester, from 240 to 250 acres: that, however, it varied greatly in different hundreds, from 135 acres in the well-cultivated hundred of Chesterton to 474 in the woodland and marsh of Staplehow. By comparison of entries the *virgate* appears to be $\frac{1}{4}$ of the Hide, and equal to 30 acres. This apparent discrepancy arises

from the fact that the virgate is $\frac{1}{4}$ of the *measured* part of the Hide, each Hide averaging 120 acres of measured land, *i.e.* of plough-land and enclosed meadow, and 120 acres more unmeasured but represented by its share in the common pasture. The hide was generally larger where woodland prevailed, the woodland being of little value; and the Hide was always an amount of land chargeable with six shillings of Danegeld.

He called attention to the two sorts of acres used in the survey, one five times as large as the other; to indications that the Jurics of different hundreds used different acres in their reckonings; to the number of oxen in a team (eight); the amount of meadow considered adequate to maintain a team (5 to 8 acres), and the amount of wood denoted by "sufficient for so many swine," probably some 12 acres for each hog. (See Communications, Vol. V, No. IX.)

Professor Skeat made the following remarks upon points which Dr Walker had raised :—

The use of *centum* in the sense of 120 is paralleled by the use of the English word *hundred* in the same sense. There is a good instance of this in Fitzherbert's Book on Husbandry, where he speaks of a hundred of herrings, clearly meaning 120 from the remarks on the price of them. Again *terra*, in the sense of *arable* land, may be paralleled by the use of *land* in English. There is a good example in *Pierce the Ploughman's Crede*, where the term *land's end* has reference to the end of a field which is being ploughed. So also in the provincial English *headland* (also corrupted into *adland*), used of the end of a field where the horses turn, and which is last ploughed. The etymology of *hide* is given in my Etymological Dictionary, where I shew that it is connected with *hive*, in the old sense of "household," and has no connexion with *hide*, a *skin*, nor with the tale of queen Dido, who inclosed land with strips of skin.

Mr Bradshaw suggested that the variation in the amount understood by the term 'hide' might partly be accounted for by the fact, upon which Mr Frederic Seebohm laid great stress in his researches and discussions on this subject, that the hide was not a single piece of land, but a mass of often widely scattered pieces within the same manor. He mentioned a book which he had recently obtained from a collector at Liverpool on condition of its being placed in the University Library, which illustrated this. It was a *terrarium* or terrier of the *Campi occidentales Cantabrigiae*, and originally belonged to the University, though for some centuries in possession of Corpus Christi College. Here the actual holdings consisted of portions amounting to one or more *seliones*, a measurement which had been reduced to modern acreage by a later hand. The date of the book was about 1400; the date of the reduction to acreage was 1517. It appeared that, though a selion was, properly speaking, half an acre, there was no strict consistency, and five selions were by no means always five half-

acres. Going back from this point as certain, it would follow that a still greater variation would be found in attempting to reduce a hide to modern acreage, seeing that the hide was made up of a multitude of these small holdings.

Dr Walker agreed with Mr Bradshaw's remarks as to the scattered character of arable land in three fields, subdivided into *quarentenae*, and these into *seliones*, and referred to a terrier of Landbeach which had been drawn up by Abp. Parker, when Master of Corpus, in 1549.

Professor Hughes, after alluding to the difficulty that we find in this country when we attempt to assign an exact date to fictile objects of any period later than Roman, with the exception of the Saxon cinerary urns, went on to lay before the Society the results of his enquiry into the age of certain vessels and tobacco-pipes which were found under one of the two large elms known as "the Sisters," which were blown down in the gale of Oct. 14, 1881, in the grounds of St John's College.

He referred to a paper lately communicated to the *Cambridge Review*, in which Mr J. W. Clark gave 1630 as the probable date of the laying out and planting of the grounds at the back of St John's. It was not necessary to assume that there were no trees on any part of the area previous to that time, nor on the other hand was it likely that all the trees planted subsequently to that date were planted at exactly the same time; still, considering all the evidence, he thought it almost certain that there were no trees then standing there of earlier date than that assigned by Mr Clark.

From an examination of the trees themselves however, and of the associated objects, he was inclined to reduce their age somewhat. Elm-trees might be expected to arrive at their full growth in about two centuries, but they might continue to develope their large roots much longer. On trying to determine this from an examination of the rings of growth many difficulties were met with. He could not count exactly the same number on all sides, nor always trace a ring round from one side to the other. At the centre, perhaps partly owing to arrested growth when the tree was transplanted, it was not easy to make them out; and round the margin, where their smaller width marked the declining vigour of the plant, they ran together and often could hardly be detected at all.

Taking the direction where they appeared to be most clear, and always where there was a doubt deciding in favour of the smaller number, he made out 218 rings. If we allowed 15 years for the last almost stationary period, and 10 for rings missed in counting and 5 for the young tree not represented in the centre, we should get 248 years as the age of the tree. But if we considered that the rings were fully and fairly counted, and that there had been no long stationary period at the end, and that what was allowed for the early period of growth and not shewn in the centre, where now sawn across, was more than compensated for by the age of the tree when

transplanted to that spot, we might have to reduce the age of the tree's growth where it then lay within the 218 years, rather than extend it to 250. We were pretty safe, he thought, in referring them to the seventeenth century, but probably they belong to the latter half of it.

The soil on which the trees were planted was made ground consisting partly of clay, such as might have been thrown out in digging the adjoining ditch, and partly of rubbish from dwelling-houses. In this earth immediately under the trees various objects of domestic use had been found. Those to which he had been able to assign any approximate date from other sources agreed very well with the above estimate, and for the remaining more doubtful cases it was useful to have this record for future guidance. Several tobacco-pipes had been found, all belonging to the class with elongated bowls, constricted openings, and sometimes a milled margin. In one case there was a star or cruciform flower stamped on the spur. They were much like pipes referred to the time of Charles II. and approached in form those found in rubbish of the time of William III. It seemed probable that then, as in later times, it was usual to provide customers or guests with new clay pipes, and when these were at all blackened or broken to throw them away. He could not otherwise account for the great numbers of pipes found in old rubbish of the 17th, 18th and 19th centuries.

There were several very different kinds of ware represented; among them the bottle-shaped jug known as a Bellarmine or grey beard, which would probably have reached this country from Cologne, or might possibly have been manufactured in Britain in the early part of the 17th century. Of the bright blue flowered stone ware, similar to that which was being so largely reproduced in recent times, he had not found any himself; and he felt that there was always a source of error in the possibility of there having been new earth dug in about the roots of the tree during its early period of growth.

There were several pans, pipkins and other vessels of different sizes and shapes, of red earthenware with a rough glaze. Vessels of this class range back to a very remote period, while they are also very like those used at the present day. They have all the common lead glaze. He did not feel sure that any of the objects had the salt glaze which came in during the last quarter of the 17th century. There were pieces of several gourd-shaped glass bottles with long necks, and one small piece of glass, which looked as if it had formed part of a stained glass window. On the whole it seemed to him that the objects probably belonged to the third quarter of the 17th century, and being an associated series with so much collateral evidence as to their date, he thought it would be interesting to keep them together for the present.

Professor Babington said that there is usually much difficulty in counting correctly the rings of annual growth in old trees, for many of the rings

are extremely thin. It is only by following them successively as far as they are clearly seen, and then tracing the last ring thus seen round the stem, until a spot is arrived at where the succeeding rings are manifest, that one can really count them. This change of position has often to be made several times in old trees as we advance from the centre to the circumference. Season, exposure, the existence of large branches, modify the quantity of wood deposited on the several parts of the circumference of trees. Often the rings are very thick in one part, and very thin, so as to be nearly undistinguishable, in another part. The roots do not in any way affect the amount of wood deposited.

Dr Hooppell gave an account of the exploration recently made of the Roman Station of Binchester, near Bishop Auckland, on the estate of the Bishop of Durham, who had taken the greatest interest in the work, as had also his predecessor, Bishop Baring. Dr Hooppell said that the Roman name of the Station was *Vinovium*, of which there could be no doubt, as the distances in Antonine's *Itinerary* decisively fixed it. The great Roman road from York to the border of Scotland, called in the neighbourhood the Watling Street, ran right through the centre of the Station. A trench had been dug for more than a hundred yards along one side of the street, exposing the fronts of numerous extensive buildings, standing in some cases ten courses of stones in height, and presenting some very remarkable features. One point of especial interest was the discovery, in every part of the Roman town, of three horizons, or different levels of building, indicating three successive occupations of the fortress by the Romans, with intervals of abandonment and desolation between. Dr Hooppell's address was illustrated by a large number of beautifully executed painted representations of the remains, in which this fact was very strikingly brought out. Another singular feature was in connexion with the massive rampart, which encircled the Station. At the north-east corner, where it was found to be in admirable preservation, the wall was eight feet six inches in breadth, and beneath it, at one point, was an excellently constructed arched culvert, paved at the bottom; it was furnished on the outside with a huge stone, partially closing the orifice, and communicated with a channel, which led to a square chamber in the bottom of the fosse, the use of which had remained, to the present time, an unsolved mystery. Dr Hooppell described also a very perfect hypocaust with a large chamber above it, in which the flue-tiles when found were all in position, with decorated plaster upon them. In this chamber a statue of Flora, or Fortuna according to some authorities, had been broken in Roman times, and put to an ignominious use as a building stone in the time of Constantine. A most interesting votive tablet, dedicated to Aesculapius and Salus by the medical officer attached to the *ala* of Vettonian Dragoons, was also found in this neighbourhood. At some distance from the bath mentioned

above, another bath was explored, of a circular shape. In this was found a very perfect strigil, and a number of coins of the earlier emperors.

The cost of the exploration had been borne by Mr John Proud, of Bishop Auckland, who had presented the whole of the small objects (and they formed a very fine collection) to the Durham University Museum. Among these objects was a small jasper intaglio, engraved with the heads of Bacchus and Silenus, Janus-wise, which was found on the spot, during the progress of the work, by the Rev. T. C. Tatham, B.A., of Trinity College; an engraving of it has been published in Mr Sandys's edition of the *Bacchae* of Euripides (Cambridge, 1880), at p. cxlviii.

Besides the coloured representations of the remains, Dr Hooppell exhibited very complete and carefully prepared plans of all the details of the Roman work discovered, which had been drawn by Mr J. W. Taylor, surveyor and architectural draughtsman, of Newcastle-on-Tyne. It is expected that the finest portions of the remains will shortly be roofed over and permanently preserved.

Professor Hughes suggested that the water-way under the rampart may have been the outfall of the baths. From the minerals which Dr Hooppell had ascertained to occur in it he thought that the water must have been warm. In that case the open tank below might well have been for general use for washing clothes and so on.

Mr A. G. Wright, of Newmarket, exhibited a leaf-shaped arrow-head found on the training-grounds, and a celt (measuring $6\frac{1}{2} \times 3\frac{1}{4}$ in.) from Icklingham, which had taken this shape from natural causes, being a water-worn mass of *serpulæ* from the Oxford clay.

Feb. 27, 1882. The President (Rev. R. Burn) in the chair.

The following new Members were elected :

W. B. F. Blunt, Esq., King's College.
 J. Bryan, Esq., Thornles, Trumpington Road.
 Professor E. C. Clark, LL.D., Trinity College.
 Professor P. W. Latham, M.D., Downing College.
 Rev. H. E. Maddock, M.A., Clare College.

The President introduced to the meeting Dr J. Collingwood Bruce, of Newcastle-on-Tyne, observing that probably most of the members present were aware of the prolonged study which Dr Bruce had devoted to the Roman wall, and of the important and elaborate work he had published about it. This great fortification, extending across from Carlisle to Newcastle, presented one of the grandest archaeological problems which Englishmen could consider.

Dr BRUCE then proceeded to give a lecture, illustrated by numerous large coloured sketches, plans, and diagrams, upon the History and Present State of Hadrian's Wall in North Britain.

It was well known that Agricola came to Great Britain about A.D. 81 and advanced northward. Before proceeding to the conquest of Caledonia he established forts to secure his rear, in order that he might have supplies brought up. These forts were planted in the narrowest parts of the island between the Tyne and the Solway, where Hadrian afterwards built his wall. Remains of some of Agricola's camps were found in the line of Hadrian's wall. After Agricola was recalled, the country fell into disorder, and in the time of Hadrian that great emperor found it necessary to come to Britain himself, bringing his wife Sabina with him. His engineers seemed to be resolved on constructing a fortification stronger than that of Agricola. Hadrian not only planted forts between the two seas, but connected them together by a wall. Not that this wall was a mere defence to keep out the Caledonians; it was not. It was a line of military operation. In proof of this Dr Bruce referred to the numerous gateways leading northwards through the camps on the wall, and still further to the camps on the line of Roman road going into Caledonia.

Dr Bruce then showed a map of the course of the wall, and of the Tyne in relation to it, also of the river Eden, which joined the Tyne at the east end of the wall or "Wall's end," from which our best coal took its name at the present day. The river Eden was considered sufficiently strong as a means of fortification to render it unnecessary to extend the wall further in that direction. But at its mouth two forts were erected, and in their locality some very interesting results had been discovered. One of the forts was opposite Jarrow, the birthplace of the Venerable Bede. From this point the wall ran on to the high ground above and to the north of the Tyne valley, where agriculture could be most successfully conducted, and which, it seemed, the Romans wanted to secure. The wall was continued to Bowness, where the Solway ceased to be fordable.

The next subject to be considered was the plan of the wall. First of all, it was about eight feet thick. How high it had been was not known; it was now about $9\frac{1}{2}$ feet in some places. Bede said it was $12\frac{1}{2}$ feet high. He was probably speaking of it in his own neighbourhood. Camden said it was fifteen feet high; and another writer said twenty-one. The facing stones were of sandstone, very well squared to a uniform size and projecting well into the wall, so as to bind it well together. No tiles were needed. The mortar to this day was in some instances harder than the stone itself. To the north of the wall was a ditch, which in some places was about 6 feet deep and 15 feet across at the top. Stationary camps were planted at distances averaging four miles from one another, and varying in size from four to seven acres in extent. These camps usually had northern, southern, eastern and western gateways. The largest camps had two gateways on the

eastern and western ramparts. In addition to the camps, there were at distances of a Roman mile square enclosures measuring about 60 feet a side ; and now called "mile-castles." In all probability a number of soldiers were drafted off to occupy the spaces between the mile-castles for 24 hours, or for a week at a time. In addition to the mile-castles there were what were called 'turrets.' Dr Bruce himself called them stone sentry-boxes. These had been so much interfered with that he could not tell how many there had been. They were twelve feet square, and the walls were three feet thick ; the Romans making everything very substantial. Running alongside the wall, and always on the south side, was a military road. (A sectional view of the wall was here shewn with the accompanying earth-works.) The general opinion was that the whole of the wall and the earth-works formed part of one design, and that the whole was to be ascribed to Hadrian, and that Severus repaired it. The next drawing shewed in section the abutment of a bridge crossing the Tyne at Cilurnum, now called Chesters. [It might be interesting to explain how the Latin names of these places were known at the present day. A sort of army-list (*Notitia*) had come down to our time from the end of the 4th and 5th centuries, giving the names of the officers throughout the Roman world and where they were located. One chapter of this book related to the wall ; all the camps had been occupied by auxiliary troops commanded by Roman officers. Soldiers of different nationalities were never stationed together : on the other hand neighbouring stations were never occupied by troops of the same nationality.] In the river at Cilurnum could be seen, when the water was clear, the foundations of the piers of the bridge. The character of the masonry indicated that it had been constructed at two different periods of time. Drawing 2 shewed the remains of the gates of Cilurnum, with the holes in the stone still remaining in which the pivots of the gates used to turn. Drawing 3 gave an idea of the character of the ground over which the wall was carried in the central part of the district. A great basaltic dyke ran for 10 or 12 miles through the country in this neighbourhood. Here was part of an altar erected to Jupiter, and bearing the usual initials I. O. M. Near the station represented in this drawing was an amphitheatre, similar to those found at some other parts of the wall, and intended as a place of amusement for the soldiers. Drawing 4 shewed one of the great basaltic rocks over which the wall ran. Some people asked what could have been the use of carrying the wall over such a rock. The late Earl of Carlisle had remarked to him, whilst they were exploring the locality together, that he thought it was a kind of red-tapism that prompted the Romans to carry this wall on without a break, whether wanted or not. Drawing 5 shewed "The Nine Nicks of Thurlow." These were nicks in the mountainous chain of rocks, the wall running pertinaciously over each of them. The interior of the wall was well made of rubble, but the facing was always freestone. Drawing 7 represented the northern fosse of the wall. Some

of the enormous stones lying about had been split by wedges inserted into where the veins of quartz ran through the stone. Three of the stones shewn in the picture had originally been one, and the whole mass must have weighed 13 tons. In another stone the holes had been made, ready for the insertion of the wedges, but it had not been split. In some of the mile-castles the level of the floor had been raised, and in making excavations traces of devastation were found, and marks of fire. It seemed as if the soldiers had been driven out for a time, and that the invaders had burnt everything combustible; and that, when the soldiers regained possession, they did not trouble themselves to clear out the ashes and *débris*, but laid down a second floor on the top. At one place had been found a lady's ear-drop, a gentleman's finger ring, and a coin of Commodus. They knew that in the reign of Commodus (180—192 A.D.) the Caledonians made an irruption on the wall, sacked one of the Roman stations, and killed one of the commanders. They fancied that the commander had been retreating with his wife when he was killed, and hence the discovery of the jewellery. Dr Bruce next showed some drawings of altars found at different stations on the wall, some gravestones, and some other stone objects. On one slab of stone was carved a representation of Ceres, and some ladies had remarked that the goddess was dressed in the fashion of the present day, or rather in a fashion which was now just going out. Here was a figure of Victory, a female careering over the earth with outstretched wings, her garments flying behind her; she bore in one hand a palm, and in the other a laurel wreath. In concluding, Dr Bruce incidentally observed that the little Lady who held the sceptre of England at the present day, commanded a world much larger than any of the Cæsars ever did.

The Chairman remarked that they had been almost surprised at the extremely wide and accurate knowledge of the Roman wall possessed by Dr Bruce. He seemed to know every stone of it by heart.

Dr Bruce called attention to a number of drawings of coins referring to Biblical History, which had been taken by photography. The first process was to make a copy of the coin in plaster of Paris. The coins themselves could not easily be photographed in consequence of the glinting of the light and the dark specks which appeared here and there. The plaster copy was photographed, and then a strong light was passed through the negative, by which the image of the coin was magnified and projected on to a screen and again photographed.

Professor Babington rose to say a few words to express his thanks and those of the meeting to Dr Bruce for his extreme kindness in bringing all these carefully executed diagrams to illustrate his lecture. They all knew that Dr Bruce's knowledge of the wall was beyond that of any person living, that he had studied it with the utmost care, and had published a work which had as great a reputation as any person could wish for, a work

which might be said to be a complete, final and conclusive monograph of the subject. No doubt other things would be exposed by further excavations, but he could not help believing that up to the present time no very essential point had been discovered, which was not laid down already in the beautiful map, that had been prepared by Dr Bruce, and published at the expense of the Duke of Northumberland. It was remarkable that in this country we should have such a work as the Wall. Possibly some persons present had for the first time been made aware of its immense extent and bulk by the vivid description that they had just listened to. It was certainly a work such as not many countries could boast of possessing. There were a few similar walls elsewhere, but he was not aware that any one of them had been examined in such perfect detail as this one. Dr Bruce did not mention that there was a wall, not exactly similar to Hadrian's, but a line of fortifications, drawn across the narrow part of Scotland. There was no masonry in it, but it had been a very strong fortification. The theories which had been started about the wall were undoubtedly numerous, and it had been stated by many antiquaries, before Dr Bruce's researches were undertaken, that the earthwork was a work separate from the wall. But that theory he thought had been shewn to be a mistake. In addition to the vote of thanks he had moved, he would also move that Dr Bruce be asked to honour the Society by allowing his name to be enrolled among its Honorary Members.

Dr Luard seconded the proposal, and said that it had always appeared to him a remarkable fact in the history of antiquity that we should know so little of the Roman occupation, which lasted for four centuries—a period as long as from the Wars of the Roses to the present time. They saw strikingly the power that the Romans had of adapting their work for whatever purpose it was intended.

Dr Pearson referred to the somewhat similar Roman wall in Southern Germany, and supported the resolution, which was cordially agreed to.

Dr Bruce briefly expressed his extreme obligation to those present for having listened to him so long, and said he felt very highly honoured by the proposal to record his name as one of the honorary members of this distinguished institution.

March 13, 1882. The President (Rev. R. Burn) in the chair.

The following new Members were elected :

- J. E. Sandys, Esq., M.A., St John's College, Public Orator.
- A. P. Allsopp, Esq., Trinity College.
- E. M. Beloe, Esq., St Ann's, Lynn Regis.
- G. F. Blake, Esq., Corpus Christi College.

A. B. Bullock, Esq., Trinity College.
 Edm. Foster, Esq., Junior, Lexham Gardens, London, S.W.
 Major C. H. Gardner, Hills' Road.
 S. R. Ginn, Esq., 64 St Andrew's Street.
 H. Johnson, Esq., 18 Trumpington Street.
 O. Johnson, Esq., University Library.
 J. J. W. Livett, Esq., St John's College.
 E. J. Mortlock, Esq., M.A., Trinity College.
 O. Papworth, Esq., 9 St Andrew's Hill.
 W. Ridgeway, Esq., B.A., Gonville and Caius College.
 O. Salvin, Esq., M.A., F.R.S., Trinity Hall.
 Rev. E. C. Selwyn, M.A., King's College.
 J. V. Smedley, Esq., M.A., Corpus Christi College.
 H. T. Stearn, Esq., M.A., King's College.

Mr MARSHALL FISHER exhibited and described a vase of red terra-cotta, 6½ in. high, together with other Roman pottery in fragments and horse-bones, from Downham Field, about a mile and a half to the north of Ely Cathedral: the vase was discovered about 18 inches below the surface during drainage-operations on land in the occupation of Mr W. Pate.

Professor HUGHES described some fragments of Roman pottery and other objects exhibited by Mr W. W. CORDEAUX, who communicated the following remarks.

They had been found at the depth of three feet in Humber deposit at Great Cotes in North-East Lincolnshire by workmen, who were under-draining old pasture-land. Along with the pottery were sawn bones, pieces of glass, and some very curious tube-like formations in considerable masses, which Professor Hughes explained to have been produced by concretionary action around roots of plants, also shells of the common cockle. Beds of ashes were also passed through, but these may have been of more recent date. The field, known by the name of the Little Nooks Close, adjoins the bank of a very old drain, called the Old Fleet, which formerly, as now, received the drainage of some portion of the Lincolnshire Wolds. It is situated within an old embankment, erected as a barrier against the Humber, but now within the bounds of a more distant and recent earth-work, at a considerable distance from any house. At the time this pottery was in use, the drain must have been a large creek with sloping mud-banks bordered by "filitie" lands (local term for land beyond the sea-embankments overgrown with sea-living plants and occasionally flooded at high water), for such was once the condition of much of the lowlands in this district bordering the sea. The Romans no doubt used this creek as a convenient harbour up which to run and beach their vessels, and disembark their cargoes for transport to the nearest station at Stallingborough, distant as the crow flies a mile and a half, whence the goods could be further trans-

ported inland to the different settlements and camps on the wolds. The author did not think that the fragments discovered belong to pottery made on or near the spot, but they were probably the refuse of cargoes thrown overboard as rubbish. Stallingborough was a third-rate Roman station, Roman coins having been found there. We know that Offa there held his court, and that it was a place of importance in the palmy days of the Mercian kingdom, and if it was a place of importance in those days the probabilities are that it was a Roman station, since the old English preferred to occupy Roman settlements rather than to found fresh places for themselves. Pottery similar to this is found at Worlaby, South Kelsey, and many other places in North Lincolnshire, the style and kind almost if not quite peculiar to this part of the country ; occasionally we find in conjunction with it fragments of rough sun-dried pottery, the clay of which has been mixed with pounded calc-spar.

Mr Reade said he had been disappointed in his hope of laying before the Society a complete monograph of the Minster-Church at Aachen, but such facts as he had been able to collect he would proceed to narrate. The church was in historical interest quite unrivalled by any building north of the Alps, and as an architectural landmark stood alone, having been completed in the year 804. Its prototype must be looked for in the churches of the Exarchate, and particularly in S. Vitale at Ravenna. There is no doubt that it was largely the work of Italian artists. The architect was probably Ansigis, Abbot of Fontenelle near Rouen. In general design it bears a considerable resemblance to S. Sepulchre's Church, Cambridge, which was built 300 years later ; but it is on a far larger scale. The whole of the interior was covered with mosaics, which were destroyed in the great fire in 1656. Mr Reade exhibited an interesting engraving made before the fire, and shewing the then disposition of the exterior. The tall 14th century choir was added by the Burgomaster Gerhard Chorus, and is a work of great lightness and bold design. The Octagon is surrounded by small chapels, and Mr Reade gave detailed information as to the original destination of these. He also exhibited "restorations" of the original work given to him by Mr Rhoen, architect, of Aachen ; who had also presented him with some of the original mosaic cubes used by Charlemagne's artists, which he had the pleasure of shewing to the Society. The bronze doors and railings to the Triforium were at least as old as the building itself. The temples of Italy had been laid under contribution, and had supplied this church with many polished marble columns of beautiful workmanship. The church was formerly connected with the Palace by a vaulted arcade. The great emperor, Karl, who founded the church, was buried within its precincts, but the precise spot was unknown. In the year 1000 A.D. his tomb was opened by Otto III, but Mr Reade gave strong reasons for the belief that the poetical descrip-

tion of the opening of the tomb was incorrect. His bones were exhumed 352 years after his death. Much of the furniture of the cathedral was of extraordinary interest, particularly the marble throne, upon which thirty-seven Emperors were installed ; the pulpit, which was a gift of Henry II, and is one mass of gold, jewels, and antique ivory carvings ; and the corona, given by Frederic Barbarossa, which is richly gilded and enamelled. The whole church was deserving of far more careful study than it had yet received. (See Communications, Vol. V, No. X.)

Professor Clark observed that he could confirm Mr Reade's remarks as to the structural resemblance between this church and that of S. Vitale at Ravenna from his recent studies at both places.

Mr Fawcett mentioned that, when he was at Aachen some years ago, he had a better opportunity of looking at the beautiful vessels containing the reliques: they were then in a chapel on the northern side of the triforium, and could be seen on special application. A private inspection could not be obtained when Mr Reade was there, owing to the occurrence of the septennial festival.

March 20, 1882. The President (Rev. R. Burn) in the chair.

The following new Members were elected:

John Death, Esq., Mayor of Cambridge.
 R. Hall Grubbe, Esq., Trinity College.
 T. Harley Jones, Esq., M.A., St John's College.
 F. A. Russell, Esq., High School, Harlesden.

Mr J. W. Clark then proceeded to deliver a lecture on "The description and history of the site of Trinity College," illustrated by diagrams made by the late Professor Willis. The substance of this Lecture will be found in Professor Willis's Architectural History of the University, &c., Trinity College, Chapter I.

Alluding to Professor Willis's opinion, as stated by Mr Clark, that *Gariŷte* signified a high tower, and was the origin of our present word *garret*, Professor Skeat said he was able to confirm that opinion.

Professor Hughes asked the lecturer's opinion as to the old tradition of "Mutton hole" and its connection with "Merton hall."

Mr Clark said he did not believe that "Mutton hole" had anything to do with Merton College at all. It was called "Mutton hole" from the earliest times. Quite early after the foundation of the college there was a chamber called Mutton hall. It afterwards got corrupted into Merton hall, and afterwards further corrupted into Mutton hole.

After some further conversation, on the motion of Professor Babington a vote of thanks was accorded to Mr Clark.

May 8, 1882. Professor Babington in the chair.

The following new Members were elected:

- T. H. Hills, Esq., 60 St Andrew's Street.
- S. L. Loney, Esq., B.A., Sidney Sussex College.
- G. A. Matthew, Esq., M.A., 7 Park Terrace.
- E. Nash, Esq., Royston.

Mr Lewis exhibited on behalf of the Mayor, Mr Death, two yellow vases ($5\frac{1}{4}$ in. and $5\frac{1}{2}$ in. high) that had been found during excavations in King Street last July at the depth of nine feet; they probably belong to the latter part of the 15th century, and are notable for the unusual perfection of the glaze. The ground appeared to have remained undisturbed for many years.

Professor J. E. B. Mayor, in the course of some remarks on "A marsupial in Cambridge in 1700," said "In a note on Lucian's *Vera Historia* i. 24, Moïse Du Soul (Solanus, as he called himself; Soulius, as he is also called by Reitz and Gesner) tells us that a live marsupial was exhibited here in 1700. He also cites Aelian *De Natura Animalium* i. 17, where the 'sea-dog' *κύων θαλαρρία* is said to give shelter to her whelps when danger approaches. Jacobs cites various authorities, the chief of which is Ambrose *hexaëmeron* v. § 7. These describe e. g. dolphins and seals as marsupial.

Passing from the spectacle to the spectator, Du Soul, I find that he is unknown to almost all biographers. Meagre notices in Haag *La France Protestante* and in Nichols' *Lit. Anecd.* iv. 286 are the only voices of the *vates sacer* to do him justice. He was grandson of Paul du Soul of Tours, Rector of the Academy of Saumur in 1657 and 1661. He fled from persecution; was in Cambridge (possibly drawn by the fame of Bentley) in 1700; A. M. per regias litteras 1701 (the year when Bentley was Vice-Chancellor); in 1702 a dissertation from his pen on the style of the New Testament was inserted in the *syntagma* of Rhenferd; in February 1708 he published at Cambridge a specimen of an edition of Lucian; in 1720 he sent his collections for Lucian to the Wetsteins; in 1722-23 we find him at the Hague; in 1722 he published at Amsterdam a French translation of Prideaux' *Connexion*; after the death of Augustine Bryan of Trinity he was engaged by Tonson to complete his edition of Plutarch's lives (London 1724-29, 5 vols. 4to). At that time he was living in the country. He lived to 1733 or beyond that year.

He has many allusions to events and persons and manners of the day; the *dragonnades*; a learned Syrian traveller, Theochari Dadichi, at the Hague at the end of 1722; John Ernest Schotts, a soldier who had served under Charles Gustavus of Sweden (1654-60), was born 12 March 1608 and died in Febr. 1723, having been a pensioner for more than fifty years, and walking to the last from Riswijck to the Hague every Sunday to attend

the Lutheran church; John Laughton, librarian of Trinity; James Upton; Richard Mead; William Sherlock; John Law of Lauriston; John Asgill; Ezekiel Spanheim; William Lloyd, bishop of Worcester; Thomas Irson, the Maskelyne of the day, who contrived a wooden head that would answer questions put to it in any language; the custom of drinking healths, *à propos* of a scholion *προπίνω σοι τῆς θεοτόκου Μαρίας*; hour-glasses in pulpits; men employed as ladies' maids, a fashion introduced by 'that disgrace of our age, Christina of Sweden'; Swiss porters; pilgrims to the Holy Land tattooed with the Holy Sepulchre, the crucifix, etc.; dumb-bells used by leapers in Scotland; magical virtue ascribed to the fat of bodies hung on the gallows; a butterfly giving signs of life seven days after losing its head." (See Communications, Vol. V, No. XI.)

Mr Griffith exhibited a series of rude pottery rings of two distinct types, found near the river at Harston and Barrington, which appeared to belong to the Roman period, and which he suggested might have been intended for sinking nets. He compared them with rings of the same two types found in the Swiss Lake-Dwellings, which have been supposed to be stands for round-bottomed vessels: of these rings Mr Lewis exhibited four, which he had brought with other pottery fished up from the Lakes of Bienne and Neuchâtel.

Mr Jenkinson gave some account of the further discoveries made at Girton in September last. The traces of the Roman period had culminated in a rubbish-pit, which contained below broken urns of Roman fabric several fragments of sculpture in oolite. He exhibited a lion's head¹, about the size of life, which showed good work, and which in spite of pieces knocked off the nose still looked not unimposing; and the *torso* of a military figure that had stood about four feet high; the broad collar, the belt, the close-fitting coat, apparently of metal, and a short kilt-like garment peeping from under it were clearly visible: one arm had been raised.

Large numbers of Saxon urns had continued to occur, a diagram showing upwards of seventy in an area 50 feet square. One had been made with a square piece of thick glass in the bottom, for what purpose was not known: a similar one, but smaller, had been procured from Haslingfield by Mr Walter K. Foster. The glass when looked through had a granular appearance, which might be due to the changes of temperature it would have to undergo when the urn was being baked and again when the hot ashes were placed in contact with it. There was nothing remarkable in the position or contents of this urn, which had lost all the upper portion.

¹ Figured at p. 40 in the second edition of Professor Babington's *Ancient Cambridgeshire*, Cambridge, 1883. On p. 39 of the same work are shown the glass vessels found in two Roman graves at Girton (*Abstract of Proceedings*, 1880-81, p. xxi); but the vase shown on p. 38 came from Gravel Hill Farm and is the one mentioned on p. 36.

This was also the case with another especially interesting urn, upon which appeared the ubiquitous *swastika* stamped in plain cup-shaped punchmarks on the bottom externally: the singular position assigned to this mark, which had otherwise not been observed among the forms of ornamentation occurring on this pottery, seemed to show that it had some special significance¹.

Three spindle-whorls had been found, one of stone and two of bone; two faceted crystal beads, shattered in the fire; and an implement of bone, consisting of two narrow pieces an inch and a half long, held parallel and six inches apart by a broad brace behind and two narrow ones in front, rigidity being secured by two rivets at either end². The two pieces first mentioned had each two deep notches on their inner edge, the lower of which notches was continuous in outline with a shallow depression cut in the edge of the braces. More beads and brooches had been found; and also a bronze basin³, of the usual Saxon type, in company with a bronze-hooped pail: these lay on either side of a body.

The cemetery appeared now to have been completely explored; and, although a certain poverty was observable among the objects found as compared with those from graves at Barrington and other places in the county, what there was had been investigated under unusually favourable circumstances. Had it been necessary to carry away at the time all that was found, a comparatively small number of these interesting urns would have survived the journey.

It was impossible and undesirable to enumerate in detail the discoveries and the observations that had been made; but from the finding of the first grave on the 25th of March, 1881, a minute diary had been kept, in which the bearings of every grave were recorded, as well as the position of everything it contained; and as such a diary might be interesting and valuable for comparison with the results of excavations in similar cemeteries elsewhere, it would probably sooner or later be printed in full.

¹ There is in the Museum at Bury St Edmunds a large Saxon urn from Redgrave, of coarse workmanship; below the usual horizontal lines on the shoulder are five large equidistant bosses, between each of which are three *swastikas* in a horizontal row. They are about half an inch in diameter, remarkably larger than the other punch-marks, which are of two kinds, one plain cup-shaped, the other a circular depression containing a cross in relief.

² Pronounced by Mr A. W. Franks to be a comb-case; a similar one with the comb in it is exhibited in the new Anglo-Saxon room at the British Museum (1883).

³ When this basin was lifted afterwards, a layer of bracken fern, on which it had been laid, was clearly visible, some of the fronds having been preserved by the superincumbent metal. A photograph was taken, but was not very successful.

May 22, 1882. Forty-second Annual General Meeting. The President (Rev. R. Burn) in the chair.

The following officers were elected for the ensuing year :

President:—Rev. R. Burn, M.A.
Vice-President:—Rev. H. R. Luard, D.D.
Treasurer:—W. M. Fawcett, Esq., M.A.
Secretary:—Rev. S. S. Lewis, M.A.

New Members of Council:—

Rev. Bryan Walker, LL.D.
 Henry Bradshaw, Esq., M.A.
 F. C. Wace, Esq., M.A.
 C. Bendall, Esq., M.A.

Auditors:—Swann Hurrell, Esq.
 F. C. Wace, Esq.

The following were elected Honorary Members :

M. Alexandre Bertrand, Keeper of the Museum at St Germain.
 Dr Emil Hübner, Professor of Archæology at Berlin.
 Commendatore G. B. de Rossi, Rome.

The Annual Report mentioned the excursions that had been organized since last October to Royston, Walden and St Ives, and enumerated several volumes recently issued or far advanced towards publication. Since last October fifty-nine new members had been elected into the Society, which had now 274 names on its roll. Allusion was made to recent discoveries of pottery, glass and other antiquities at Girton, and Great Chesterford, and especially of bronze implements¹ at Wilburton.

Mr Lewis read a paper by Mr C. W. King upon an antique cameo of agate-onyx (of which a cast was exhibited) measuring 8 in. × 7 in. : the bust engraved upon it was identified by the flowing and massy curls, by the *aegis*, and especially by the prominent forehead wreathed with chestnut-leaves, as Jupiter of Dodona, under which type it was added that a portrait of the emperor Antoninus Pius may possibly be adumbrated. (See Communications, Vol. V, No. XII.)

Dr Bryan Walker exhibited a Terrier of Landbeach drawn up in 1549 by order of Matthew Parker, who was then Master of Benet College and Rector of Landbeach.

¹ A paper on these implements was read to the Society of Antiquaries by Dr J. Evans (20 April, 1882) and will be published in the *Archæologia*.

Mr Jenkinson exhibited two Roman rings from Chesterford. One of these (fig. 1) was of brass ; and the device, a mask, was embossed upon a thin plate of metal, which had been soldered to the ring. The other



FIG. 1.

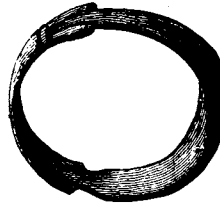


FIG. 2.

(fig. 2) was of iron, and exhibited in two places a simple form of decoration ; the metal being worked to resemble two ends meeting, one of which is forked to receive the other which tapers, and a few transverse lines convey the appearance of binding or lashing.

From a rubbish-pit recently encountered by the gravel-diggers several pieces of pottery were shown as specially interesting in form. A Samian saucer, having an upright inner rim and in addition to this another rim or horizontal ledge projecting outwards, was the first complete specimen of the kind that had been obtained ; and it was suggested that the outer rim was original to the design, the inner one being a development to increase the capacity. The potter's mark was *CONSTAS*. The bottom of a Samian saucer was also shown, which, after the upper part was gone, had had the fractured edges ground down, apparently to be inverted and used as a small cup. It showed a potter's name apparently unpublished, *SATINVS*. The only other vessel worthy of notice was of shining black ware, about six inches high. The upper part was concave in outline : there was a sharp angle between this curve and a short horizontal line inwards, from which the lower part springs with a convex outline to the base. As is usually the case in this type, the thinness of the lower part was remarkable when compared with the solidity of the upper part.

The rubbish-pit which furnished these objects had not yet been worked out, but its contents were singular. Three human skeletons occurred, whose position proved them to belong to the Roman time. The brass ring above described lay close to the head of one of them. A layer of burnt wood lined the whole width of the pit at a low level ; and the fragments of an *amphora* formed an adjacent layer almost as extensive.

II. LIST OF COUNCIL ELECTED MAY 22, 1882.

[Those marked * continue members of Council from last year.]

President.

Rev. ROBERT BURN, M.A., Trinity College, *Trinity Prælector in Roman Literature and Archaeology.*

Vice-Presidents.

JOHN WILLIS CLARK, Esq., M.A., Trinity College, *Superintendent of the Museums of Zoology and Comparative Anatomy.*

Rev. WALTER WILLIAM SKEAT, M.A., Christ's College, *Elrington and Bosworth Professor of Anglo-Saxon.*

Rev. HENRY RICHARDS LUARD, D.D., Trinity College, *University Registry.*

Treasurer.

WILLIAM MILNER FAWCETT, Esq., M.A., F.S.A., Jesus College.

Secretary, and Librarian.

Rev. SAMUEL SAVAGE LEWIS, M.A., F.S.A., Corpus Christi College.

Ordinary Members of Council.

*JOHN EBENEZER FOSTER, Esq., M.A., Trinity College.

*ALFRED PAGET HUMPHRY, Esq., M.A., Trinity College, *Esquire Bedell.*

*GEORGE MACKENZIE BACON, Esq., M.A., M.D.

*CHARLES CARDALE BABINGTON, Esq., M.A., F.R.S., St John's College, *Professor of Botany.*

*FREDERICK WHITTING, Esq., M.A., King's College.

*GEORGE MURRAY HUMPHRY, Esq., M.D., F.R.S., Downing College, *Professor of Anatomy.*

*THOMAS McKENNY HUGHES, Esq., M.A., F.S.A., Trinity College, *Woodwardian Professor of Geology.*

*FRANCIS JOHN HENRY JENKINSON, Esq., M.A., Trinity College.

Rev. BRYAN WALKER, M.A., LL.D., Corpus Christi College.

HENRY BRADSHAW, Esq., M.A., King's College, *University Librarian.*

FREDERICK CHARLES WACE, Esq., M.A., St John's College, *Esquire Bedell.*

CECIL BENDALL, Esq., M.A., Gonville and Caius College.

Curator.

F. J. H. JENKINSON, Esq., M.A., Trinity College.

Excursion Secretary.

N. C. HARDCASTLE, Esq., B.A., Downing College.

Auditors.

F. C. WACE, Esq., M.A.

SWANN HURRELL, Esq.

COUNCIL.

May 7, 1883.

President.

JOHN WILLIS CLARK, Esq., M.A., Trinity College, *Superintendent of the Museums of Zoology and Comparative Anatomy.*

Vice-Presidents.

Rev. WALTER WILLIAM SKEAT, M.A., Christ's College, *Elrington and Bosworth Professor of Anglo-Saxon.*

Rev. HENRY RICHARDS LUARD, D.D., Trinity College, *University Registrar.*

Rev. ROBERT BURN, M.A., Trinity College, *Trinity Prælector in Roman Literature and Archaeology.*

Treasurer.

WILLIAM MILNER FAWCETT, Esq., M.A., F.S.A., Jesus College.

Secretary and Librarian.

Rev. SAMUEL SAVAGE LEWIS, M.A., F.S.A., Corpus Christi College.

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CHARLES CARDALE BABINGTON, Esq., M.A., F.R.S., St John's College, *Professor of Botany.*

FREDERICK WHITTING, Esq., M.A., King's College.

GEORGE MURRAY HUMPHRY, Esq., M.D., F.R.S., Downing College.

THOMAS M^cKENNY HUGHES, Esq., M.A., F.S.A., Trinity College, *Woodwardian Professor of Geology.*

FRANCIS JOHN HENRY JENKINSON, Esq., M.A., Trinity College.

Rev. BRYAN WALKER, M.A., LL.D., Corpus Christi College.

HENRY BRADSHAW, Esq., M.A., King's College, *University Librarian.*

FREDERICK CHARLES WACE, Esq., M.A., LL.M., St John's College, *Esquire Bedell.*

Rev. GEORGE FORREST BROWNE, B.D., St Catharine's College.

JOHN EBENEZER FOSTER, Esq., M.A., Trinity College.

ALFRED PAGET HUMPHRY, Esq., M.A., Trinity College, *Esquire Bedell.*

NORMAN CAPPER HARDCASTLE, Esq., B.A., LL.B., Downing College.

Auditors.

F. C. WACE, Esq., M.A.

SWANN HURRELL, Esq.

Curator.

FRANCIS JOHN HENRY JENKINSON, Esq., M.A., Trinity College.

Excursion Secretary.

NORMAN CAPPER HARDCASTLE, Esq., B.A., LL.B., Downing College.

III. SUMMARY OF ACCOUNTS FOR THE YEAR ENDING DECEMBER 31, 1881.

<i>Receipts.</i>				£	s.	d.	£	s.	d.
Balance, 1880	.	.	.	.	.	.	262	10	8
Subscriptions	.	.	.	.	.	.	171	3	0
Life Members	.	.	.	.	.	.	63	0	0
Sale of publications:									
Messrs Deighton, Bell & Co.	.	.	.	.	4	2	0		
„ Macmillan & Bowes	.	.	.	.	5	15	1		
Members	.	.	.	.	1	11	10		
								11	8
G. E. R. Deb. Stock interest	.	.	.	.	.	.	7	16	6
„ sale of Stock	.	.	.	.	.	.	220	17	6
Due to Treasurer	.	.	.	.	.	.	6	17	0
							£743	13	7

<i>Payments.</i>			£	s.	d.	£	s.	d.
Octavo Publications, No. XVII :								
University Press	.	.	.	.	.	30	3	3
Octavo Publications, No. XVIII :								
University Press	.	.	.	108	17	4		$\frac{1}{2}$
Messrs Bonnewell	.	.	.	0	14	9		
				<hr/>			109	12
								$1\frac{1}{2}$
Report and Communications, No. XXI :								
University Press	.	.	.	.	.	139	13	0
Report and Communications, No. XXII :								
University Press (for printing)				80	5	4		$\frac{1}{2}$
" (illustrations)				112	17	3		
Messrs Cowell				3	10	0		
Indexing, etc.	.	.	.	1	18	6		
				<hr/>			198	11
								$1\frac{1}{2}$
List of Members (University Press)	.	.	.			3	7	0
Miscellaneous Printing	.	.	.			7	10	9
Library, for binding and small purchases	.	.	.			8	12	0
Fittings in temporary museum	.	.	.			12	0	6
Stationery, wages, carriage and postage	.	.	.			4	3	4
Purchase of Great Eastern Stock	.	.	.			230	0	6
				<hr/>			£743	13
							7	

Examined and found correct April 8, 1882.

F. C. WACE }
SWANN HURRELL } *Auditors.*

IV. LIST OF PRESENTS

RECEIVED DURING THE YEAR ENDING

MAY 19, 1882.

ANTIQUITIES, &c.

From Marshall Fisher, Esq., Ely:

Photograph of a Roman red terra-cotta vase lately found in Downham Field, Ely.

From T. H. Naylor, Esq.:

A portfolio containing six photographs of ancient furniture in the possession of the Donor.

A glass case containing memorials of the Stuart family, as follows:

- (1) An engraved portrait, most extraordinary so far as costume is concerned, of the first King James, when king of Scotland only.
- (2) A contemporary portrait of the Earl of Strafford.
- (3) Portraits of Prince Rupert and Lord Falkland.
- (4) A celebrated engraving (by Faithorn) of a portrait of King Charles (by Vandyke).
- (5) A portrait of Prince Henry, painted in oil upon tortoise-shell, but of no great artistic value: the brass frame must have been carved by a first-rate worker in that metal.
- (6) A copy of the allegorical frontispiece by W. Marshall, from the first edition of *Eikon Basiliké*.

- (7) A portrait of King Charles, carved in tortoise-shell.
- (8) A silver-gilt medal of King Charles.
- (9) An enamelled portrait of the unfortunate Anne of Denmark.
- (10) A silver medal of Oliver Cromwell, and two bronze medals, of Mary II, rev. EX NOCTE DIEM, and Anne, rev. COMPOSITIS VENERANTVR ARMIS. MDCCXIII.

BOOKS.

A. From various donors:

From Daniel G. Brinton, Esq., M.D.:

The books of Chilan Balam, the prophetic and historic records of the Mayas of Yucatan. By the Donor.

From Lucien Carr, Esq., Assistant Curator of the Peabody Museum:

Extract (on Archaeology) from Vol. VIII, Part 1 of Lieut. Wheeler's Report on United States Geographical Surveys west of the 100th meridian.

Observations on the Crania from the Santa Barbara islands, California. 4to.

On the Palaeolithic implements of the valley of the Delaware.

From Miss Dunkin, Dartford:

Notes on the Antient and Modern History of Springhead. Gravesend, 1851.

From T. Hughes, Esq., Chester:

Journal of the Architectural, Archaeological and Historic Society for the County and City of Chester. Parts x. and xi. 1876.

The Cheshire Sheaf. Parts 1—13, 1878—81. 4to.

From T. Kerslake, Esq., 14 West Park, Bristol:

Caer Pensauelcoit, a long lost un-romanized British Metropolis.

From H. Phillips, Esq., Ph.D., of Philadelphia, honorary member of the Society:

A Glimpse into the Past. By the Donor.

Nine American Ballads (each on a loose sheet).

Anales del Museo Nacional de Mexico, tomo 11, entrega 2^a.

Old-time Superstitions. By the Donor.

Remarks upon a coin of Sicyon.

B. From Societies, etc., in union for the exchange of publications :

1. The Society of Antiquaries of London (C. K. WATSON, Esq., M.A., *Secretary*, Burlington House, London, W.):
List of the Society, June 2, 1881. 8vo.
2. The Royal Archaeological Institute of Great Britain and Ireland (A. HARTSHORNE, Esq., *Secretary*, 16 New Burlington Street, London, W.):
The Archaeological Journal (Vol. xxxviii.), Nos. 148 A, 151, 152, 153. 8vo.
3. The St Paul's Ecclesiological Society (*Hon. Secretaries*, A. PAXON, Esq., 4 North Road, Surbiton, and E. J. WELLS, Esq., Sandown House, Mallinson Road, Wandsworth Common, S.W.):
Nothing received this year.
4. The Oxford Architectural and Historical Society (F. S. PULLING, Esq., M.A., *Hon. Secretary*, 69 Walton Street, Oxford):
Nothing received this year.
5. The Norfolk and Norwich Archaeological Society (R. FITCH, Esq., *Hon. Secretary*, Norwich):
Original Papers, Vol. ix, part ii, with Visitation of Norfolk, Vol. ii, 4th portion, and conclusion of Pedes Finium. 8vo.
6. The Suffolk Institute of Archaeology (S. J. HARRISON, Esq., *Hon. Secretary*, Bury St Edmunds):
Nothing received this year.
7. The Essex Archaeological Society (H. W. KING, Esq., *Hon. Secretary*, Leigh Hill, Leigh, Essex):
Nothing received this year.
8. The Kent Archaeological Society (Rev. Canon W. A. SCOTT ROBERTSON, M.A., *Hon. Secretary*, Whitehall, Sittingbourne):
Nothing received this year.
9. The Sussex Archaeological Society (R. CROSSKEY, Esq., *Hon. Librarian*, Lewes):
Nothing received this year.
10. The Exeter Diocesan Architectural Society (P. B. HAYWARD, Esq., *Curator*, Cathedral Yard, Exeter):
Nothing received this year.
11. The Leicestershire Architectural and Archaeological Society (W. F. FREER, Esq., *Hon. Secretary*, Stonygate, Leicester):
Nothing received this year.

12. The Associated Architectural Societies of Lincoln, York, Bedford, Leicester, etc. (Rev. Canon G. T. HARVEY, *General Secretary*, Vicar's Court, Lincoln):
Reports and papers during the year 1880. Lincoln, 1881. 8vo.
13. The Historic Society of Lancashire and Cheshire (C. T. GATTY, Esq., *Hon. Secretary*, 18 Pelham Grove, Sefton Park, Liverpool):
Nothing received this year.
14. The Liverpool Numismatic Society :
Nothing received this year.
15. The Society of Antiquaries of Newcastle-upon-Tyne (THE SECRETARIES, the Old Castle, Newcastle-upon-Tyne):
Archaeologia Aeliana, part 25, vol. ix (new series), 1882. 8vo.
16. The Cambrian Archaeological Association (Rev. E. L. BARNWELL, *Treasurer*, Melksham, Wilts):
Archaeologia Cambrensis, nos. 46, 47, 48, 49. London, 1881-82. 8vo.
17. The Powys-Land Club (M. C. JONES, Esq., F.S.A., *Hon. Secretary*, Gungrog, Welshpool):
Montgomeryshire Collections, Vol. xiv, parts ii, iii, and Vol. xv, part i. (No. 30). London, 1881-82. 8vo.
General Index to the first fourteen volumes of Montgomeryshire Collections. 8vo.
18. The Derbyshire Archaeological and Natural History Association (ARTHUR COX, Esq., *Hon. Secretary*, Mill Hill, Derby):
Journal of the Society, Vol. iv. London, 1882. 8vo.
19. The Royal Historical and Archaeological Association of Ireland (Rev. F. GRAVES, A.B., *Hon. Secretary*, Inisnag, Stonyford, co. Kilkenny):
Journal. Vol. v (fourth series), Nos. 45, 46, 47, 48 (1879-82). Dublin, 1882. 8vo.
20. La Société Nationale des Antiquaires de France (M. E. NICARD, *Archiviste*, Musée de Louvre, Paris):
Nothing received this year.
21. The Norwegian Archaeological Society (Antiqvar N. NICOLAYSEN, Sekretær, Kristiania):
Nothing received this year.
22. The Royal University of Christiania (Mr C. HOLST, *Director of the Foreign Literary Exchange of Norway*):
Nothing received this year.

23. La Commission Impériale Archéologique of Russia (M. le Comte Serge STROGANOFF, *President*, St Petersburg):
Rapport sur l'activité de la commission impériale archéologique pour les années 1878 et 1879. 4to.
24. Ἡ ἐν Ἀθήναις Ἀρχαιολογικὴ Ἑταιρία (Mr ET. A. COUMANOUDIS, γραμματεὺς, Athens):
Πρακτικά, 1880 and 1881. 8vo.
25. The Peabody Museum, Cambridge, Massachusetts, U.S.A. (F. W. PUTNAM, Esq., *Curator*):
Fourteenth annual Report of the Trustees. 8vo.
26. The Smithsonian Institution, Washington, U.S.A. (Spencer F. BAIRD, Esq., *Secretary*):
Annual Report of the Board of Regents for 1879. 8vo.
27. The Numismatic and Antiquarian Society of Philadelphia (H. PHILLIPS, Jun., Esq., Ph.D., *Corresponding Secretary and Treasurer*, 304 South Eleventh Street, Philadelphia, Pa., U.S.A.):
Report of the proceedings of the Society for 1881. 8vo.

V. LAWS.

(*Revised Feb. 28, 1881.*)

I. THIS Society shall be called THE CAMBRIDGE ANTIQUARIAN SOCIETY.

II. The object of the Society shall be to encourage the study of History, Architecture and Antiquities, to meet for the discussion of these subjects, and to collect and print information relative thereto.

III. The subscription of each member of the Society shall be *One Guinea* annually, such subscription to be due on the first day of January in each year; on the payment of which sum he shall become entitled to all the publications of the Society during the current year.

IV. A member shall be allowed to compound for his future annual subscriptions by one payment of *Ten Guineas*; or, after the payment of fifteen annual subscriptions, by the payment of five guineas.

V. If the annual subscription of any member be twelve months in arrear, the Treasurer shall make application for it, and if it be not paid within one month, a second application shall be made for it, and if that is not attended to within one month, a notice of the same shall be suspended in the Society's usual place of meeting, and the Secretary shall inform the member thereof: if the said subscription be still unpaid at the expiration of two years from the time when it became due, the name of such person shall be announced at the next Annual General Meeting as having been struck off the list of the Society.

VI. No Member whose subscription is in arrear, and has been applied for (according to Law V), shall be entitled to vote at any meeting of the Society.

VII. Any person who is desirous of becoming a member of the Society shall be proposed by two members at any of the ordinary meetings of the Society, and balloted for at the next meeting: but all Noblemen, Bishops, Heads of Colleges, and Professors of this University shall be balloted for at the meeting at which they are proposed.

VIII. Honorary Members may be proposed with the sanction of the Council by at least two members of the Society at any of the usual meetings of the Society, and balloted for at the next meeting. No person shall be so proposed who is either resident within the county of Cambridge or a member of the University. Honorary Members shall receive all the current publications of the Society.

IX. In the voting by ballot for the election of members and honorary members one black ball in four shall exclude.

X. The management of the affairs of the Society shall be vested in a Council, consisting of a President (who shall not be eligible for that office for more than two successive years), three Vice-Presidents (of whom the senior shall retire at each Annual Meeting and be ineligible for re-election during the next two years), a Treasurer, a Secretary, and not more than twelve nor less than seven other Members, to be elected from amongst the Members of the Society who are graduates of the University. Each member of the Council shall have due notice of the meetings of that body, at which not less than five shall constitute a quorum.

XI. The President, one Vice-President, the Treasurer, and the Secretary, and at least three ordinary members of the Council, shall be elected annually by ballot, at a General Meeting to be held in the month of May; the three senior ordinary members of the Council to retire annually.

XII. At the Meetings of the Society or of the Council the Chair shall be taken by the President, or, in his absence, by the senior Vice-President, the Treasurer, or senior ordinary member of the Council then present. The Chairman shall have a casting vote in case of an equality of numbers, retaining also his own right to vote upon all questions submitted to the meeting.

XIII. The accounts of the receipts and expenditure of the Society shall be audited annually by two Auditors, to be elected at the Annual General Meeting; an abstract of such accounts shall be printed for the use of the members.

XIV. The Meetings of the Society shall take place once at least during each term: the place of meeting and all other arrangements, not specified in the Laws, shall be left to the discretion of the Council.

XV. No alteration shall be made in these Laws, except at the Annual General Meeting or at a special General Meeting called for that purpose, of which at least one week's notice shall be sent to all the members at their last known place of abode: and one month's notice of any proposed alteration shall be communicated, in writing, to the Secretary, in order that he may make the same known to all the members of the Society.

It is requested that all Communications intended for the Society, and the names of Candidates for admission, be forwarded to the Secretary, or to the Treasurer, 1 Silver Street, Cambridge.

Subscriptions received by the Treasurer, or by his Bankers, Messrs Mortlock and Co., Cambridge; or at the Bank of Messrs Smith, Payne, and Smith, London, "To the Cambridge Antiquarian Society's account with Messrs Mortlock and Co., Cambridge."

VI. LIST OF COMMUNICATIONS (No. XXIV)
ISSUED WITH THE PRESENT REPORT,
BEING PART II OF THE FIFTH VOLUME.

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PLATE I

1.

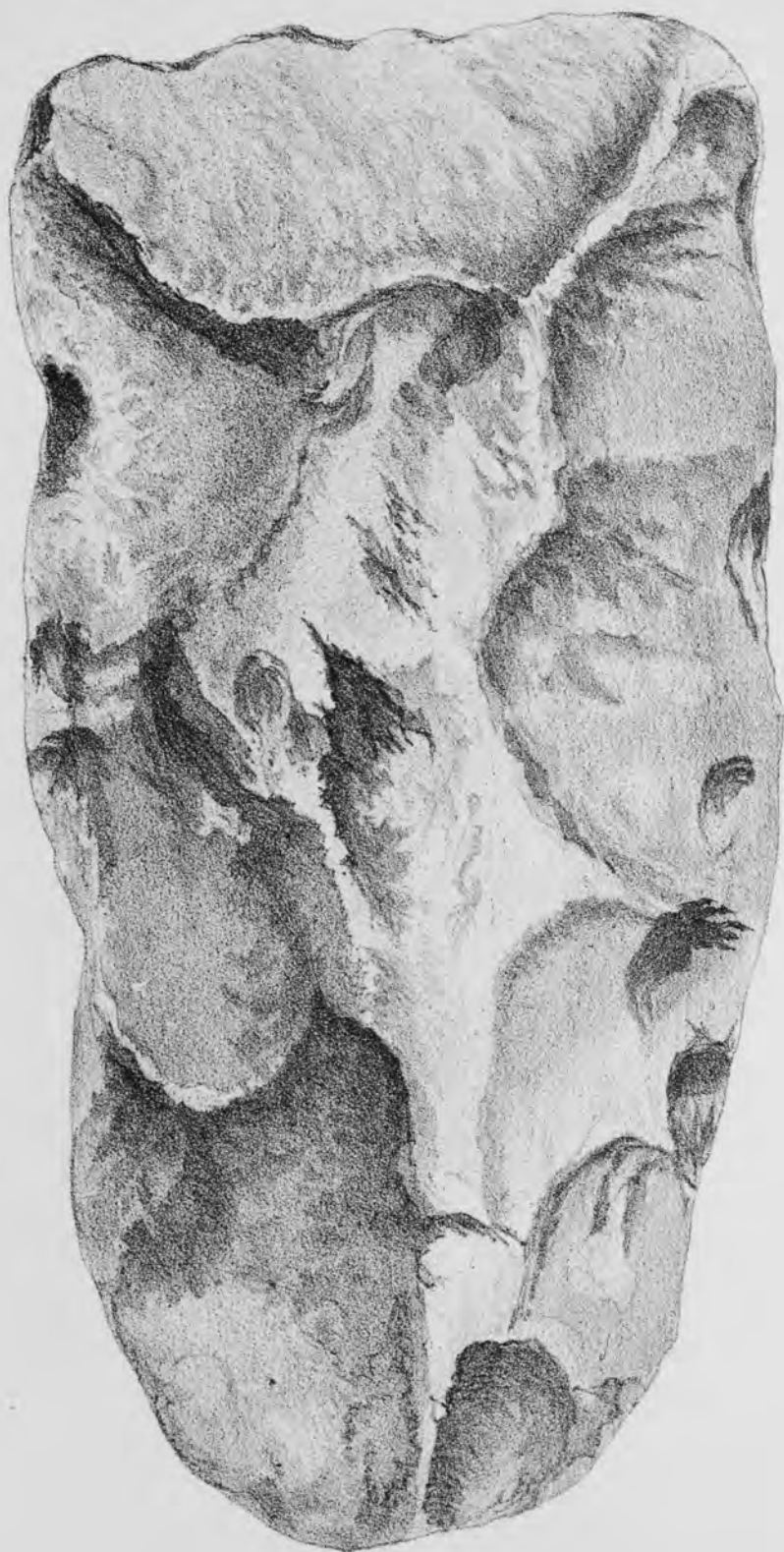


Reduced half the natural size.

2.



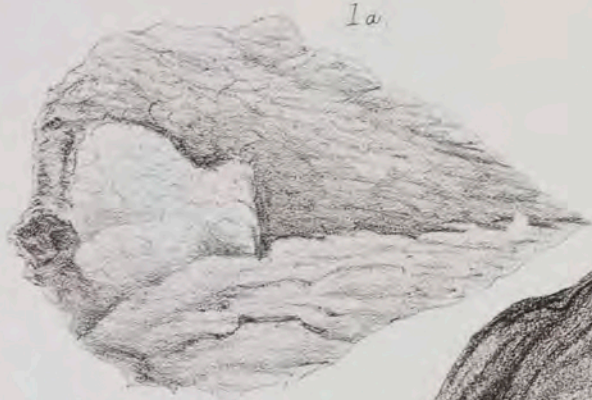
Natural Size.



Natural Size

PLATE III.

1a.



Natural Size.

2.



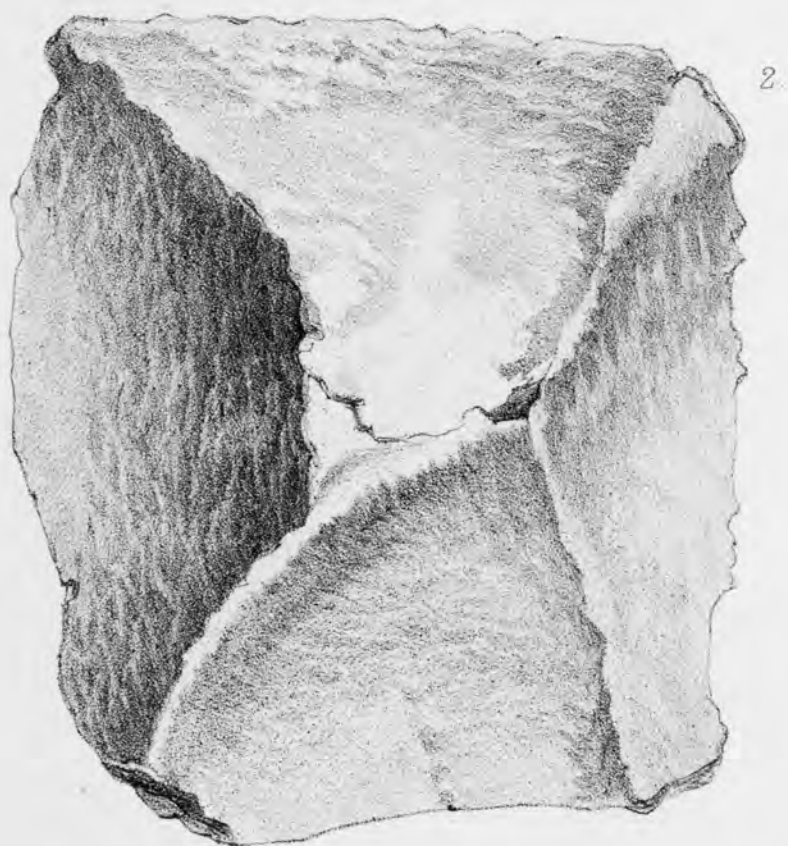
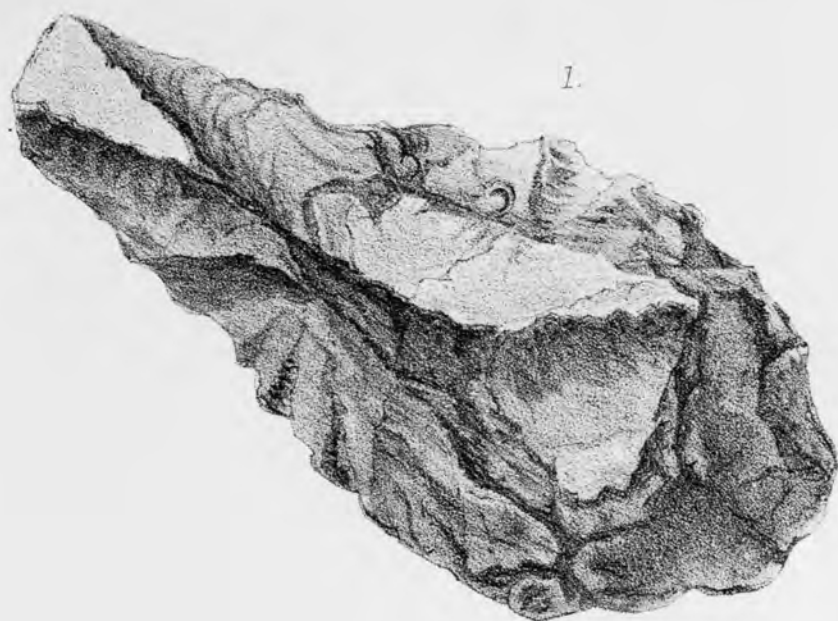
Natural Size.

1b.



*Natural Size. — Same as above,
showing iron pyrites at the back.*

PLATE IV.







VI. NOTES ON FOUR SERIES OF PALAEOLITHIC IMPLEMENTS FROM SOUTH AFRICA. By Mr JOHN C. RICKARD, Cambridge. Communicated, with remarks, by A. F. GRIFFITH, Esq., B.A., Christ's College.

[November 29, 1880.]

THE four series of Palaeolithic Implements which I have the honour to bring before your notice this evening, have a peculiar interest, not only as coming from a district from which very few have hitherto reached England, but more especially from the careful way¹ in which their finder, Mr J. C. Rickard of this town, has recorded the circumstances of their discovery. During a residence of some years in the colony, and a journey to and from the Diamond fields, he has collected a large series of both Palaeolithic and Neolithic types. The specimens before you are a selection from the former, which he has very kindly lent for exhibition. In general form they at once strike one as being very similar to those discovered in England and France, the differences being in most cases due rather to the different character of the rocks employed in their manufacture than to any radical divergence in type. In fact the few similar specimens from the same part of the world which had formerly

¹ Others who have collected these implements have not succeeded in giving a very clear history of their origin. Mr Sanderson (*Journ. Anthropol. Inst.* 1878, p. 15) quotes Mr Gooch as dividing the implements of Natal into two groups, one comprising those occurring at a depth of from 1 to 4 feet in deposits of laterite, nodular limestone and marl throughout the colony, belonging to Palaeolithic types, and distributed very evenly throughout those deposits, the other including those found in the drift sand on the surface, these being of more local distribution and of Neolithic age. The President in his Annual Address, January 28, 1879, desired "further information before adopting any definite views upon this subject."

found their way to England have simply from this external resemblance to our European Palaeolithic implements been assumed to be of the same age with them. The account which Mr Rickard has drawn up, giving the particulars of their mode of occurrence, will I think conclusively prove on surer geological grounds the truth of this assumption. I cannot do better than read *in extenso* the notes he has kindly placed at my disposal.

MR RICKARD'S NOTES.

"The Stone implements of South Africa, like those of Europe, belong to two distinct periods, the Palaeolithic and the Neolithic.

"Those of the Palaeolithic age may again be subdivided into two groups, which I may provisionally name from the localities in which they are respectively the predominant forms, calling the first the Port Elizabeth, and the second, which may possibly represent the earlier part of the Cave-period of Europe, the East London group. I prefer for the present to use these names, since the term 'Cave-period', applied to South African implements, would be so suggestive of 'Bushman caves' that confusion would probably arise from its use; there is also the objection that implements of Palaeolithic age have not yet been discovered in South Africa in caves.

"In point of fact, the implements from this district may be classified generally as follows:—

PALAEOLITHIC.

I. *Port Elizabeth group*:

- (a) Port Elizabeth gravels capping hill (B); fauna unknown.
- (b) River-bed at the Junction (A); fauna unknown.

II. *East London group*:

- (a) Port Elizabeth rocky *débris* on slope of hill (C); fauna unknown.
- (b) East London lateritic (?) deposits (D); fauna unknown.

NEOLITHIC.

I. *Prehistoric*:

- (a) Early Kitchen Middens; Eland, Koodoe (?) seal, birds, tortoise, fish, and abundance of shells; pottery absent or very scarce.
- (b) The Cape Flats deposits (implements of vastly superior workmanship to any of the others); pottery and fauna unknown (to me).

II. *Historic* (or overlapped by the Historic period):

- (a) Bushman caves and rock shelters (many of the surface implements belong to this period, but it is very difficult to distinguish them from others); pottery present.
- (b) Late Kitchen Middens (scarcely to be called a "stone" period, *no* cutting implements of stone; but rubbers, hammers, grindstones, &c. plentiful); a few bone pins; beads; pottery ornamented. The bones are principally of fish and small rodents; plenty of shells.

"The four series of implements at present under discussion belong to the Palaeolithic age, series *A* and *B* representing the Port Elizabeth, and *C* and *D* the East London group; those in series *A* are from the junction of the Riet and Modder rivers, tributaries of the Vaal, *B* and *C* from Port Elizabeth, Algoa Bay, and those in *D* from East London, at the mouth of the Buffalo river. These localities are widely separated, the coast stations being about 150 miles apart, the 'Junction' about 350 miles north of Port Elizabeth, and about 320 miles from East London.

"The implements from the 'Junction'¹ were found in the bed of the river immediately below the point where the rivers become confluent, lying either on the bare rock, or in small hollows containing a little coarse gravel; I collected upwards of eighty specimens in a few hours, but had to abandon the majority of them on account of the difficulty and cost of transport.

"Those from Port Elizabeth marked *B*² are from two de-

¹ See Plates I. and II.

² See Plate III. and Plate IV. fig. 1.

pressions on the hill above the business part of the town; these hollows have lately been deepened some two or three feet, connected by an open trench, and utilized as water reservoirs; the material excavated was used for embanking the lower parts of the margin; it consists of water-worn gravel sometimes cemented together into 'ironstone,' and yellowish sandy clay; the implements were collected from the embankments and from the newly exposed bottoms of the reservoirs.

"I have formed an opinion of the great age of these specimens independently of their singular resemblance to European implements. The hill referred to is in fact the projecting extremity of a plateau, which rises about 200 or 250 feet above the sea; this projecting area is of hard quartzite of supposed Devonian age, and is four or five miles long and a mile or mile and a half wide; it is bounded on three sides, either by deep ravines, low-lying land, or the sea; on the remaining side, kloofs have so cut their way down as to shut off all drainage from the interior; we thus have what is practically an isolated table-land, of an area far too limited to have important streams or rivers; consequently the implement-bearing gravels must have been deposited before the area in question was cut off from the inland districts; it is also remarkable that I have not found a single implement referable to the Port Elizabeth group on the lower levels, although those belonging to later periods are not uncommon.

"The third series¹ is also from Port Elizabeth and may perhaps be equivalent to the one from East London. Most of them were found amongst the naturally formed *débris* on the slope of the hill, some 60 or 70 feet above the sea, a few in the main street of Port Elizabeth, and one under hard limestone, covering what is probably an old sea-beach.

"The fourth series², that from East London, comes from a spot close to the town which was up to quite recent years

¹ See Plate IV. fig. 2.

² Plate V.

covered with drift-sand to a depth of six or eight feet; this has now been removed, so that at present the surface consists of a blackish sandy clay; towards the lower part of this layer, which is from one to three feet thick, the implements are found; lower still it becomes lighter in colour and seems to blend with the decomposing surface of the bed rock; on the opposite side of the river, at about 150 or 200 feet higher elevation than the East London side, the same layer occurs, containing similar implements; here deep kloofs have cut their way back, apparently at a date subsequent to the formation of the black stratum. The wagon traffic has in places cut up this black surface layer to such an extent as to displace the implements, which are therefore to be found in some numbers also on the surface, together with a few Neolithic forms.

"The great majority of this series are simple modifications of ridged and flat flakes¹, and show well-developed bulbs of percussion; a few are similar to those of the Port Elizabeth group; there are also cores, and one or two hammer-stones, a great number of very small flakes and chips of chert, and a series of irregular flakes from quartzite pebbles.

"No organic remains have been found with these implements, and although the remains of animals belonging to the higher orders are absent, yet in a locality so close to the sea one might naturally expect to find a few shells, and their absence almost seems to imply that the black stratum was deposited at a time when the area in question was more remote from the sea-shore than it is at the present day; otherwise the ancient races would have probably left the shells, the tenants of which they had eaten, in almost as great abundance as did the Neolithic men in their kitchen-middens on the same spot.

"In his work on 'Early Man in Britain' Prof. Boyd Dawkins makes some remarks on the distribution of the River-drift and Cave men; on page 232 he states of the river-drift

¹ Plate V.

men, that 'traces of their presence have been found over the whole of Europe south of Norfolk, through Asia Minor and the whole of India'; and of the cave-man he writes 'he is restricted to the area extending from the Alps and Pyrenees as far north as Derbyshire and Belgium, and has not been as yet found farther east than Poland and Styria.' I think these four series of implements prove that the range of one or both of these ancient races must be extended so as to include the southern parts of Africa."

As Mr Rickard in the foregoing Notes has discussed the distribution of these implements, we may now turn to a comparison of their forms with those of corresponding periods elsewhere.

The general resemblance of the specimens found in Africa to those found in Europe is so striking that it has been possible to refer many of the more noticeable to figures of similar English examples published in Mr Evans's great work on British stone implements, as giving a very accurate idea of their shape¹.

Of the 16 implements exhibited from the Junction, the two long and narrow specimens² are longer in proportion than almost any European specimens I know of; the type however is not otherwise dissimilar. There are also four subtriangular and two oval of the ordinary types, but in addition to these there are two somewhat similar in general appearance to ordinary pointed implements, but they have the point replaced by square chisel-ends³. A similar implement⁴ comes from Port Elizabeth, while from East London we find several flakes similarly brought to a square chisel-end⁵. These, so far as I know, belong to a type of Palaeolithic implements not represented in Great Britain, though quartzite specimens very similar to the rudest of these are found in Madras and Spain, and some almost as rude near Toulouse and elsewhere in the South of France. No

¹ For list, with measurements, see Appendix.

² Plate I.

³ Plate I. fig. 1, and Plate II.

⁴ Plate IV. fig. 1.

⁵ Plate V.

flake forms were found in this locality, nor is this strange, the current of the river in the bed of which they were found being so rapid that any flakes washed out of their original bed by it would infallibly be broken up or washed away. A single sub-triangular specimen was found on the Modder river about 20 miles above the Junction.

Of the two localities at Port Elizabeth, one has produced a large number of ordinary types, but amongst them is a single chisel-ended specimen, differing however from those from the Junction in having a less distinctly marked chisel-end, only $\frac{3}{4}$ inch wide¹. There are also several abnormally-shaped specimens, mostly more or less wedge-shaped, one of which appears to have been bruised at the butt by hammering. Two hammer-stones from this locality are also exhibited, one of which is bruised at one end only, the other at both. Flakes are fairly numerous.

From the second locality at Port Elizabeth comes the smaller series marked C in Mr Rickard's classification. This is chiefly composed of flake forms, there being but a very small number of thick pointed implements, while the flakes are more numerous and vary in length from $3\frac{1}{2}$ to $4\frac{1}{2}$ inches; one is remarkable, being almost square and having a square chisel-end $3\frac{1}{2}$ inches wide².

All the specimens from Port Elizabeth are of quartzite, with the exception of two short broad flakes of vein quartz in series B. Most of them are much rolled, but a few from each locality are unworn.

The series collected at East London presents an entirely different *facies* from the first three, as there are very few pointed implements (six or eight in all), and these with one exception are very rough; this exception however is a fine implement, differing from the rest both in form and material, being of a flat oval form and made from quartzite. Cores from which flakes have been struck are fairly numerous, but the most striking feature in the series is undoubtedly, as Mr Rickard has pointed out, the abundance of flake-forms made,

¹ Plate IV. fig. 1.

² Plate IV. fig. 2.

like the majority of the pointed implements from this locality, of a hard, close-grained sedimentary rock and sometimes ridged (*i.e.* with three faces), sometimes flat (with four faces, two being approximately parallel). This difference has often been noticed in flakes from all parts, but I do not think much stress ought to be laid on it. Although most are pointed, there are a few exceptions presenting the very unusual form of a chisel¹; in these it will be seen that the cutting edge must have been produced by a blow given perpendicularly to the length of the flake, and before the flake was knocked off its parent core. At this locality, as stated by Mr Rickard, the Neolithic and Palaeolithic implements are sometimes found mixed up on the surface, but the difference in weathering between flakes of the two ages formed from this rock is so marked, that I think no doubt can be felt to which class these ought to be referred. They are formed indifferently from flat and ridged flakes, the longest being $6\frac{1}{2}$ inches long with a cutting edge $1\frac{1}{2}$ inches across; they all have a square end bevelled off to a sharp cutting edge.

There are also a large number of small chert flakes from this locality, from 1 inch to $1\frac{1}{2}$ inches long, which may very probably be of the same age.

The relative abundance of flake forms found at East London as compared with Port Elizabeth, which Mr Rickard suggests may be due to difference in the age of the two series, one representing the River-drift, the other the Cave-Period of Europe, may possibly be equally well accounted for by the fact that at Port Elizabeth the implements were found in a gravel, in the deposition of which the thicker and stronger implements would alone escape destruction. At East London, on the other hand, the earthy bed in which they occur would preserve both indifferently; and wherever both forms occur, the flakes naturally outnumber the implements by an immense majority. At the same time the other explanation is by no means impossible.

A number of pointed implements were also collected in

¹ Plate V.

various localities in the Diamond fields and between them and the coast¹. Among them is a beautiful specimen of the somewhat rare thin oval form, with an edge worked on it all round, formed from a black basaltic rock². The rest are of ordinary types.

The success which has followed Mr Rickard, wherever he made a stay sufficiently long to allow him to search for implements, over so wide an extent of country, not very far short of the size of England, comprising an area of about 11,000 square miles, indicates that their distribution is far more general in this region than in Europe. From this fact we may fairly infer that the country must have been either much more thickly populated, or as is more probable, inhabited for a longer time by the races using these tools.

I cannot conclude without thanking Mr Rickard warmly for the readiness with which he put his whole collection at my disposal for exhibition this evening. My best thanks are also due to Mr E. B. Tawney for his kindness in determining the rocks from which the several implements are formed.

¹ Plate VI.

² Ibid. fig. 1.

DESCRIPTION OF THE PLATES.

Plates I. and II. From 'The Junction'; see pp. 59, 62.

Plate III. and Plate IV. fig. 1. From Port Elizabeth (series B); see pp. 59, 62, 63.

Plate IV. fig. 2. From Port Elizabeth (series C); see pp. 60, 63.

Plate V. From East London; see pp. 60, 61, 62, 64.

Plate VI., fig. 1. From near Bullfontein, Diamond fields; see p. 65.

fig. 2. From Pandam Fontein, a few miles south of Du Toit's pan, Diamond fields; made of indurated fine ash; see p. 65.

The specimens figured in Plates I. III. IV. V. and VI. (fig. 2), have been presented by Mr Rickard to the Woodwardian Museum.

Plate II. represents a specimen which he has been kind enough to add to my collection.

APPENDIX.

The measurements of some of the better implements are here given, with references to figures of similar specimens in Evans's *British Stone Implements*.

N.B. The figures referred to represent with truth only the outline, the difference in fracture making the other details less similar.

	Length.	Breadth.	Thick.	Material.	Reference to Evans.	Remarks.
	(in inches)					
A. From the Junction.						
1	5	$3\frac{3}{8}$	$1\frac{1}{2}$	sandstone	Pl. II, fig. 18	
2	$5\frac{3}{8}$	$3\frac{3}{8}$	$1\frac{3}{8}$	quartz-felsite	„	
B. From Port Elizabeth.						
1	$5\frac{1}{4}$	$2\frac{3}{4}$	$1\frac{7}{8}$	quartzite	Pl. I, fig. 8	point broken
2	$3\frac{7}{8}$	$2\frac{1}{2}$	$1\frac{3}{8}$	„	p. 537, fig. 459	but smaller; unworn
3	$5\frac{1}{2}$	$3\frac{3}{8}$	$1\frac{5}{8}$	„	p. 489, fig. 420	point broken; small portion of natural surface at butt
4	$4\frac{1}{8}$	3	$1\frac{5}{8}$	„	p. 550, fig. 469	thicker in middle than figure; unworn; edge worked all round
5	$3\frac{1}{4}$	3	$1\frac{5}{8}$	„	p. 505, fig. 437	
6	$4\frac{1}{8}$	$3\frac{1}{4}$	$1\frac{1}{2}$	„	p. 550, fig. 469	resembles (4) but very rough, with a large mass of ironstone gravel cemented on to one side of it
D. From East London.						
1	5	$3\frac{3}{8}$	$1\frac{1}{2}$	hard and fine-grained sedimentary rock.	Pl. II. fig. 18	but rougher
E. From various localities between Diamond Fields and East London.						
1	$2\frac{3}{4}$	2	$\frac{7}{8}$	basalt	p. 550, fig. 469	

VII. NOTES ON SOME NEOLITHIC IMPLEMENTS FROM
SOUTH AFRICA, by Mr J. C. RICKARD, Cambridge.
Communicated by A. F. GRIFFITH, Esq., B.A.,
Christ's College.

[March 14, 1881.]

[The following notes on some Neolithic implements collected in South Africa by Mr Rickard form a natural sequel to his notes on the Palaeolithic implements from the same district, which I had the pleasure of communicating to the Society in November last. Mr Rickard's classification of this whole series of remains will be found at the commencement of his notes in the preceding paper. A. F. G.]

IN many localities of South Africa, in fact, almost everywhere, implements of stone of various forms are to be met with lying exposed on the surface of the soil; it is difficult in many cases even to determine whether they belong to the Palaeolithic or to the Neolithic age; this difficulty is much increased when we attempt to assign any of those which are undoubtedly Neolithic to their particular subdivision of the period. For instance, one cannot with any certainty decide whether a given specimen is the work of the present race of Bushmen, made possibly within the last fifty years, or whether it belongs to any older period included in the vague term prehistoric. Under these circumstances it is better merely to

arrange such specimens according to the forms which they present, rather than by a process of mere guesswork to attempt any chronological distinctions.

There are, however, good reasons for separating those implements which are found under more definite circumstances, such as those occurring in kitchen-middens, or in caves, or which exhibit a peculiar style of workmanship, and for applying to them distinctive names.

Surface finds. First, as to Neolithic implements found on the surface; these may be divided into knife-like or spear-shaped flakes, scrapers, rubbers, mullers, grindstones or hones, perforated balls, &c. The examples of knife-like and spear-like flakes exhibited, are from East London, Kei river, Queenstown, Stormberg, Burghersdorp, Orange river, Fauresmith, the junction of the Riet and Modder rivers, the Diamond Fields, Boshoff, Richmond, and various localities of the Uitenhage district. One rude implement from Burghersdorp, probably a spear-head, is entirely different from any of the others, and is the only one of that type I have seen.

The scrapers with one end chipped to a semicircular form are from the same localities as the flakes; another kind of scraper formed from a circular disc, brought to a sharp edge all round by secondary chipping, which is all done on one side of the instrument, seems to graduate into a thicker and more core-like form, in which also the base is flat, and the chipping confined to one side. I exhibit English specimens of these three types to shew the great resemblance they bear to the African; this is the more remarkable, as scrapers with their secondary chipping may be considered to be more highly specialized forms than mere flakes.

A triangular scraper from the Orange river—the only South African example I have seen—is of an uncommon type. A small scraper from East London, with a broadly curved

working edge, is also a scarce form ; Mr Jukes Brown figures similar specimens from Egypt¹.

The rubbers were found at East London, Riet river, Modder river, and Port Elizabeth; the hammerstone is from East London, and the grindstone or hone is from the Diamond Fields.

The perforated balls are from the district of Uitenhage, Bethulie on the Orange river, Riet river, and one from about four miles below the junction of the latter river with the Modder. The specimen from Bethulie is made from a natural concretionary nodule, which contains some kind of fossil, probably a coprolite. Two of the balls from the Uitenhage district have flattened sides, and seem as if intended to be mounted on handles and used as clubs or hammers ; some flatter or thinner specimens, in which, a hole having been commenced on both sides, the perforation has however not been completed, were probably used as knapping-stones and employed in fabricating various stone instruments. It is pretty certain that some of the perforated balls have been employed as make-weights for digging-sticks, but I cannot believe that they were ever specially made for such a purpose.

The earlier kitchen-midden implements. Under this title are included specimens found in middens near Port Elizabeth. One of these is situated about a mile to the north, and a series of similar middens is met with about three miles to the south of the town ; they are on or near the beach, and are about 15 or 20 feet above high-water mark. Shells of *Patella*, *Haliotis*, *Turbo*, *Mytilus*, *Mactra*, *Donax*, &c. form the chief part of the contents ; but the large land-shells (*Bulimus*) occur in considerable numbers ; probably however merely as intruders, as they are sometimes to be found present in a living condition ; as some of the bones have holes eaten in them, it is

¹ *Journ. Anthropol. Inst.* 1877, plate 9, figs. 5 and 12.

possible that the Bulimi get a supply of lime from them to assist in the formation of their shells. The bones are chiefly those of the larger antelopes, but those of seals, birds, and tortoises are also present, as well as considerable quantities of fish-bones, while remains of domestic animals are, I believe, absent.

The implements found in these middens comprise in addition to the usual flake-forms and rubbers, knife-like instruments with a cutting edge and thick back, precisely similar to a modern one from Australia, figured by Mr Evans¹. Another type that I have not seen elsewhere, is a scraper formed of a quarter of a flat water-worn pebble; the straight edge is the one used in working; other implements again are very similar to those found in the Danish middens and figured by Sir John Lubbock². A specimen from the north end midden closely resembles in form a Palaeolithic implement, but, as may be seen from a comparison with several examples from a salt-water creek two or three miles distant, is only a natural pebble which has been utilized as an implement.

From this midden I also procured several fragments of a perforated ball; as these balls are very rarely found associated with other implements, an occurrence of this kind is worth recording, as helping to some extent to fix the age of these curious objects. Portions of two pebbles have well-defined grooves cut in them. There is an entire absence of metal in these middens, and even pottery is very scarce.

The later kitchen-midden implements. Middens of an entirely different character are found near the beach at various parts of the coast. One such at East London did not afford any cutting instruments whatever, the only implements of stone being hammers and rubbers; this midden was also largely

¹ *Stone Implements*, p. 264, fig. 198.

² *Nat. Hist. Rev.* 1861, p. 499, plate 7, figs. 8 and 9.

composed of shells, but there were no remains of the larger mammalia, the bones found being mostly those of rodents and fishes, the latter being the more numerous; the absence of larger bones and cutting instruments probably indicates that the tribe by which the materials of the midden were accumulated were in possession of domestic animals and tools of metal; the pottery is ornamented with indented lines and dots, arranged in several patterns.

At a little distance from the midden just described are the remains of several smaller mounds, probably of about the same age. From one of these I got a neatly-worked scraper $2\frac{5}{8}$ inches long, one edge chipped on both sides, the other left unworked and probably at one time imbedded in a handle which has preserved its original sharpness. I also found another flake, and part of a ball of coarse limestone shewing the commencement of a perforation on both sides; except as regards size and material this ball is of a similar character to the larger examples, and it seems ridiculous to suppose that it could have been intended to have added to the efficiency of a digging-stick. In another of these small mounds I found five rough flakes and a core, associated with fragments of bone of a large animal, probably hippopotamus.

Relics of a similar kind are to be found also at Port Elizabeth, where on the site of what seems to have been an old encampment I found numerous rubbers, a hammer-stone, a mealing-stone, and two rough flakes, associated with ornamented pottery. There is no midden actually on the spot, but within half a mile is a group of eleven small shell-mounds, which may have been formed by the inhabitants of this camp; ten of these mounds are arranged in a semicircle; the eleventh and largest is placed in a position facing its concavity. In addition to shells these mounds only yielded pieces of pottery, a few bones, irregular nodules of white quartz, and a pebble battered at one end; I was not however able to search them thoroughly.

With this series I have placed two fragments of iron ore, one found at Port Elizabeth, the other at East London, both shewing surfaces worn by friction. The rubbers may have been used in grinding this material as well as corn, as it is evident from the bruised appearance of many of them that they were employed on some hard substance; it is possible that one end was used in breaking it into small fragments, which were afterwards ground to powder by the smooth end of the instrument.

Bushman caves and rock-shelters. I have very little material that can confidently be said to be of Bushman origin, and although perhaps it will eventually be necessary to associate Bushman relics with one or more of the other groups, it is best at present to keep them apart. The deposits already alluded to have not yet supplied us with any of those drawings for which bushmen are celebrated, neither have any objects been found in them which could fairly be described as corresponding to the well-formed arrow-heads of Europe; this is also true of surface finds, and I am surprised that though the present bushmen are well acquainted with the use of the bow, neither my collection obtained from 40 or 50 different localities, nor that of Mr G. McKay, of East London, contains a single example of such an arrow-head. Dr Dale¹ has certainly described certain implements from the Cape Flats, East London, and other places, as arrow-heads; but with the exception probably of the Cape Flats specimens, I believe he has made an error in so doing; his East London and Panmure specimens were collected by Mr McKay, and as that gentleman is an intimate friend of mine, I may safely say that he does not believe that arrow-heads have been found in those localities; perhaps their rarity may be accounted for on the supposition that the bow is a comparatively recent acquisition of the bushmen, which may have superseded the

¹ *Journ. Anthropol. Inst.* 1871—2, p. 347.

perforated balls for hunting or warlike purposes, and led to these latter being utilized in connexion with the digging-stick.

Lance-heads of the Cape Flats. Another very distinct kind of implement (unrepresented in my collection) is found on the Cape Flats, and so far as I can learn, in no other part of Africa; these are carefully-worked lance-heads, of the same type as an English specimen from Icklingham, which I shew to illustrate their form; the South African Museum possesses specimens much more regularly worked even than this; Mr E. L. Layard¹ exhibited twenty-one examples to the Ethnological Society; Mr Evans also has several, and I am indebted to him for a reference to two figured by Sir John Lubbock². These lance-heads are found associated, according to Dr Dale³, with arrow-heads, flakes, scrapers, sling-stones, corn-crushers, and pottery. But their chief interest arises from their apparent isolation on a comparatively small tract of country at the southern extremity of Africa: this fact, added to the superior workmanship of the specimens, induces me to keep them apart from the other series which have been already noticed.

I have never met with a true celt in South Africa, but an instrument sent to England by Dr Dale, was described as a polished celt by Mr G. Busk⁴. Mr Winwood Reade discovered small celts near Accra in West Africa, which were described and figured by Sir John Lubbock⁵.

We see then that the various subdivisions of the South African Neolithic period (leaving out of account the surface-finds) may be provisionally arranged as follows:—

Early Kitchen-midden period,
Cape Flats period,

¹ *Jour. Anthropol. Inst.* Vol. I. p. xcvi. (Appendix).

² *Ibid.* Vol. I. plate 1, figs. 1 and 2 (Appendix).

³ *Ibid.* Vol. I. p. 347.

⁴ *Ibid.* Vol. I. p. 346.

⁵ *Ibid.* Vol. I. plate 2, figs. 1—5 (Appendix).

Bushman period,
Late Kitchen-midden period.

But it is probable that the so-called Bushman period will have to be amalgamated with one of the others.

In conclusion I would like to record the existence of considerable accumulations of mussel shells in the neighbourhood of East London, which might be mistaken for old middens, but I have been informed that they owe their existence to the Kaffirs having been compelled to use mussels in large quantities as food during the "starvation time" of 1856-7.

NOTE.

While putting together these notes I happened to see in the volume of the Anthropological Institute's *Journal* to which reference has already been made, figures of the hut-dwellings on Dartmoor. They at once called to mind some remains at Bethulie on the Orange river, which, although I believe they are modern, are nevertheless of some interest. My attention was attracted to them chiefly because the foundations of the huts (which were of small size) were oval in plan, and formed of two concentric rows of stones set on edge, the intervening space and interstices of the stones being filled and plastered up with sandy clay. The walls thus formed were about 18 in. in height, and 12 to 18 in. in thickness; the superstructure of all the huts had entirely disappeared; on one side of the entrance to some of them was a space about 18 in. in diameter paved with small pieces of stone set on edge; while near the huts were several heaps of ashes, in which were agates and other stones which had been used in obtaining fire; strewn about the settlement was a quantity of broken pottery, stones hollowed for corn-mills and some of the mullers used in connexion with them, and several grindstones or hones. Close by and adjoining each other were numerous small enclosures with stone walls about four feet high, in which they had kept their live-stock; they differed from ordinary kraals in being of very small size, as well as in being rectangular in plan.

VIII. ON TWO UNPUBLISHED CHRISTIAN GEM-TYPES.
Communicated by the Rev. C. W. KING, M.A.,
Trinity College.

[November 14, 1881.]

So limited is the variety of gem-types emanating from early Christianity (a circumstance due first to the Judaical prejudices of the primitive converts, and afterwards to the almost total decay of the art coincident with the triumph of our religion) that the discovery of anything novel among such relics will be received with equal pleasure and surprise by the student of Christian antiquities. "Those that cut and carve seals" are reckoned amongst the trades "without which a city cannot be inhabited" (i.e. necessarily to be found in every inhabited town) by the author of *Ecclesiasticus*¹, most probably a resident at Alexandria; and that great emporium continued down to the Arabian conquest the last home of the expiring glyptic art, and the source (as I have noticed on previous occasions²) whence memorials of the kind are still furnished to collectors. From that quarter also were recently (1881) brought the two gems to be described in this communication; which were soon afterwards added by that zealous amateur, the Rev. S. S. Lewis, to his already extensive and curious series of similar memorials of the early Church. Their types, besides their novelty (for

¹ *Ecclus.* xxxviii. 27.

² See No. I. of the present volume of Communications.

nothing resembling them can be found amongst the specimens of the same class hitherto published), have other claims to our attention; the one, in the unusual elegance of the design and in the perfection of its workmanship; the other, in the singularity of its type, that suggests many interesting thoughts connected with its origin and intention, which it is the object of the following remarks to trace out and illustrate.

I.

The first gem (fig. 1), lapis-lazuli of the purest and brightest sort, is oval in form, with surface slightly convex. It is engraved with a woman amply draped on one knee in prayer, and holding up on high with both hands a Latin cross, at which she gazes fervently. Behind her appears a great palm-branch (or perhaps the tree of life) filling up that side of the field, and distinctly setting forth the faith of the SECUNDA, whose



FIG. 1.

name runs partly round in large and rudely-cut lettering. The intaglio itself is carefully finished, the figure is well drawn, the drapery arranged with elegance; much attention has even been bestowed upon the head and features, the part of the composition always the first to fail in the works of the Decline. The whole work is not only an exception to the general mediocrity of its class, but would not disgrace an artist of a much better period than that of the Lower Empire. According to the almost invariable rule in the case of signets, the *inscribed name* can only designate the *owner*: otherwise we

should be tempted to see in the lady some virgin-martyr of the first ages, whose portrait was chosen for her seal-device by some later devotee claiming her for patron-saint. *Secunda* was so common a name in antiquity, by reason of the good omen it contained, that it would be rash to assign it to a daughter of the *Secundus*, brother-in-law of the emperor Anastasius, and Consul A.D. 511; to whose exalted rank the extraordinary beauty and the high value of the *sapphirus* might tempt the enthusiastic collector to assign its first ownership¹.

But the peculiarity of this gem which most demands consideration, is the *cross* so conspicuously elevated in the hands of the kneeling damsel. This can be explained in very different ways. Does she hold it up merely as a badge of her religion; or have we here a very early instance of the "Adoration of the Cross" itself? As a visible proclamation of the faith of the bearer, the 'sign of the Cross' may be traced back to the first days of Roman Christianity; of which fact no more convincing proof can be adduced than the action of Constantine upon the conquest of Rome. In the words of Eusebius², "By a great inscription, and by monuments, he proclaimed unto all men that *this* is the sign of salvation: having in the centre of the imperial city set up *this* as a grand trophy over his enemies; engraving in indelible characters this sign of salvation, a protection for the supremacy of the Romans, and for the whole empire. For he at once commanded them to place a tall spear, in the shape of a *cross* in the hand of his own likeness, erected as a statue in the most public place of Rome; and to engrave beneath it this inscription in the language of the

¹ Epiphanius says of the Sapphirus, there are several kinds, as the "*Royal*," spotted with gold; but that sort is not so much esteemed as the pure blue (*On the Twelve Gems of the Rationale*, chap. v.). The signet of the Emperor Phocas is cut in lapis-lazuli.

² *Vita Constantini*, cap. XL.

Romans: 'Through this saving sign, the true test of Virtue, I have delivered your city, and rescued it from the yoke of tyrants; and moreover I have liberated, and restored the Senate and people of Rome to their pristine dignity and splendour.'” The nature of this representation (perhaps a copy of the actual statue) is preserved upon the *solidus* of Valentinian III. (see fig. 5, p. 82) and upon those of many of his successors, in which the spear in the emperor's hand, transfixing the prostrate enemy, terminates above in a Latin Cross. Could we be certain that the remarkable adjunct lately discovered upon a unique denarius (fig. 2) of Gallienus (emp. 253—268 A.D.) was intended in the same sense, that capricious prince might claim the glory of having anticipated Constantine in such a manifestation.

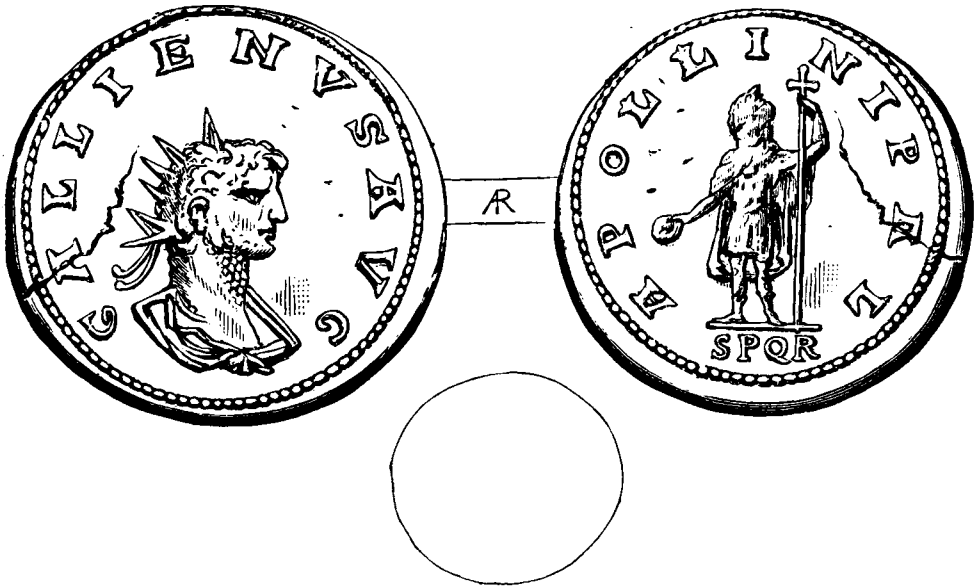


FIG. 2.

The type of this denarius of Gallienus is a standing figure, holding out a *patera* as if pouring a libation, and resting his left hand upon a tall sceptre (or *hasta pura*) which terminates at the top in a well-defined cross. The legend reads APOLLINI PAL(atino); in exergue SPQR. It is evident at first sight that the figure is not an Apollo, but the emperor himself in the character

of that god, and in the action (extending the *patera*) of the far-famed statue in the Daphne at Antioch, known to us by the Monody of Libanius upon its destruction, and pictorially by that pretty little coin of Julian's inscribed APOLLONI ANTIOCHENO. There can be little doubt that the legend upon the coin under discussion, read by the light of the figure which accompanies it (perhaps a copy of an actual statue erected at the time of its mintage), was a piece of flattery to Gallienus. This emperor, in all but cowardice, resembled (or imitated) Nero as much in mind as he did in face: he was in fact a masculine copy of the sixth Cæsar. Like him he professed himself a rival of the God of Day, usurping his figure here, and appearing in public with his hair sprinkled with gold-dust to imitate his luminosity. As Nero raised the Colossus of the Sun-god in his own likeness, so we find his follower endeavouring to eclipse him, by erecting a new Colossus twice as large as that effort of imperial extravagance, previously regarded as beyond all competition. Nero struck coins (yet extant) with his own figure *citharoedico habitu* (as Suetonius has related), and is immortalized on gems with the adjunct of a lyre, as the living incarnation of the god of song. It is only to be expected that Gallienus should have followed him here also; gratifying his vanity upon the point where it was most susceptible, namely, his literary fame. Trebellius records his proficiency in poetry, oratory, and in fact "in all the arts", and quotes three lines of his composition (an impromptu)¹ so fervent, so spirited, as to make us deplore the total loss of the rest, which would, if equal to the sample, have made a splendid addition to the scanty list of the "Works of Royal and Noble Authors." Highly interesting from this point of view as the coin-type before us may be, I fear that what gives it its principal value, the Christian implication of the staff

¹ *Ite, agite, o pueri, pariter sudate medullis
omnibus inter vos; non murmura vestra columbae,
brachia non hederæ, non vincant oscula conchæ.*

held in the left hand of the figure, is not altogether secure from impugnement. There has, but lately, come to my knowledge a Campanian vase-painting of the "Rape of Cassandra", in which the statue of Pallas carries an inverted spear, with its butt-end similarly finishing in a *cross*: and it may be urged that whatever reason existed for its introduction in the hand of the Virgin Goddess, will dispense us here also from the necessity of interpreting it as a symbol of the new religion. On the other hand, those who refuse to see in this cross a mere meaningless appendage to the emperor's staff, may urge his famous edict granting protection to the Christians, and the medal struck in honour of his so greatly beloved empress, Salonina, reading *AVGVSTA IN PACE*; for which every other interpretation is more forced than that which takes it in the Christian sense, as an equivalent for the Pagan *CONSECRATIO*.

Gallienus is recorded to have been fond of practical jokes¹, and seems certainly to have extended this propensity to his mintage, which alone presents us with more insoluble problems than the entire imperial series put together. This, therefore, would (if its reality be conceded) be the very first appearance of a Christian symbol upon a coin: for the monogram composed of *X P* lately found in the *legend* of a Greek² medallion of Trajanus Decius, has no better claim to such an origin than when it occurs on the coins of the Ptolemies, simply indicating the mint-master. Besides, as Lactantius ascribes the *invention* of the *Chrisma* to a special revelation from the Saviour himself to Constantine, it follows that the form, as used in that special sense, was unknown before the Battle of the Milvian Bridge.

¹ "Lavabant simul cum principe, admittebantur saepe etiam mulieres, cum ipso pulchrae puellae, cum illis aniculae deformes, et joculari se dicebat cum orbem terrarum undique perdidisset." (Treb. Pollio, *Gallienus*, cap. 18.)

² Described in Smith and Cheetham's *Dictionary of Christian Antiquities*, p. 1273 b, plate 1, no. 2.

The Cross, treated as the principal object on a coin-reverse, makes its first appearance, and with much elegance, upon a *solidus* (fig. 3) of the pious Galla Placidia (A.D. 421), where it is upheld by an angel (or Victory) standing at the side. Soon afterwards the Cross banishes all other types from the

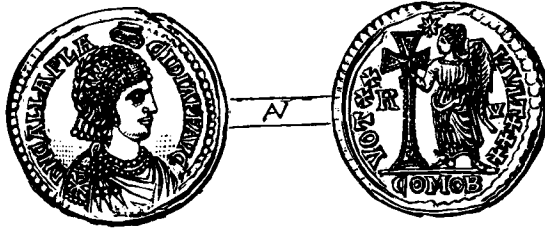


FIG. 3. D(omina) N(ostra) GALLA • PLACIDIA • P(ia) F(elix) AVG(usta).
Rev. VOT(is)¹ XX MVLT(is) XXX R(a)V(ennae).

reverse of the *solidus*, until Justinian II (A.D. 695) replaces it by a well-executed bust of Christ; but it is unnecessary to pursue the history of the symbol so far beyond the limits prescribed to us by the workmanship of our gem.

II.

The other gem (fig. 4, see next page) as far excels this in curiosity and interest of subject, as it falls short of it in beauty of workmanship and in quality of material. It is also considerably larger; of like shape, but an inferior and darker stone. There is some effect in the drawing of the group, but its execution does not rise above the barbarism of even the better sort of gnostic stones belonging to the fourth century; but in novelty of idea, and ingenious adaptation of an ancient type, it far surpasses anything of its species that has hitherto come to light. A young man, in the simple tunic of a shepherd, agreeing with the primitive representation of the "Pastor Bonus," appears bruising with

¹ These vows refer to the reign of Theodosius II.; the coin is figured to the actual size.

his staff, tipped with the sacred monogram instead of iron, the head of the Old Serpent; whose bust indeed is human, but body that of a crocodile, the belly hideously swollen, and the back garnished with a row of spikes, or similar protuberances,

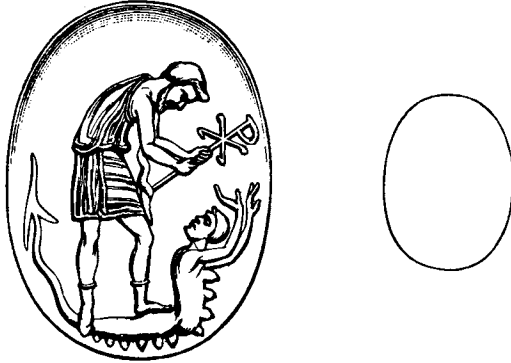


FIG. 4.

to make its aspect yet more terrific, whilst the snaky tail, upon which the victor firmly plants one foot (as does Hercules on the Hydra's in the tetradrachm of Phaistos), goes curling up into the field behind him, and terminates as a barbed arrow-head.

The human-headed Serpent, as typifying the Evil One, first makes his appearance upon the *solidus* (fig. 5) of Valen-

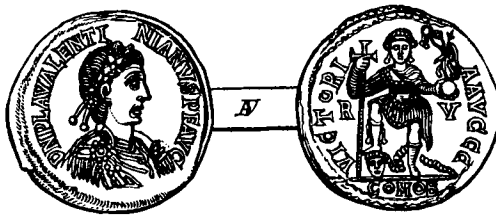


FIG. 5.

tinian III. (A.D. 420—435) where the orthodox Augustus is seen "bruising its head with his heel;" the conception therefore is of early date, so that its introduction does in no way invalidate the antiquity of the gem under consideration. As a coin-type it was, probably, intended by triumphant Christianity for a degradation of the Agathodaemon Serpent, that special

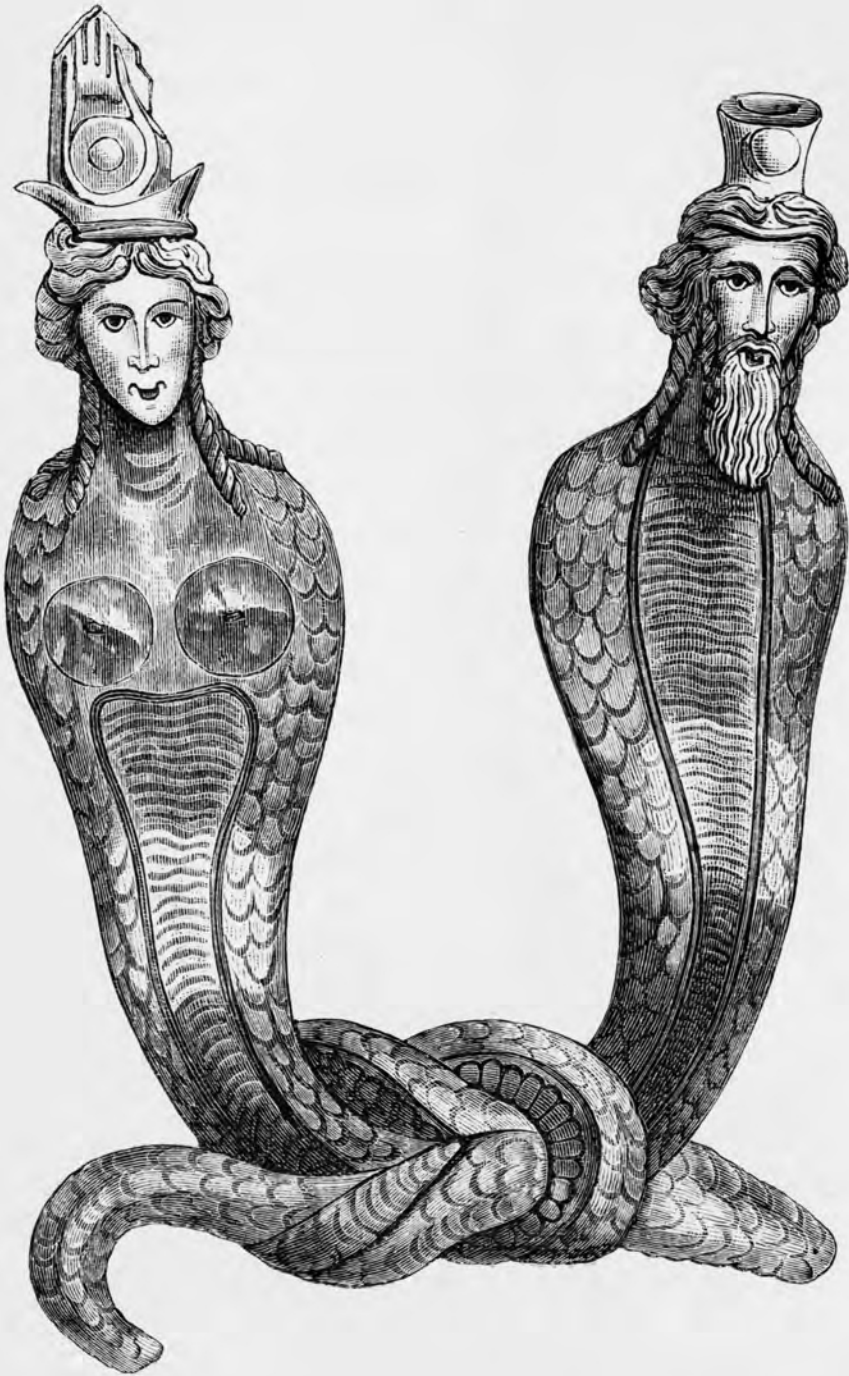


FIG. 6. MARCUS AURELIUS AND FAUSTINA JUNIOR AS AGATHODAEOMONES.
Contemporary Bronze, drawn to the actual size.

favourite in the theology of Roman Egypt, which frequently represents it as furnished with the head of Serapis or, by an ingenious piece of flattery, of the reigning emperor (see fig. 6 on p. 83). But the head given by the artist to the Evil One of our gem is manifestly *youthful*; and proves that he was guided in its drawing by the Rabbinical tradition of the shape assumed by Eve's Tempter:

“a cherub's face, a reptile all the rest.”

The *Dragon*, in the same acceptation, that forms the handle to certain Christian lamps (see fig. 7) more than usually elaborate in design, exhibits similarly to this intaglio a back horrent with spikes, like that of the actual iguana; although, in this case, they are due only to the artist's imagination, as the ancients could hardly be acquainted with anything of the lizard family armed with such formidable appendages. On the other hand, our mediæval and heraldic Dragon was produced simply enough, by equipping the crocodile with wings, in order to add the gift of speed to the native invulnerability of the monster. The transition is clearly exemplified in a bas-relief of the Louvre collection¹, which exhibits Horus (Aroeris) in Roman armour, mounted on a richly-caparisoned war horse (as the Cæsars of the Lower Empire so frequently appear on their coins), and transfixing with his lance the Typhonian crocodile, that most ancient emblem of the Evil Principle. Were it not for the *hawk's head*, that Horus retains in this monument of his fast expiring worship, the group would pass without question for our St George and the Dragon: and it is generally agreed that the patron saint of England was brought back from Alexandria by the returning Crusaders.

The mention of the Arian persecutor recalls to memory that in his well-deserved punishment by popular vengeance

¹ Figured in the *Revue Archéologique* for 1876, p. 197.



FIG. 7. Antique bronze lamp found at Syracuse in 1870: the cruciform sword, surmounted by a Dove, stabs the monster's head, and indicates that the Dragon's death is the Light of the World.

was involved a minor bigot, Dracontius, master of the mint at Alexandria, who had provoked his fate by overthrowing an altar erected there upon the accession of Julian. And again, as the signet device often expressed symbolically the name of its owner (as Symmachus tells us of his own), it is not impossible that our gem may have been engraved for some one of the same name with the unlucky *monetarius*, when his religion was again in the ascendant. And before quitting the subject of *Dragons*, I must add, though apparently straying very far away from my text, that the far-famed Dragon of the Celestial Empire is in its origin, *however* fantastically metamorphosed, a true crocodile; introduced with all the other gems of Chinese art by the Buddhist missionaries from Bactria. No intelligent archaeologist who compares the sculptured, and more especially the glyptic, works so abundant in Northern India with the Chinese treatment of similar objects will fail to detect the source whence their inspiration was drawn.

Amongst the shower of "hard names" which that "whining monk," Gregory Nazianzen, pours upon his old university friend, Julian, in the "invective" preached upon the first intelligence of the emperor's death, figures that of "Dragon." This, however, refers to the Apocalyptic Portent, and forms the climax to a string of comparisons to Sihon, Og, and all the other tyrants who had vexed the chosen people.

The "*draco*" of the Romans was a large crested snake, much resembling the hooded cobra di capello in shape, but not venomous, first introduced from Asia as a sacred animal, but which had, in Pliny's days, multiplied to a prodigious extent at Rome: one of the species had been the congenial pet of the emperor Tiberius, "*erat ei in oblectamentis serpens draco*," as Suetonius¹ puts on record. Soon after this, the *draco* became a military ensign, carried by a '*draconarius*,' and makes its appearance amongst the other standards upon

the triumphal bas-reliefs. This ensign was of a very singular nature, being a hollow tube made of silk, very accurately figuring the sacred serpent, which the wind entering by the gaping mouth distended as it hung from the pole: hence Prudentius¹:

“Proque *ventosis* draconum quos gerebant palliis
Praeferunt insigne lignum quod draconem subdidit.”

The figure was, probably, chosen for a military banner on account of its talismanic power, and as acting as an *Agathodaemon* in the literal sense of the word.

In the same connexion we may consider another talisman of wondrous efficacy, which survived by many centuries the religion that gave it birth. This is the *Chnuphis* (Kneph); the serpent with lion's head, whence spring *seven* rays (often tipped with the *seven* Greek vowels, which shroud the “ineffable name” from profane eyes); the Sigil which King Nechepsos (as Galen² tells us) prescribed to be cut on the *Jaspis* (green or yellow

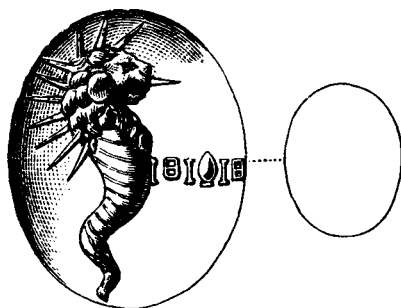


FIG. 8.

calcedony), and to be worn as a preservative of the chest and lungs. The old physician remarks that this was a common practice in his own days; but that *he* had found by experiment that the gem, by its natural virtues, was equally efficacious without the sigil. Prodigious numbers of these Cnuphis-gems are still preserved; their manufacture evidently extending

¹ *Peristephanon*, I. 35.

² *De temperamentis simplicium medicamentorum*, Lib. IX.

many centuries beyond Galen's time. One of the most remarkable is in the collection of Mr Lewis, being engraved on a spheroid (fig. 8) of true jade, a mineral which is often said to have been unknown to the ancients. The veneration paid to this curious figure (originally a solar emblem) seems in some way connected with the history of the Elevation of the Brasen Serpent in the Wilderness. At all events, there must have been a very ancient tradition to that effect, for an enamel plaque of the 12th or 13th century, in the possession of Mr Octavius Morgan, representing that scene, displays the Chnuphis, exactly copied from the gem, elevated upon a cross, in different places through the camp.

The Gnostic talisman, figured below to the actual size (fig. 9),

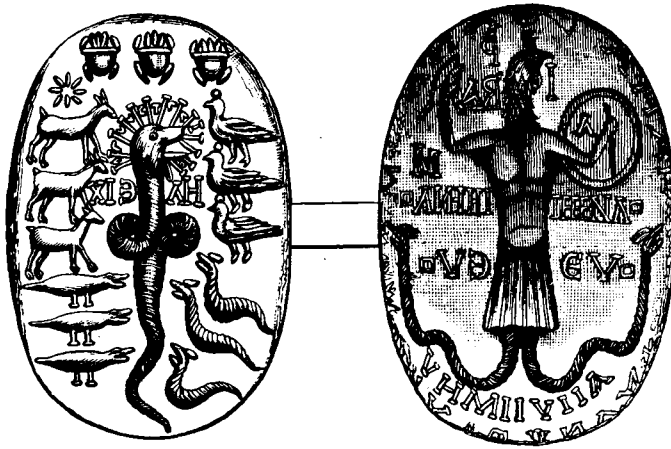


FIG. 9.

deserves a paragraph to itself from the richness of its symbolism, the excellence of the workmanship, and its exceptional magnitude. It is a red jasper of the finest quality, and came from Bombay, through the means of M. Feuardent, into the possession of the present owner. The plane face exhibits the Chnuphis serpent, with radiated head, erected in the midst of a choir of the sacred animals of Egypt, arranged in triplets—beetles, geese, asps, crocodiles, and calves. On the convex face

we have the regular type of the Abraxas-god, flourishing his whip to scare away evil spirits, and protruding his shield as symbol of protection. The inscription ΕVO has been read as Syriac for "The Serpent": the others have not been previously observed in this connexion, and offer a problem to the ingenuity of Semitic scholars. The union of Chnuphis with Abraxas is a novelty, the former having almost invariably for reverse (as on the jade already quoted) the triple S on a bar—probably representing the serpent-twined wand of the priesthood.

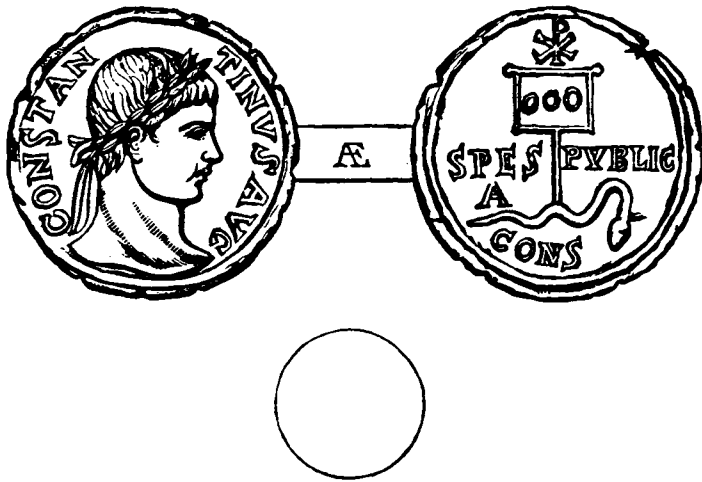


FIG. 10.

The earliest record that can be found of the *pictorial* representation of the Evil One, in the shape of a serpent, is that by Eusebius¹. "Moreover he [Constantine] set up a picture over the grand entrance of the Palace, displaying the Cross, that life-giving symbol, placed above his own head; whilst below him the adversary and enemy of mankind, who through the agency of impious tyrants had vexed the Church of Christ, was being cast down headlong in the figure of a *serpent*. For the divine oracles, in the books of the Prophets, have called him a *dragon* and a fuming serpent." We may still see the same idea embodied on that invaluable little coin (fig. 10) of the younger

¹ *Vita Constantini*, III. 3.

Constantine, which shows the serpent transfixed by the spear of the *labarum*, the "Trophy of the Cross," as Eusebius aptly terms it, with the explanatory legend SPES PUBLICA.

It is full time now to return to the symbolism of the gem, the proper subject of these remarks. Instead of the actual serpent of Constantine's painting, the Fiend is made to recall the classical figure of the Hydra. If there be any truth in the general opinion that Maximian intended, when he put on his coins a Hercules slaying the Hydra (as well as Jove throwing his bolts at the Titans), to commemorate his own efforts for the extirpation of Christianity, the adaptation of the type by our engraver was literally a "turning of his own cannon upon the enemy." The *aureus* of Maximian (fig. 11) preserves to us the latest representation of the Hydra produced by ancient

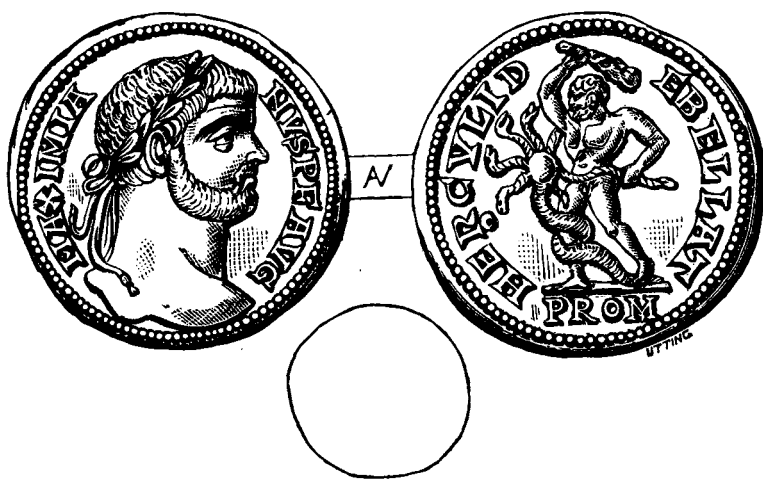


FIG. 11.

art. It is a coin of singular beauty, and considering the lateness of the period, a perfect miracle of workmanship. But the masterly treatment of the group, and still more the compactness (so evidently aimed at in its composition) with which Hercules is shown lifting the monster from the ground by one of its many necks, whilst it clings tenaciously to his body with its snaky folds, prove unmistakeably that the die-sinker had in view some bronze of the same subject coming down from the best

period of Grecian art. It is instructive to compare this, the latest, with the very earliest representation of this "Labour" on the coin of Phaistos alluded to on page 82; in which the looser arrangement of the figures, and the pictorial effect, which is so evidently kept in view (a most unusual thing in Greek coinage), equally declare that its engraver drew his inspiration from some celebrated *painting* of his times: a circumstance which critics have already noticed with respect to another fine production of the Cretan school, the Europa seated in a tree upon a coin of Gnossos.

To trace the Hydra down to its final extinction as a type; it may be added that the Byzantines combined it with the Gorgon (that most ancient of amulets, even put up by the Cyclops on the citadel of Argos) by surrounding her head with *seven* asps radiating from it round about. Gems and brass tesserae thus engraved are extant in abundance. The reverse always bears a legend in barbarous phonetic Greek to this effect¹: "Black, blackened Fate [or other evil] thou creepest like a serpent, thou roarest like a lion, thou shalt lie down like a little lamb." The most perfect specimen known to me is that figured by Chiflet²; the most curious, as being undoubtedly a Gothic work, is the so-called seal of St Servatius³, still preserved in Maestricht Cathedral. It is a large circular disk of green jasper, bearing on one side a rude bust of a saint, on the other the Hydra-Gorgon, with the regular inscription, but so disfigured by the ignorant copyist that only a word here and there can be recognised.

[The illustrations throughout this Communication are from antique originals in the cabinet of the Rev. S. S. Lewis.]

¹ ὙΣΤΕΡΑ ΜΕΛΑΝΗ ΜΕΛΑΝΟΜΕΝΗ ΟΣ ΟΦΙΣ ΗΛΗΣΕ Κ, ΟΣ ΛΕΟΝΒΡΥΧΑΣΕ ΚΕ ΟΣ ΑΡΝΙΟΝ ΚΥΜΟΥ. The γ takes the place of οἱ as early as A.D. 842, in the title of *Theodora Despuna*.

² "Macarii Apistapistus," No. 70 of the plate.

³ *Handbook of Engraved Gems*, p. 112.

IX. ON THE MEASUREMENTS AND VALUATIONS OF THE
DOMESDAY OF CAMBRIDGESHIRE. Communicated
by the Rev. BRYAN WALKER, LL.D., Corpus
Christi College.

[November 28, 1881.]

IN the winter session at the end of A.D. 1083 King William laid a tax of 72 pence on every hide of land in the kingdom, in order to raise forces to oppose the threatened invasion of Canute of Denmark. This tax was collected in A.D. 1084, and was levied, without doubt, according to the assessment for a Danegeld made in A.D. 1013. But the changes due to mere operation of time, aggravated by the devastation of the Danish wars and the mischief caused by the numerous revolts against the Conqueror's rule, had deranged the accuracy of the rating; and the levying of the Danegeld in A.D. 1084 caused deep and well-founded discontent. To ascertain the actual resources of the realm, with a view, most probably, to readjustment of taxation, the famous Commissioners were sent into the country, which seems to have been divided amongst them into nine circuits. According to Eyton, whose opinion is supported by other authorities, the circuits were as follows:

Circuit I. Kent, Sussex, Surrey, Hampshire, the Isle of
Wight, Berkshire:

„ II. Wilts, Dorset, Somerset, Devonshire, Cornwall:

„ III. Middlesex, Herts, Bucks:

- Circuit IV. Gloucestershire with part of Monmouth, Worcestershire, Herefordshire, and part of Wales:
- „ V. Cambridgeshire and Bedfordshire:
- „ VI. Northamptonshire with one-third of Rutland, Leicestershire, Warwickshire, Oxfordshire:
- „ VII. Staffordshire, Shropshire with part of Wales, Cheshire with part of Wales, South Lancashire:
- „ VIII. Derbyshire, Nottinghamshire with two-thirds of Rutlandshire, Yorkshire with Amurderness or Mid-Lancashire, North Lancashire (i.e. Furness with part of Westmoreland), Lincolnshire, Huntingdonshire:
- „ IX. Essex, Norfolk, Suffolk.

Cambridgeshire and Bedfordshire therefore constituted the smallest circuit, and it may be because the Commissioners in this narrow district had an abundance of time for their task, that these two counties are surveyed with an amount of detail only exceeded in the returns for Essex, Norfolk and Suffolk. In the three counties last named the Clerks of the Exchequer appear not to have condensed the original reports, as they did generally; whilst in Cambridgeshire and Bedfordshire they seem to have abridged the returns of the travelling Commissioners, but to have had before them returns of unusual completeness. That in all parts of England the primary survey contained a much greater amount of detail than we now find in the Book of Winton¹, is proved by the existence of the *Inquisitio Eliensis*²,

¹ *Liber de Wintonia* seems to have been the technical title in early times of the book now known as Domesday: and the last-mentioned name comes into use in the twelfth century. The *Dialogus de Scaccario* speaks of it as *Liber Judiciarius*. But as to this see Freeman's *Norm. Conq.* Vol. 5, App. A.

² Only two copies of the *Inquisitio Eliensis* are known to exist. The one in the British Museum was given to Sir Robert Cotton by Arthur Agard, whose well-known paper "On the Dimensions of Lands in England"—(to which I shall make frequent reference,)—bears date Nov. 24, 1599.

the Exon Domesday and the Boldon Book, all transcripts of the original papers, made *verbatim* by those interested in the tenure of particular districts or holdings. The *Inquisitio Eliensis* is useful in testing, and sometimes in completing, certain entries contained in our Cambridgeshire Record, those, namely, of the possessions of the Abbey of Ely, in behalf whereof this copy seems to have been taken about the time of Henry II. The *Inquisitio*, like the Exon Domesday and the Record of the three East Anglian Counties, gives particulars as to the store-cattle, sheep, pigs and horses in each manor or holding, in addition to those statistics as to hidage, carucage, cultivators and profitable incidents set down in the Great Exchequer Book.

Bearing in mind the occasion of the Survey, we are prepared to find a Statement of the Hidage on which the tax of A.D. 1084 was levied, and an estimate of the actual value of every holding; but, besides, we find many other important and interesting particulars, as the hidage in demesne, when there was any, the quantity of land under the plough, the number of teams, and (in the original notes of the Commissioners,) the number too of the animals not used for draught; also the number of cultivating tenants, slave, serf or free¹. Each entry concludes with the *valet*, or estimate of income; and in addition we usually find two other valuations set down, viz. the worth of the land when the then tenant entered on it (*Quando recepit*, Q. R.), and the worth in the time of the Confessor (*Tempore Regis Edwardi*, T. R. E.). All these valuations are far from being proportionate to the Hidage; and this I think we should expect, first, because of the prevalence of exemption or favourable hidation (a point to which I shall recur), secondly, because

¹ I must dissent from the opinion of Archdeacon Hale, that tenants are not enumerated in these lists when they paid money rents only, and rendered no agricultural services; as I also cannot agree with his notion that the *valet* comprises *only* the pecuniary renders of these non-working tenants. I shall discuss these points later on.

of the depressed condition of England when Ethelred first levied the Danegeld of A.D. 1013.

The following table shows the state of the case as regards Cambridgeshire. Against each Hundred I have placed the number of Hides, the Domesday value, and the value T. R. E., omitting only the valuation Q. R.:

Hundred.	Number of Hides.	Domesday Value.			Value T.R.E.		
		£	s.	d.	£	s.	d.
Chesterton	117½	76	9	4	90	0	0
Cheveley	29	94	8	4	86	0	0
Chilford	54½	124	13	3	113	8	11
Ely	80½	173	7	0	197	3	0
Erningford	100	203	8	4	235	0	4
Flendish	46	79	12	8	69	2	8
North Stow	108	87	1	0	135	18	0
Papworth	95¼	85	12	4	110	18	8
Radfield	69½	105	17	8	101	7	8
Staine ¹	54	112	13	4	88	0	0
Staplehow	87½	240	9	0	204	13	4
Stow	96	129	10	6	173	12	6
Triplow ²	87	119	10	0	130	15	0
Wetherley	77½	149	13	0	160	5	4
Whittlesford	80½	88	12	4	106	5	8

I will now proceed to make some observations upon various points which an examination of the Domesday survey has suggested to me; and these I propose to arrange under the following eight heads³:

¹ In the number of hides I have allowed 8 for Great Wilbraham, where the number is omitted.

² Here, in giving 87 hides, allowance is made for 2½ hides + 9 ac. set down *twice*, and 1½ hides + 6 ac. set down *three* times in Shelford.

³ It has been found impossible to print intelligibly on ordinary pages the tables which contain my exact analysis of the whole contents of the survey, so far as Cambridgeshire is concerned. They have therefore been printed in a separate fasciculus.

- I. On Hides and their Size.
- II. On Caruca and Terra ad Carucam.
- III. On Domesday Acres.
- IV. On Bovates.
- V. On Hidation.
- VI. On the Domesday Valuation (*valet*) of Manors and Holdings.
- VII. On the Population of the County.
- VIII. On the Minor Incidents of Value.

I. *On Hides and their Size.*

On few points has greater difference of opinion prevailed than on the number of acres intended by a *Hide* in the Domesday Book, and on the relation of the *Carucate*, *Virgate* and *Bovate* to the Hide. Ellis in his "Introduction to Domesday" quotes the most contradictory statements on these topics, and himself arrives at no definite conclusion, except that a *Virgate*, or Yardland, was the fourth part of a Hide; and that in many parts of England *Carucata* was a synonym of Hide, both being something distinct from Ploughland, or *Terra ad unam carucam*. With the first conclusion of Ellis, I think, the Cambridge Domesday is entirely in accord. As to the second, *Carucata* is a local designation of the Hide, in Lincolnshire preeminently, also in Derbyshire, Yorkshire, Nottingham and Rutland. Leicestershire might be added, as the *Hide*, in the few places where it is mentioned in the Domesday of the County, has reference to Saxon measurement, and the Norman estimate is in *Carucates*¹.

¹ See the Tables at the commencement of Nichols's *History of Leicestershire*.

Walter Whittlesey, quoted by Kennet, says, "in provincia Lincolniae non sunt hidæ, sicut in aliis provinciis, sed pro hidis sunt carucatæ terrarum, et non minus valent quam hidæ." And Knighton also says: "de qualibet hida, id est carucata terræ."

Taking then these two points for granted, we find the authorities quoted by Ellis upholding one or another of three views:

- (1) that the Hide was about 240 modern acres,
- (2) that the Hide was 100 or 120 acres (*centum*),
- (3) that the Hide was a variable quantity, a mere measure of assessment, viz. that amount of soil which, according to its fertility, the proportion of its land under plough or in enclosures to its pasture, woodland and waste, and its supply of working cattle and cultivating serfs, was considered proper to be rated for six shillings Norman¹ in the report of Domesday, "about this land, how it was set," made in A.D. 1086.

Kemble's view is altogether different. He says that the Hide of Domesday was 40 Norman acres, or $33\frac{1}{3}$ Saxon (one or other of these acres being our modern acre), and that the Hide was arable land only: the latter being, according to almost all other writers, an erroneous assumption, at any rate in reference to the Norman Survey. He supports his numerical estimate mainly by reference to the Hidage of various parts of England,

¹ Nichols in his *History of Leicestershire* (copying Hutchins on Dorsetshire, and both of them following Webb, *On Danegeld*), says that *Libra* in Domesday = 12 oz. = 72 *solidi*, = £3. 12. 0 of modern money *in weight*. Kelham says *Libra* = £3. 2. 0, possibly a misprint for £3. 12. 0. *Solidus*, according to all of them, = 12 pence, or *in weight*, 3 modern shillings. Hume, *Hist.* i. 103, says the Saxon silver penny was three times as heavy as it is now, that 5 pence made a Saxon shilling, and 48 shillings a pound, which therefore was equivalent to 60 shillings of modern money.

given by Beda¹, and by quotation of two lists of the Hides in certain counties, found in the Cotton MSS. These lists relate to a much earlier period than the Conquest, are to a great extent contradictory, and, as far as I have had opportunity of testing them, the Hidage of each and all is inconsistent with the Domesday Hidage; showing that a Hide, as Beda and his contemporaries understood it, had nothing but its name in common with the Hide of Ethelred or the Conqueror. Kemble seems to have scarcely inspected the Great Domesday (*Liber de Wintonia*), but he makes an isolated quotation from the Exon Domesday, in support of his contention that a Hide is 40 acres. Eyton, however, taking a different reading of the figures in this entry, deduces that a Hide is 48 acres: and this he says is correct, because the Inquisitors of Dorset calculated in *Gheld Acres* (of which more hereafter), each containing 5 statute

¹ See Kemble's *Saxons in England*, pp. 101—110 and App. B.

Beda says

The Isle of Wight contained	1200	hides, and its acreage is	86,810.
Thanet	600	" " "	26,500.
Kent	15,000	" " "	972,240.
Sussex	7000	" " "	907,920.
East Anglia	300,000	and Norfolk and Suffolk contain	2,241,060 acres.
Essex	7000	" and its acreage is	979,000.

These are Kemble's figures; and the other documents which he quotes are:

I. Cotton MS. Claud. B. vii (fol. 204, b.), which appears to have been written in the time of Henry III.,

Wiltescyre	4800	hydæ.	Herefordscyre ...	1500	hydæ.
Bedefordscyre	1200	"	Warewycscyre ...	1200	"
Cantebrigescyre ...	2500	"	Oxenefordscyre ...	2400	"
Huntedunescyre ...	850	"	Salopescyre	2300	"
Northamptonescyre..	3200	"	Cesterscyre	1300	"
Gloucesterscyre ...	2400	"	Staffordescyre	500	"
Wirecesterscyre ...	1200	"			

II. Cotton MS. Vesp. A (fol. 112, b.), written in the reign of Edward I.

Bedfordshire	1000	hydæ.	Worcestershire ...	1500	hydæ.
Northamptonshire	4200	"	Shropshire	2400	"
Gloucestershire ...	2000	"	Cheshire	1200	"

acres¹. Whether 40 or 48 be correct, we must, at any rate, agree with Eyton that the acres are of Gheld measurement.

Hence, this proof of Kemble's fails, and his lengthy tabulation of acreages on p. 106 of his *Saxons in England* is of little value, first, because he assumes that he may take the modern acreage of a manor as identical with its acreage in Saxon times, and secondly, because the extracts from the *Codex Diplomaticus*, on which his table is based, refer to a period anterior to the imposition of Danegeld, ("antequam Anglia hidata fuit" in Agard's words), when "hide" may have meant, as Kemble says it did, the allotment competent to maintain a household, but certainly did not mean what it denoted in Ethelred's assessment. These ancient hides were very likely identical with the *mansæ* of the towns mentioned in Domesday. (See Stubbs' *Constit. Hist.* vol. I. p. 74, note. Robertson's *Historical Essays*, pp. 88—102.)

To return, then, to the other three views. In support of the first, that the Hide was 240 acres, we have mention in a Register Book of Ely, quoted first by Agard, and afterwards by Ellis, that at Leverington the Yardland, or quarter-hide (for such hereafter it will be proved the Virgate was), contained 60 acres. We have also the facts that in Dorsetshire, Somersetshire, Shropshire, and Lincolnshire, the number of Hides, as tabulated by Eyton and others whom he quotes, gives (when divided into the known acreage of the counties,) the result of an average

¹ Kemble says (App. B. p. 490): "in the Exeter Domesday fol. 48 we find 10 hides of land to be made up of the following parcels, 4 hides + 1 virgate + 6 agri + 5½ hides + 4 agri," and adds that therefore $10 h = 9\frac{1}{2} h + v + 10 a$: whence he deduces, as $h = 4 v$, $v = 10 a$, and $h = 40 a$.

Eyton reads 8 *agri*, where Kemble reads 6 *agri*; although it must be confessed that the MS. seems in favour of Kemble. But the entries in the Exon Domesday are not very accurate generally; and particularly inaccurate in the page from which the quotation is taken. In the very next entry, for instance, we have mention of a Manor of 5 hides, but made up of 3 hides + 8 acres in demesne and 2 hides - 12 acres held by villains, a manifest error of 4 Gheld acres = 20 statute acres, on one side or other of the equation.

of 240 $\frac{3}{4}$ acres for a hide in Dorset, 250 in Somerset, 244 in Ketsteven, the only portion of Lincolnshire where the condition of the county in Norman times was comparable with the modern state of things, and a little over 240 acres in Shropshire.

In Sussex, again, Horsefield says, there were 3480 hides according to Domesday; and the County now contains 934,006 acres, giving 268 acres to the Hide; but allowing for marsh and waste ground, 240 here also is a fair approximation. In Leicestershire the Hides, by Nichols's calculation, are 2105, and the acreage 514,164, making the Hide about 245. But we must admit that in Wiltshire, the Hides, calculated as Eyton calculates them for Dorset and Somerset, are 4632 (see Wyndham's *Domesday of Wilts*), and the acreage is 867,792, making the hide 187 acres.

In support of the second view, we have a statement in the *Dialogus de Scaccario*, probably taken from the *Liber Niger* of Henry II, that a Hide is equivalent to a hundred acres, or to 120 (for *centum* in ancient documents frequently means *six score*¹), also an assertion in a Malmesbury MS., referred to by Agard, Spelman and Ellis, that a virgate = 24 acres, and that a Hide = 4 virgates, making the Hide 96 acres. We have further in the same Register Book of Ely, which puts the Yardland, or quarter Hide, in Leverington at 60 acres, a statement that it measured 30 acres at Fenton, and 32 acres at Tyd St Giles, the Hide therefore being 120 or 128 acres in those localities. Kennet in his *Glossary*, quoting from Agard, speaks of Hides, or Carucates, of 112 acres and 150 acres (*temp. Ed. III.*) at Burcester and Middleton in Oxfordshire. He also mentions a charter of

¹ Agard quotes a curious note: "entred in an ancient Record in the Treasury, before a Declaration made of Knights' Fees belonging to the Bishop of Lincoln: nota, quod carucata terræ continet in se C acras: et viii bovatae faciunt carucatam; et quælibet bovata continet xv acras." Also "from the Black Book, in cap. penultimo lib. I, hida a primitiva institutione ex centum agris consistit, which in mine opinion is six score acres." See also Elton, *On the Tenures of Kent*, p. 126.

9 Richard I where one hundred (120) acres are assigned to the Carucate; but against this must be set his mention of a Carucate of 60 acres in another record of the same reign. The explanation probably is that in the last instance he is quoting an account of the *carucata operabilis*, or portion of land actually taken out of fallow in any year, in a three-shift manor, where 60 acres were reploughed and 60 freshly broken up each year.

C. G. Smith in his *Domesday of Lincolnshire* says: "the hide of land and the carucate of land are estimated to contain 120 acres each." Marsh very strenuously maintains that a Hide was 120 acres, in the Glossary prefixed to his "*Domesday of Essex*," and quotes some very convincing passages. In Bishop Hatfield's Survey, circa A.D. 1360, we have carucates of 120 acres at Halghton, and carucates of 8 bovates (each bovat = 20 ac.) at Rykenhall: but in the 14th century the "carucate" was fast losing its original signification, and assuming a new meaning, to which I shall presently refer.

Selden hovers between the two views already exemplified, holding that "the hide was 240 acres till the reign of Richard I, and then was reduced to 100"; but, as will be shown immediately, he does not adhere to this opinion, or to either of these opinions, consistently. We have, perhaps, the most cogent proof of all, a matter of record, in the *Placita apud Cantabrigiam*, 18 Ed. I. (which is quoted by Agard and Ellis): "dicunt quod sunt in Hokington (a village in Cambridgeshire, now called by the vulgar Oakington) XII hidae terrae, quarum quaelibet hida continet in se sexies viginti acras terrae." But observe that "continet" may imply that the 120 acres of arable were *part* of it, and not the whole.

It is also worth noticing that in the *Inquisitio Eliensis*, where a Hide is generally denoted by the abbreviation *h*, and rarely by *hid*., there are two entries where instead of *h*, we find written *hund*., viz. in the accounts of the Abbot of Ely's holdings in Wratting, "III hund.," and Melbourne, "de his VIII hund."

These may, of course, be mere blunders of the scribe, but it seems more probable that he considered the Hide to contain a hundred, i.e. sixscore, acres of arable land.

For the third view, that a Hide is not a matter of acreage at all, we have Selden's maturer opinion, that "the Hide was ever of an uncertain value," and we have besides the fact established by Eyton's careful examination of Dorset areas, that in various manors of that county the Hide ranged from 4,000 to 84 acres, the average, however, being, as already said, about 240. Wyndham, in his *Wiltshire Domesday*, makes "no scruple to define Hida as an uncertain portion of land, that might annually be worth twenty Norman shillings."

Amid these conflicting views can nothing definite be established?

Keeping all three in view, I have carefully analysed the Domesday of Cambridgeshire: and the conclusion to which I am led is that they *can* be harmonized, for that each is, in its own sense, correct. The Domesday Hide varied, I believe, enormously in extent; but still, in districts cultivated according to the ordinary fashion of the time, contained on a rough average 240 acres; about 120 of them, or in some manors 80¹,

¹ In the Hundred Rolls we have mention of Hides or Carucatæ of 120 acres, or virgates of 30 acres, in Cottenham, Westwick, Hokington, Girton, Elsworth, Papworth Agnes, Bourne, Harston, Triplow, Foulmire, Barton, Barrington, Grantchester, Haslingfield, Harlton, Orwell, Shepreth, Hinxton, Sawston, Whittlesford, &c.: and of Hides of 80 acres in Cottenham, Teversham, Fulbourne, Conington, Swavesey, Balsham, Swaffham, Isleham, Hardwick, Bourne, possibly Gamlingay, and Barrington. Larger hides or carucates of 160 acres are found in Barrington, Orwell, Wimpole. It will be noted that in some vills there are hides of different sizes: this is explained by such vills containing two or more manors, cultivated on different systems, two-field or three-field, as shown hereafter.

The proof that a virgate was one quarter of a Hide, depending on the connection of the number of acres in each of them, is purposely postponed till the subject of "Norman acres" is discussed, to avoid an inconvenient digression.

being under the plough each year, 60 or 80 more, according to the system of the cultivation in the manor, lying in fallow, and the residue consisting of open meadow, pasture or waste, or occasionally wood; the Hide being sometimes smaller than usual when there was an extra amount of ploughland in it, and invariably of extra size when wood or marsh was one of its components. In Saxon times we find mention of Hides or Cassatæ of twelve score acres¹, and Hides of six score acres²; but we do not find any clear distinction drawn between the two; and it would seem that they were but designations of *the same* Hide; the full Hide, “plena hida in terra, in campo, in silva” (*Lib. Eliens.* p. 140) being spoken of as a Hide of 240 acres, and the Hide in which the plough-land and enclosures alone were exactly measured, and where the *appendiciæ* were “thrown in,” so to speak, i. e. *implied*, but not included in the acreage, being called the Hide of 120 acres. When the measurement was that of an entire manor, not intermixed as to its arable land, pasture and wood with another manor, it could be taken in either measure, according to the local custom; but in intermixed manors³, and in manors where sub-infeudation had begun, the measure must of necessity have been taken according to the smaller standard, i. e. that of 120 or 80 acres; for in such manors the only quantity admitting of reckoning “by metes and bounds” would be what was held in severalty;

¹ See *Liber Eliensis*, pp. 132, 145, 147, 149. Stewart’s Edition.

² *Ibid.*, pp. 127, 150.

³ These intermixed manors, where the arable land, though separate in property, lay in the open fields in alternate strips (*seliones*), were known in Saxon times. The *Liber Eliensis* mentions a case of the sort in the Manors of Newton and Hawkston long prior to the Conquest: “*acra sub acra posita.*” Subinfeudation multiplied this intermixture; for instance in the gifts to the Abbey of Denney by Henry Picot and his son Aubrey, about A.D. 1150, there are specified (1) “*vi acras in villa de Beche* (Water-beach), *duobus in quolibet campo*”; (2) “*ix acras terræ, tres in quolibet campo.*” See the quotation of the original grants in Dugdale, *Monast. Angl.* pp. 1552, 1553.

the pasture &c. not being divisible, but enjoyed in common proportionately to the arable holdings¹.

Hence, it is equally true, looking at local discrepancies, to say, with Selden, that "the Hide was ever variable;" or, having regard to the average of England, that the full Hide was, either by measurement or estimate, some 240 acres; or that it was usually about 120 measured acres (or less, very commonly only 80), with necessary, but unmeasured appendages.

In Cambridgeshire (excluding the Isle of Ely, which in Norman times would be mainly marsh, so that its present acreage can have little relation to its eleventh century hidation), we find 1102½ Hides set down in Domesday, and the area of the manors specified is now 296,331 acres: for the modern and ancient county are seen at once to have been conterminous². Hence, the average Hide of Cambridgeshire would seem to be 269 acres: but if we bear in mind that now much land exists, as in Soham, Cottenham, Waterbeach, &c. which was under

¹ There is a very interesting dissertation on the nature of common-rights in Marshall's *Rural Economy of Yorkshire*, Vol. i. ch. 5, London, 1788. Marshall's conclusion is that these rights attached by common law to arable land, rather than to dwelling-houses. See also the same view maintained by the late Joshua Williams, whose opinion is always most valuable, in Appendix C to his standard work *On Real Property*.

² Lysons, in his *History of Cambridgeshire*, says that the following parishes are not accounted for in Domesday: Bartlow, Brinkley, Coton, Eltisley, Mepal, Leverington, the two Newtons, Outwell, Tidd, Upwell. Outwell and Upwell are for the most part of their area *out* of Cambridgeshire. Leverington, Mepal, Newton in the Isle, and Tidd very probably were then under water. Eltisley *is* mentioned, under the name of Hecteslai. *Bercheham* of Domesday appears to be Bartlow, or Barham, a hamlet of Linton. Brinkley alone, outside the Isle, cannot be traced: but may like Coton and the other Newton be counted with another manor: for as to Newton, the *Liber Eliensis* tells us: "de Newetun terra procul dubio pertinet at Havekestun (Hawkston), acra sub acra posita;" and Coton was parcel of Grantchester, as we see from an entry in the *Liber Niger Scaccarii* of Henry II, where as part of the Honour of Bologne is mentioned: "de Geodo Gaufridi de Fereles Grantset cum quodam pertinente in Cotes."

water all the year round in A.D. 1086, and therefore would not be reckoned by the Commissioners, we may fairly accept 240 acres as the average Hide of Cambridge, as it was of Dorset, Somerset, Shropshire, Ketstevan, Sussex and Leicestershire.

If, however, we take separately each Hundred of the County, we find most remarkable differences in the average of the Hide, obtained by dividing the Domesday Hidage in each case into the modern acreage. The results are as follows :

Hundred.	Modern Acreage.	Hides in 1086.	Acres to the Hide.
Chesterton	15847	117½	135
Cheveley	12905	29	445
Chilford	21984	54½	403
Erningford	29641	100	296
Flendish	11786	46	256
North Stow	20572	108	190
Papworth	26089	95½	275
Radfield	24008	69½	345
Staine	18917	54	350
Staplehow	40752	87½	466
Stow	26269	96	274
Triplow	16475	87	189
Wetherley	19144	77½	247
Whittlesford	11942	80½	148
	<u>296331</u>	<u>1102½</u>	<u>269 average.</u>
Isle of Ely	233248	80½	2898 average.

The conclusion to be drawn is that holdings were more valuable per acre, because containing an excessive proportion of land under plough and in enclosure, in such Hundreds as Chesterton, Whittlesford, Triplow and North Stow, than in Cheveley, Chilford, Staine and Radfield, where the country was mainly woodland, or in Staplehow, or still more in the Isle of Ely, where marsh and mere prevailed. The acreage per Hide in the Isle of Ely is even greater than in the Lincolnshire provinces of Lindsay and Hoyland; in the former of

which it was a little more than 500 acres, and in the latter about 1000¹.

In many of the Cambridgeshire Hundreds the Hides closely approximate to the normal Hide of 240 acres: and in these we may conclude that the distribution of the various kinds of land was a fair sample of England generally, and these, therefore, will furnish the best examples of average rental and the like.

II. *On Caruca and Terra ad Carucam.*

In the Domesday of Cambridgeshire, as already noted, Carucates are never mentioned as synonymous with Hides; but the abbreviation *Car.*, so frequently recurring, denotes either the land which one team could cultivate, *Terra ad carucam*, or the team itself of eight oxen and the plough they drew, *Caruca*².

In passing I may remark that in counties where Carucata is used as another name for Hide, it designates sometimes an ungeldable Hide, *i. e.* one exempted from Danegeld; or sometimes is a Hide newly formed out of land previously ungeldable: or, on the borders of Wales, is land newly conquered, and therefore for the first time liable to taxation. In Lincolnshire, on the contrary, it is but the ordinary Hide, geldable or ungeldable. With *carucata*, however, in this sense, we have

¹ In Staffordshire the hides were very large, nearly 1500 acres on the average, if we divide the number of them into the modern acreage: but this is to be accounted for by the immense quantity of woodland, and of land thrown out of cultivation by Norman ravages. The same explanation would apply, no doubt, to the Northern Counties; but in these the record is so vague that a calculation of the acres to a Hide is all but impossible. See Eyton on the Domesday of Shropshire.

² That *caruca* does not mean the eight oxen only, but the oxen *and* the plough, seems evident from such entries as:

"Non sunt ibi nisi boves:" Croydon, Erningford Hundred:

"Sex boves ibi sunt, 1 caruca potest fieri:" Hochintone, Northstow Hundred.

nothing to do, when looking merely at the Cambridgeshire Domesday.

Terra ad carucam or *ad unam carucam* is simply the arable component of the Hide; amounting, as already said, usually to 120 acres, not unfrequently to 80 only, and perhaps sometimes to a little more than 120; but 80 is almost certainly its minimum. Agard's statement that a ploughland was sixty acres has been already commented on; and explained, I hope satisfactorily, to refer to the newly broken-up land, and not to all the land under the plough: and I think Marsh in his *Essex Domesday* has made a mistake in considering Agard to fix sixty acres as the *general* amount of *terra ad carucam*. Agard quotes only this one mention of 60 acres, and several of 120 for the *terra ad carucam*. Eyton¹ says: "Domesday nowhere expresses directly the acreage of a plough-gang; but in a few instances it is clear that it did not exceed, and probably equalled 120 measured acres." H. P. Wyndham² also writes: "The measure of a Carucata" (he means *terra ad carucam*) "differs considerably, not only in different counties, but even in the different parts of the same county. In some parishes it is no more than 100 acres, while in others it may be 140. I shall, therefore, take it upon an average at 120." And C. G. Smith speaks to the same effect in his *Introduction to the Domesday of Lincolnshire*, p. xxvii.

I have already mentioned some of the evidences from the Hundred Rolls, where the Hide and the *terra ad carucam* seem to be identical (the adjuncts of commonage being understood, but not expressed), showing the one and the other to be as a rule either 120 or 80 acres. To these I may now add some further estimates, obtained by comparing the total area stated either in the Domesday Book or Hundred Rolls for Cambridgeshire with the minute record of holdings of

¹ *On the Dorset Domesday*, p. 23.

² *On the Wiltshire Domesday*, p. viii.

sub-tenants in the latter; and I will end with some confirmatory indications from the Domesday, standing alone. Alberic de Ver, ancestor of the Earls of Oxford, had in Great and Little Abington $11\frac{1}{2}$ hides according to Domesday; the Earls of Oxford still held the whole of these manors in A.D. 1279, and their arable land was $1074\frac{1}{2}$ acres: so that the hide was a little over 90 acres. In Fulbourn the Earl of Richmond had $2\frac{1}{2}$ hides in 1086; his successor 200 acres in 1279; or hides of 80 acres. The same value for the hide, i.e. the *terra ad carucam*, is found in Fulbourn, where the lands of John Fitz-Waleran (6 hides) had passed to Bigot of Norfolk (480 acres). In Burwell the hide is similarly made out to be 131 acres, but seems to consist of crofts and tofts as well as plough-land, so being probably 120 acres of plough-land. In Bourne the Abbot of Ramsey's Domesday Hide is represented in the Hundred Rolls by 77 acres; and in Cottenham in A.D. 1279 we have a hide held under Robert de l'Isle, described as $45\frac{1}{2}$ acres in demesne and $34\frac{1}{2}$ acres held by tenants: whilst the Rector's manor of 2 hides has 78 acres held by himself and $77\frac{1}{2}$ by his tenants. In Stow 2 virgates, i.e. (as will be hereafter shown) half a hide, contain $63\frac{1}{2}$ acres. There is a virgate mentioned in Hawkston in A.D. 1279 of 24 acres; one in Shepreth of 36 acres.

And now to pass to Domesday itself, without seeking further corroboration in the Hundred Rolls or elsewhere. In Pampisford, Chilford Hundred, we have mention of a total holding of 10 acres with one bovat of arable land, and nothing more specified: this, as eight oxen went to the team, denotes 80 acres to the *terra ad carucam*. There is a similar entry in Kingston, Stow Hundred; another in Hardwick, Stow Hundred. In Hokington, North Stow Hundred, 15 acres with 1 bovat and no adjuncts; 40 acres with 4 bovates in Isleham, Staplehow Hundred: 80 acres with one *terra ad carucam* in Balsham, Radfield Hundred. Other instances could be

mentioned: but these seem enough to show, what is now being alleged, that the *terra ad carucam* was 80 or 120 acres usually, seldom more than the latter number, never appreciably less than the former.

Here it seems proper to remark that *terra* in Domesday occasionally means land generally; but more often arable land only. In the latter sense it is, I think, used, when *small* plots of land, such as those just referred to, are assigned to tenants, and described merely as so many acres, and not as Hides or Virgates or fractions thereof. To these sometimes, perhaps usually, rights of commonage were annexed as a matter of course, unless the grant was express to the contrary, and of these restricted grants the above-named holdings seem examples. But more often land and commonage went together, so that a right to land, not restrained by covenant, implied also a right to a due proportion of feeding on the common land of the manor.

A very important question now arises, not perhaps as to these smaller holdings, which sometimes were merely of arable land, but as to the entire manors, or large grants out of them; whether the *terra ad carucam* denotes the land which *from time to time* was ploughed, or the land actually ploughed in any *single year*. I believe it to mean the latter¹; and that consequently the difference of *terra ad carucam* of 80 acres

¹ Since this paper was read to the Society, I have met with a remark of Benj. Williams Esq. in the *Archæologia*, Vol. 33, p. 278, which confirms this view. He writes: "at present (in the Manor of Aston and Cote in Oxfordshire.) the system of agriculture is the four-course,—wheat, beans, oats and fallow: but two centuries ago, the three-year course was followed, with fallow every third year. It is important to remark that this circumstance affected the number of acres which were allotted to the hide in different shires," (I should say in smaller districts,) "for in all inquests *post mortem* no value was returned for the portion of the hide that lay in fallow (*ad warectum*), and we may fairly presume that the like rule obtained in public contributions to the king." He adds: "thus Mr Horde values '22 acres in Holiwell Field at 10/- per annum, 2 years sowed in 3, comes to pr. annm. but £8.'"

or 120 acres distinguishes the manors under a two-fold course of cultivation, one crop and then a fallow, from the manors under threefold course, *i. e.* two crops and then a fallow¹. In the two-course manors, taking the hide at 240 acres as an average, but not forgetting how much it varied, there would be 80 acres under plough, *i. e.* the *terra ad carucam*; 80 of arable land, but laid in fallow; 80, more or less, of sheepwalk, pasture and wood, never broken up: whilst in the three-course manor there would be 60 acres bearing a second corn-crop, 60 just brought into cultivation from fallow, these two being the *terra ad carucam*; together with 60 arable, but laid for the year in fallow; and 60, more or less, never cultivated, and only used for pasturage. On this hypothesis we can explain the new force of the term *Carucata*, as used by Fleta, who speaks of carucates of 160 acres, and carucates of 180 acres, expressing thereby the Plantagenet view of "arable land," as land arable *in its due course*, whether used or not in any particular year; *i. e.* the Domesday *terra ad carucam* of 80 acres or 120 acres, together with the "idle shift;" which in the one kind of manors would be another 80 acres, and in the other kind an extra 60 acres. This new application of "carucate" or "*terra ad carucam*" exhibits itself in the Hundred Rolls, where we have, for instance, mention in Stow of a carucate of 160 acres, 2 of these carucates going with 2 hides; and in Comberton of John le Merk's holding, wherein the items amount to 23 half virgates of 15 acres + 16 acres in small plots, and are set at 2 carucates, so that the carucate is as nearly as possible 180 acres. The *virgate*

¹ See Fleta II. 72 *De officio communis senescalli*.

Item certificetur in primo adventu suo de custagiis carucarum in quocumque manerio, quæ sciri poterunt per hanc rationem, ut terræ sint tripartitæ, tunc nonies viginti acræ faciunt carucatam, eo quod lx in hyeme, lx in quadragesima, et lx in æstate pro warecto debent exarari.

De terris vero bipartitis debent ad carucam octies viginti acræ computari, ut medietas pro warecto habeatur, et medietas alia in hyeme et quadragesima seminetur, et proinde de numero carucarum de facili poterit certiorari.

too, which etymologically merely means a *quarter*, was in the Hundred Rolls sometimes a quarter of a Carucate (in the new sense), rather than a quarter of a Hide, and so we account for the mention of virgates of 40 acres (in two-shift manors) at Barrington, Orwell and Wimpole.

An objection may be made to this theory on the ground that, if Fleta's 'carucate' be taken to mean the amount which a team of eight oxen could keep in cultivation (and that I certainly contend it does), then, as a team in a two-course manor could only work 80 acres each year, or keep 160 in constant cultivation, therefore a similar team in a three-course manor would be overworked, if they had to plough 120 acres each year, as they would have to do to keep 180 in constant cultivation. The reply is that land freshly broken up out of fallow required ploughing *twice*, whilst land cropped one year in wheat and the next in barley required only one ploughing for the second crop, and was in a much more workable condition than the other. The ploughing out of fallow in the summer (*ad warectum*) would be twice as hard work as the second ploughing of the same land about Martinmas (*ad hibernagium*), and twice as hard as ploughing wheat stubble in preparation for a barley crop (*ad tramesium*), in the early spring. Thus, the work done by the oxen in ploughing an acre being represented by x , the one team would in the year do work equivalent to

$$2x \cdot 80 \text{ (ad warectum)} + x \cdot 80 \text{ (ad hibernagium)} = 240x,$$

and the other

$$\begin{aligned} 2x \cdot 60 \text{ (ad warectum)} + x \cdot 60 \text{ (ad hibernagium)} \\ + x \cdot 60 \text{ (ad tramesium)} = 240x, \end{aligned}$$

identically the same; granting the assumption (I think a fair one), that ploughing out of dead fallow is twice as hard as ploughing land already once ploughed or quite lately cleared of a crop.

III. *On Domesday Acres.*

It is, next, necessary to consider whether the acres of the Cambridgeshire Domesday are the same as our modern acres or different. It is well known that there was in Norman times what was called a *Gheld Acre*, twelve of which made a virgate, and therefore 48 a hide, assuming for the present that a virgate is a quarter hide. The acre, however, ordinarily used was the present statute acre of 160 square poles; though in Kent, at any rate, the linear pole was only 16 feet instead of $16\frac{1}{2}$ as at present. But possibly this was only a local variation, and the ancient acre seems to have been practically the same as our modern acre. If the Hide be, as suggested, 240 statute acres, the Gheld acre would be 5 statute acres. In the South Western counties the Gheld acre was often the unit, and Eyton (*On the Domesday of Dorset*, p. 15), advances the opinion that it was employed when measuring an entire manor, whilst small allotments were set down in the Domesday in statute acres. In Cambridgeshire it is sometimes difficult to settle which kind of acre is intended, but on the whole it would appear that the Juries of the several Hundreds (whose names are recorded in the *Inquisitio Eliensis*) were consistent in using only one measurement throughout their returns, but that some of them used the one and some the other. And it would also seem that the Juries where Hides were extensive in area used the Gheld measure, possibly to simplify their numbers; whilst the Juries of the Hundreds with small hides used statute acres, to avoid fractions.

On reference to my lists of holdings, which accompany this essay, it will be observed that in three Hundreds, Erningford, Flendish and Whittlesford, acres are not mentioned at all,

and that in Papworth the two entries where they occur are inconclusive. But in Stow Hundred there are one or two entries which must relate to ordinary acres. We have, for instance, in Hardwick land containing 3 hides + a virgate + 12 acres; but, if Gheld acres had been meant, 12 are a virgate, and the entry would have been 3 hides, 2 virgates, or more simply $3\frac{1}{2}$ hides. In Caldecote too, in the same Hundred, the virgate + 20 acres of David would be a strange entry, if in Gheld measure, the 20 acres being much larger than the virgate. So, again, in Triplow Hundred 9 hides + 24 acres, would be $9\frac{1}{2}$ hides, unless the acres were of statute kind. In Staine Hundred $\frac{1}{2}$ hide + 30 acres must also be in statute measure: and it is curious that in this Hundred, where the hides are so large, the measurement should not be Gheld; but possibly much land was then permanently flooded and not measured, and therefore the hides would be smaller than we have concluded by comparison of the hidage with the modern acreage.

There is no need to multiply instances: in Staplehow Hundred, at Isleham (Gisleham) there is a pretty clear proof of a measurement in Gheld acres; and so also at March, 16 acres, which contain half a carucate of arable land, must be Gheld. The conclusion, then, seems to be that statute measurement was employed throughout the county, even for the Manors, except in the four Hundreds of Chilford, Radfield, Cheveley and Staplehow, where marsh and wood were prevalent, and the hides consequently extensive: and in the Isle of Ely for a like reason.

It has already been shown pretty fully, I hope, that the hides of Cambridgeshire were from 80 to 120 acres in area both in A.D. 1086 and A.D. 1279. The proof may be completed by reference to twenty-seven entries in our Domesday; where, by comparison of the land held by a Norman and specified in one sum, with the separate holdings of the Saxons to whose

rights he had succeeded, we can see either the number of virgates to a hide, or the number of acres to a hide. These entries are numbered (1) to (27) in the Table on the next page. The first 14 of them obviously accord with the hypothesis of the hide being 4 virgates. Those numbered (15), (16) and (17) are as evidently set down erroneously, whatever be the relation of the hide to the virgate. In (16) a hide seems to have been omitted in one of the Saxon amounts: and in (15) and (17) there are clearly clerical blunders. Perhaps (18) is an approximation; for $3\frac{1}{2}$ hides are only half a virgate in excess of 1 hide + $9\frac{1}{2}$ virgates. In Comberton the entry (19) is an approximation, but in the entry (20) 4 virgates seem to be too far off a hide-less-twenty-acres to be correct, and yet a virgate in several parishes round Comberton was equal to 20 acres, according to the Hundred Rolls, and in Comberton itself we learn from the same authority that a hide was 100 acres, *i. e.* five score. Therefore the Domesday entry appears curiously to prove itself right, there being some local custom of 5 instead of 4 virgates to the hide. Entry (21) is clearly another approximation. Thus there seems a large preponderance of proof that 4 virgates made a hide almost everywhere in Cambridgeshire, the exceptional case at Comberton being explained by the supposition that 5 virgates of some old Saxon standard were equal to a Norman hide, but had been each the fourth part of a Saxon hide. See Kemble, *Anglo-Saxons*, Vol. I. App. B. p. 493.

The entries (22) to (27) enable us to compare hides or virgates with acres. The hide clearly = 120 acres in (22) and again in (26) and (27); and in (23) it is 128 acres. In entry (24) the hide appears to be rather small, *viz.* 98 acres; if we suppose the acres on either side of the equation to be statute acres: but it has already been suggested that in Radfield Hundred the Norman Jury used Gheld measure, occasionally at any rate: and so, rewriting the entry into statute acres only, 46 statute acres = $\frac{1}{2}$ hide less 15 statute acres, or the hide is 122

TABLE ILLUSTRATING THE EXTENT OF A HIDE IN CAMBRIDGESHIRE.

	Vill.	Hundred.	Saxon holdings.	Norman holdings.
(1)	Horseheath.....	Chilford	$1\frac{1}{2}v + \frac{1}{2}v$	$\frac{1}{2}h$
(2)	Croydon	Erningford.....	$h + h + 5v$	$3h + v$
(3)	Litlington	"	$\frac{1}{2}h + \frac{1}{2}v$	$2\frac{1}{2}v$
(4)	Impington	North Stow	$(h + v) + (2h + v)$	$3\frac{1}{2}h$
(5)	Milton	"	$(6h + 3v) + (4h + 2\frac{1}{2}v) + 2\frac{1}{2}v$	$12h$
(6)	Landbeach	"	$(2h + 3v) + 2h + h + v$	$6h$
(7)	Over	Papworth	$\frac{1}{2}h + 3v + h$	$2h + v$
(8)	Swaffham.....	Staine	$3v + (h + v) + (h + v)$	$3h + v$
(9)	Trumpington	Triplow	$(h + 3v) + v$	$2h$
(10)	Hawkston	"	$3v + 3v$	$1\frac{1}{2}h$
(11)	Duxford	Whittlesford	$7v + 3\frac{1}{2}h + \frac{1}{2}h$	$5h + 3v$
(12)	Whitwell.....	Erningford.....	$5v + \frac{1}{2}h + v$	$2h$
(13)	Hochinton	North Stow	$(\frac{1}{2}h + 9a) + (h + 3v) + (1\frac{1}{2}h + 10a)$	$(3h + v + 10a) + (\frac{1}{2}h + 9a)$
(14)	Dry Drayton	Chesterton.....	$(2h - \frac{1}{2}v) + 1\frac{1}{2}h + (h + \frac{1}{2}v) + (h + v)$	$5h + 3v$
(15)	Meldreth	Erningford.....	$2\frac{1}{2}h + (2h + \frac{1}{2}v) + \frac{2}{3}v$	$5h + 1\frac{3}{4}v$
(16)	Eversden	Stow	$(h + 3v) + 3v + h + (1\frac{1}{2}h + 10a)$	$6h + 10a$
(17)	Barrington	Wetherley.....	$(4h + 1\frac{1}{2}v) + (2h + \frac{1}{2}v) + h + 3v + \frac{1}{2}v$	$7h + 2\frac{1}{2}v$
(18)	Morden	Erningford.....	$(h + 3v) + 3v + 3v + \frac{1}{2}v$	$3\frac{1}{2}h$
(19)	Comberton	Wetherley	$(h + v) + 3v$	$2h + 2a$
(20)	"	"	$v + 1\frac{1}{2}v + 1\frac{1}{2}v$	$h - 20a$
(21)	Waterbeach	North Stow	$(3v + 12a) + 3v$	$1\frac{1}{2}h + 10a$
(22)	Shelford	Triplow	$(2\frac{1}{2}h + 9a) + (1\frac{1}{2}h + 6a) + \frac{1}{2}h + \frac{1}{2}h + (v + 7a) + 3\frac{1}{2}v$	$6h + v + 7a$
(23)	Kingston.....	Stow	$(2h + 1\frac{1}{2}v) + v + 3v + v + 2h$	$5\frac{1}{2}h + 16a$
(24)	Carleton	Radfield.....	$38a + 8a$	$\frac{1}{2}h - 3a$
(25)	Hochinton	North Stow	15a in Domesday replaced by 1 <i>virg.</i> in <i>Inq. Eliens.</i>	
(26)	Hatley.....	Stow	The total holding is one hide, of which the Lord has $3v + 10a$ in demesne and 3 bordars have $20a$.	
(27)	Hillrow	Ely	The total holding is two hides, of which there is in demesne $h + v + 10a$ and the villeins have $80a$.	

statute acres. Entry (25) is in itself inconclusive, but I mention it because the *Inquisitio Eliensis* gives the same holding as "1 virgate:" a mistake of the scribe, fortunately most easy to correct, for we not only have in Hockington 15 acres with 1 bovat in Domesday itself; or by consequence a hide of 120 acres; but the valuable Record of 18 *Edw. I.*, quoted above on p. 10, shows that the inference of the hide being 120 acres there is a certain fact. This instance may serve as an useful hint to take the Domesday figures in preference to those of the *Inquisitio Eliensis*, when there is a discrepancy. The *Inquisitio*, I believe by comparison with the Domesday to be wrong in 14 discordant entries; the Domesday being in all of them consistent with itself, and the *Inquisitio* frequently not.

IV. *On Bovates.*

We never find bovates mentioned in Domesday except in reference to the purely arable land, whereas virgate is a subdivision of the hide in any of its senses. On all hands it is admitted that a bovat was the eighth part of a carucate in the Conqueror's time: though in later times teams were not so universally made up with eight oxen, and we have bovates of very varying sizes in the year 1641, as witness Best's *Farming Book*, p. 166, &c. So also, as Ellis states in his Introduction, a bovat at Doncaster was only 8 acres—presumably therefore had at least ten oxen to the team; though as a rule 16 or 17 acres was the amount of a bovat in Yorkshire, with the carucate therefore considerably over 120 acres; as is proved by a Record, *Trin. 26 Edw. I. Ebor. de Banco.*

There is, perhaps, one isolated indication in the Cambridge-shire Domesday of teams of more than eight oxen in the Conqueror's time, viz. in Barrington, Wetherley Hundred, where we find mention of 40 acres with 6 bovates arable, and 20 acres with 3 bovates arable. I should take this to mean 40 acres in

cultivation, six oxen doing the work. According to the Hundred Rolls the virgate at Barrington was 40 acres; which indicates that they measured not by hides, of land actually under plough, but by carucates, made up as to one half of land under the plough, and as to the other of arable land lying in fallow. The Domesday mentions meadow attached to both the holdings above named; and this too is confirmed by the Hundred Rolls, where a so-called half-virgate, which should be 20 acres, is found to have 22 acres + 5 rods, the 2 acres possibly being the meadow, and the 5 rods the homestead and croft.

V. *On Hidation.*

The Hidation of the Domesday Book, as already mentioned, is that of Ethelred's reign, and doubtless represented, when it was made, the intrinsic value of the majority of English Manors. By testing the few instances in Cambridgeshire where the hidage and the carucage are alike in Domesday, we are led to suppose that a normal hide, i.e. one having *terra ad unam carucam* exactly, neither more nor less, and furnished with proper adjuncts of pasture, &c., was valued at £1 revenue. Munford in his *Domesday of Norfolk*, gives a list of the acreage and value of the glebe lands in that county, as stated in Domesday, and it is remarkable how often the estimate is exactly one penny per acre, or £1 per hide of 240 acres. Eyton, on p. 46 of his *Domesday of Somerset*, twice quotes purely arable land as worth two pence per acre, and once as worth 2½d. Pasture he puts at ⅔d. per acre.

But some Manors would be assessed from the very first beyond their acreage, because of being advantageously placed for commerce, or because they were the seats of the lucrative Hundred Courts, or exempt from Hundred jurisdiction and having Courts of their own, or for other reasons.

Some Manors, again, would be rated below their value, through favour of the King and Witan. Hence, the original valuation seems to have had for its characteristics:

- (1) Normal Hidation at the rate of £1 per hide:
- (2) Onerous Hidation for Manors having special advantages:
- (3) Advantageous Hidation for favoured Manors.

Advantageous hidation appears to have grown more prevalent as time went on; so that eventually large quantities of land were exempted from Danegeld. The rectifying of this abuse, as well as the increased rateable value of much land through improvement in cultivation, were pretty surely among the reasons which led the Conqueror to order a new survey. Webb gives some remarkable extracts from the Exeter MS. showing the extent of Advantageous Hidation, and the frequency of total exemption¹. In the *Inquisitio Eliensis* we find

¹ These are as follows:

"*Dorset*. In Etheminstre Hundred are 47 hides and the Bp. of Sarum has land enough for 6 teams. Thereof the Barons have in demesne 6 hides, 1 virgate, and 6 carucates, that is the six carucates of the Bp. of Sarum, 3 hides and 1 virgate of Roger Arundel, and 3 hides of Bristuin. The King has £12, less 18 pence, from 40 hides, less a virgate. And the King never had anything from the half hide which Urso de Arnulfo holds: and *this year* the King has no gheld from the half hide which Dedeman holds of the Earl of Montaigne." Hence we have an old exemption, and a newly-created one.

"*Somerset*. In Cumgresberie Hundred are 19 hides. The King has therefrom 13s. 6d. for 2 hides and a virgate. The King and the Barons have in their own demesne 5 hides and 1 virgate. Of this the King has 3½ hides in demesne; and Ordric 3 virgates, and Ordulf half a hide, and Alward half a hide; and the King has no gheld for 11 hides which the villains of the King in Cumgresberie hold: and for half a hide, which the villains of the Church of Cumgresberie hold, the King has no gheld." Hence, says Webb, the King had no gheld for large proportions of many hundreds, of which are abundant instances in the S.W. Counties, as 50 taxable out of 113, 50 out of 104, 9½ out of 25, 13 out of 34½, 14½ out of 52, 8 out of 44. See Exon. MS. p. 4 a.

abundant instances of the same kind, some of which are also noted in the Cambridgeshire Domesday. We have, for example, Wood Ditton with 16 carucates of plough-land, assessed at 10 hides T. R. E., and one hide T. R. W.: Ashley with 4 carucates, Silverley with 8, assessed respectively at $3\frac{1}{2}$ and $6\frac{1}{2}$ hides T. R. E., and 2 and 4, T. R. W.: and these are but a few specimens out of many.

Hence we see, first, why the hides in demesne are so carefully separated in Domesday from the others, viz. because they were exempt from Danegeld (as the Charter of Henry I. also states), the tenants serving personally in case of war: secondly, what is the significance of the phrase "se defendit," viz. that a manor was hidated abnormally, generally on Advantageous Hidation, but sometimes on Onerous. Where a Manor is marked *M* in the Record, which is the case when it is the Capital Manor of several included in a vill, this abnormal hidation is sometimes implied without being expressed; as also it is occasionally in respect of smaller holdings carved by sub-infeudation out of such a manor, and feoffed to sub-tenants on equally favourable terms.

VI. *On the Domesday Valuation (Valet) of Manors and Holdings.*

It has been suggested by Archdeacon Hale that the *valet*, with which each Domesday entry concludes, is merely the render of those tenants who did no service personally on the Lord's lands. This view is received by Nasse with a certain degree of approval; both these great authorities laying stress on the consideration, that if the Domesday Book contains an exhaustive list of all the tenants, free as well as serf, it is most difficult to account for the enormous increase of free tenants observable in the Hundred Rolls of 17 *Edw. I.* But, whatever be this difficulty, nothing could be more explicit than the

Conqueror's instructions as to the subjects of inquiry and inrotulation, preserved at the commencement of the *Inquisitio Eliensis*. An account of the free-tenants, as well as of the soke-men, is demanded, and a return as to each manor "quantum valebat totum simul¹."

With regard to the valuation in the Conqueror's time, we may observe that it is expressed in Domesday by three phrases, "valet," "in totum valet," "in totis valentiis valet;" and that the last expression occurs only when there are some hides in demesne, not when all are portioned out to tenants; which, to me, appears to indicate in the most pointed manner that the estimate includes the value both of the demesne land and of the tenant's land, and not of the one without the other: *i. e.* that *valet* denotes the income reasonably to be expected from the land, whether in hand or sub-let. If a tenant merely paid a money rent, there seems no reason for his being personally entered on the record, though his render must have been included in the *valet*; but if he performed services only, or gave services as well as money, he needed to be enumerated, as he himself was one of the elements of value to the manor, just as much as the working teams were. The great objection, however, to Archdeacon Hale's theory of the *valet* is the arithmetical difficulty which it introduces: for, supposing it to be accepted, we ought to be able to arrive at a fair average value for the hide, if we deduct from the total number of hides in a manor those hides which are in demesne, and divide the remainder into the *valet* set down: for the *valet* being, on his hypothesis, the worth

¹ The topics of inquiry are these:

Quomodo vocatur mansio; quis tenuit eam tempore Regis Edwardi, quis modo tenet; quot hidæ, quot carucatæ in dominio, quot hominum; quot villani, quot cotarii, quot servi, *quot liberi homines, quot sochemanni*; quantum silvæ, quantum prati, quot pascuorum, quot molendina, quot piscine; quantum est additum aut oblatum; *quantum valebat totum simul, et quantum* modo; quantum ibi quisque liber homo vel sochemannus habuit vel habet.

of the free-tenants' hides only, by the subtraction we shall arrive at their number, and by the division at their value. But try this, say, on the first four Hundreds taken alphabetically, i. e. Chesterton, Cheveley, Chilford and Erningford, and we get values ranging from £20 per hide in Wickham, £7 to £9 in Litlington, Silverley, Kirtling, Linton, through all gradations, to 23s. in Histon, and 24s. in Cottenham.

The better plan seems to be to form some hypothesis by comparison of a good number of entries, and then test it by seeing whether it accords with other entries not employed in this original calculation. From the careful mention of carucates (I use this word for convenience frequently, as equivalent to *terræ ad carucam*), I think the Conqueror and his Commissioners had already an idea of taking these as the basis of a new system of taxation, because representing much more closely than the hides the taxable value of the manors: but other modifying considerations, no doubt, were within their view.

I should therefore suggest these rules, which I find apply almost always satisfactorily to the entries in Cambridge-shire:

I. The valuation is rather on the carucates, or land under plough, than on the hides: and this explains why, after A.D. 1163 or A.D. 1194, hidage taxation was abandoned, and taxation levied on the carucate¹.

¹ "In 1163 the ancient Danegeld disappears from the Exchequer Rolls...Under Richard the same tax reappears under the name of Carucage: the normal tax being laid on the Carucate instead of the Hide, and each carucate containing a fixed extent of one hundred acres." Stubbs, *Const. Hist.* Vol. I. p. 582. The last statement of Stubbs comes from Hoveden, iv. 47, and he, no doubt, intends six score by his "hundred." Thus "carucate" in Richard's time was, as already said, not the same as Fleta's carucate.

"The Scutage affects the tenants in chivalry: the donum, hidage or carucage all holders of land." Stubbs, *ibid.*

II. The value of a carucate, duly furnished with adjuncts of meadow, pasture and working cattle, *i. e.* a normal hide, in a manor where hides and carucates are equal in number, is 20s.

III. When the carucates of a manor are in excess of the hides, the valuation rises, though not, as a rule, to the extent of 20s. for each extra carucate.

IV. Ploughland without teams is of little value: but teams in excess of the ploughland are estimated; for their existence proves that they had some employment other than agricultural.

V. An excess of slaves is generally a cause of considerable increase.

VI. An excess of serfs, whether *villani*, *bordarii* or *cotarii*, is also a cause of increase, but not to the same extent as an excess of slaves; the reason clearly being that a slave could be employed as his owner pleased, whereas a serf was only bound to render *certain* services, and *on the manorial land*.

VII. The value of mills¹ is always stated, and must be deducted from the total *valet* of a manor, before applying the foregoing rules.

VIII. The manor in which the Hundred Court is held is always rated more highly on that account; and sometimes the Hundred Court appertains not to one, but to two or more manors adjacent one to the other.

IX. The manors included in the great Baronies are often exempt from Hundred jurisdiction and have courts of their own, which adds to their value to the Lord.

X. Wood adds to the value of a manor; and *silva unius porci* seems to be worth about two pence. This peculiar mode

¹ Mills in Domesday are, of course, water-mills. Wind-mills were unknown till the Crusaders borrowed the idea of them from the Saracens.

of calculating woodland, *i.e. tot porcorum*, is rarely found except in Cambridgeshire and Bedfordshire, wood being in other counties usually reckoned in length and breadth, by leagues, quarentines and linear acres. Some authorities consider it to have been almost valueless; but if so, it is difficult to account for its being so carefully mentioned. We may roughly arrive at the enlargement in the hide caused by the presence of woodland, thus: if a normal hide in the Hundreds of Radfield, Chilford or Cheveley be taken at 240 acres, the excess caused by the presence of wood in these Hundreds is 8784, 7408 and 5945 acres respectively, and we find this wood described in Radfield as 1050 hog-walks, in Chilford, 857, and in Cheveley, 614; whence we deduce that *silva unius porci* is $8\frac{1}{2}$, 9 or 10 acres. Roughly, therefore, wood to the extent of one hog-walk augments the hide by 9 or 10 acres; say 10, so that a hide with pannage for one hog would be 250 acres, with pannage for 10, would be 340, and so on: and this, supposing as we must that the hide still remained worth £1, would accord with Eyton's estimate (obtained in quite another way), that woodland was worth about $\frac{1}{6}$ of a penny per acre, or that six acres of wood were worth one acre of average land, or half an acre of ploughland. The mention of *silva porcorum* in Cambridgeshire is confined to the three Hundreds just named, with the exception of two or three entries in Stow Hundred, the same number in the Isle of Ely, and one in Erningford Hundred. Elsewhere we have mention of *silva ad sepes reficiendas*, or *ad sepes claudendas*; not so often *ad sepes et domos* (haybote and housebote), once only *ad domos curiæ*, and once *ad sepes et focum*. All these expressions imply a smaller area of wood, and possibly of wood not mast-bearing, *i.e.* not oak or beech.

VII. *On the Population of the County.*

The cultivators are found to be as follows¹:

Hundred.	Villains.	Bordars.	Cottars.	Serfs, total.	Slaves.	Free tenants. counted. named.
Chesterton	98	63	63	224	11	1 + 6
Cheveley	79	45	—	124	23	4
Chilford	163	84	—	247	52	10 + 12
Erningford	116	221	94	431	41	15 + 18
Flendish	80	81	4	165	24	26 + 2
North Stow	106	118	127	351	20	6 + 10
Papworth	99	94	55	248	37	42 + 8
Radfield	121	97	—	218	38	9 + 6
Staine	85	43	—	128	39	3 + 5
Staplehow	205	131	—	336	68	18 + 7
Stow	128	106	90	324	39	25 + 6
Triplow	161	80	24	265	30	13 + 6
Wetherley	111	169	117	397	26	16 + 13
Whittlesford	99	72	—	171	18	1 + 8
				1651	1404	574
				3629	466	185 + 111 = 296

¹ To these totals must be added for the Isle, 277 vill. 17 bord. 171 cott. 95 slaves, 63 free tenants.

My totals differ somewhat from those of Ellis and Turner:

	Tenants in Capite.	Freemen in the County.	Freemen (Burgenses) in Cambridge.	Villains.	Bordars.	Cottars.	Slaves.
Ellis	45	511	29	1907	1423	739	
Turner	42	373	295	1898	1436	742	563
Walker		359	{ 297 taxable 33 untaxed	1928	1421	745	561

The 511 freemen of Ellis include those whom he designates, "under-tenants, francigenæ, homines, milites, milites Francigenæ, piscatores, presbyteri, sochemanni:" the 373 of Turner are classified by him as, "tenentes, sochemanni, piscatores, *moldarii*, *silvatici*, *porcarii*," though of the said *moldarii*, *silvatici* and *porcarii* I can find no mention in Domesday.

I omit the tenants in capite, for it is impossible to decide which of them were resident: and in the "freemen" I include in each Hundred, with those merely *counted*, those also who are *named* as sub-tenants for the *first* time, omitting those who have obviously been mentioned in a preceding Hundred or Manor.

Hence, as the number of hides is $1102\frac{1}{4}$, there are to each hide about $3\frac{1}{3}$ serfs and $\frac{2}{3}$ of a slave, or not quite 4 cultivators, excluding the freemen; with the freemen as nearly 4 as possible. To enter into the differences between Villains, Bordars and Cottars is not part of my present purpose; but it seems clear that whatever was the distinction between Villains and the other two classes of serfs, there can have been little between Bordars and Cottars; for entries specifying the one in Domesday are often replaced by entries of the same number of the other class in the *Inquisitio*; and the absence of Cottars from six of the Hundreds above catalogued can scarcely be explained, except by supposing that the Jurors drew no distinction between them and Bordars.

VIII. *On the Minor Incidents of Value.*

Meadow, *pratum*, denotes sometimes grass-land permanently enclosed, sometimes land only enclosed in the spring-time till hay-harvest, and during the rest of the year common. It seems to have been scarce and valuable, and sometimes is measured in acres, but more often is described as enough for a specified number of teams, or as *pratum carucis*, "sufficient for the existing teams." We have only two instances in the Cambridgeshire Domesday where a larger number of *acres* of meadow than 4 is mentioned, viz. 5 acres in Cottenham and 12 in Balsham. Hence, it is possible that 5 or 6 acres was the meadow "for a team;" and that it could not be much more is highly probable by comparing, where identity is clear, the Domesday mention of carucates of meadow with the acres of the Hundred Rolls¹.

¹ Eyton, to prove that meadow was scanty and valuable, has shown that in Dorset only about 600 acres can be found in Domesday out of 126,000

Pastura is grass-land never enclosed: and is described as *ad pecuniam villæ* when the cattle of the Lord and of his tenants fed on it together, and *ad suam pecuniam* when reserved for the Lord's cattle only. *Ad pecuniam* is ambiguous, but probably means the same as *ad suam pecuniam*.

Mills were valuable, because the tenants of the Manor, and sometimes those of adjacent manors, were under obligation to grind there: hence even the *molendinum confractum* at Duxford, or the *molendinum nihil reddens* at Lolsworth, was worth enumerating as a contingent source of revenue. The millers, serfs no doubt, were often required to feed a certain number of swine for the Lord, besides paying him rent; as at Fordham and Shelford.

Fisheries were numerous and valuable, as we should expect; and their revenue was usually in eels; though sometimes there was a money rent as well, or a money rent only. Generally the entry is, so much *de piscariis*; but now and then *de gurgite*, i.e. "from the stream;" once *de dim. gorch*, or "from half the profits of the weir:" *de theloneo retis*, "from toll of the net" in Swaffham. *Sagenæ*, or seine-nets, are paid for in Soham and Snailwell: and at Soham too there is as a source of revenue, *una navis quæ piscatur in mara per consuetudinem*.

We have frequent mention of renders in kind: *soci*, plough-shares, together with 400 eels, as the render for a marsh in Bottisham: *soci* for a right of wharfage, *de portu*, in Aldreth or Hillrow; for pasture in Cherry Hinton and Great Abington. Eels also are the render for pasture in Soham, and for meadow in Isleham, and, of course, frequently for a marsh. A sextary of honey was a Saxon render in Histon.

Although leases for years (or life?) were not yet very com-

acres of Royal Demesne; and that in the Hundred of Cogdean there were only 479 acres of meadow in an aggregate of 29,000.

In Leicestershire, as Nichols shows in his tables, there were 4791½ acres of meadow, the County containing 514,164 acres.

mon, we have instances of them, *i. e.* grants *ad firmam* in Litlington, Fulbourn and Wood Ditton. The herbage was let for a money rent at the same Wood Ditton, at Camps and at Croxton; also a portion of the meadow at Shingay. The sedge, *juncii*, brought in 16^d a year at Wilberton, the marsh and the carts were both put out at hire in Cherry Hinton. Some of the incidents first named appear to be the beginning of the claim of the Lord to use for his own profit superfluous common; which ultimately was made a legal right by the Statutes for assarting passed in A.D. 1236 and 1285.

Amongst miscellaneous entries we may note a warren, *wara*, in Hinxton; *iii arpendi vineæ*¹ at Ely; a deer-park, *parcus bestiarum silvaticarum* at Burch in Radfield Hundred, and another at Kirtling; churches, *i. e.* I suppose, advowsons, at Teversham, Meldreth and Shelford; and gardens at Cottenham, Clopton, &c.; whilst cottars are frequently described as *cotarii de ortis suis*.

The pecuniary renders are almost invariably set down in pounds, shillings and pence, but we have three or four mentions of *ores*², and one of an ounce of gold, in Weston, Radfield Hundred. And with these anomalous coins, or estimations, may be mentioned an anomaly of measurement in the "half hide of meadow" at Stetchworth in Radfield Hundred; as much a solecism as the hide of pasture noted by Eyton in the survey of Corseham in Dorset, or the "8 hides of pasture and a half hide of wood" in the account of the Devonshire lands of the Church of St Mary at Rouen.

With regard to the mention here and there of *libræ arsæ et pensatæ* and *libræ ad numerum*, we have Madox' statement, that

¹ Du Cange says *arpenna* or *arpendus* is a plot 170 feet \times 120 feet, *i. e.* nearly half an acre.

² It seems certain that *oræ* or *ores* were not actual coins, but ounces, *i. e.* the twelfth part of a pound, worth therefore twenty pence each. A shilling also was not a coin, but twelve pence; a silver penny being a coin about as large, though only half as heavy, as a modern sixpenny piece.

when rent was to be paid in "pounds *burnt and weighed*," the coins tendered were melted at the Exchequer, or 6*d.* or 1*s.* additional exacted per £, to compensate for the alloy and the waste by wear and tear. He also says that *libræ ad numerum*, *libræ albæ*, *libræ de denariis albis vel candidis* are equivalent, and denote the current coin of the realm.

In the lists which accompany this paper I have added to the Domesday accounts the numbers of the cattle, not being in team, given in the *Inquisitio Eliensis*. These are usually stated for the lands of the Abbot of Ely only, but occasionally for lands held by others, and "invaded" by them to the hurt of the abbey. As to these it is only needful to say that *animalia otiosa*, (*a . o.*) denotes unworked or unbroken oxen, or breeding cows; *runcini* are saddle-horses, *equæ silvaticæ*, brood-mares. The references to paging are according to the arrangement of the photozincographed copy of the Domesday of Cambridgeshire, published at the Ordnance Survey Office, Southampton, in 1862, under the direction of Colonel Sir H. James, R.E., F.R.S., &c.

X. ON THE MINSTER-CHURCH AT AACHEN. Communicated by R. C. READE, Esq., M.A., King's College.

[March 13, 1882.]

IT had been my hope and wish on this the first (as it is likely to be the last) occasion that I have the opportunity of submitting a communication to the Cambridge Antiquarian Society, to present a complete monograph of the important building which forms the subject of this paper. This hope, I regret to say, has been frustrated. During a few weeks that I spent last summer at Aachen I had begun to collect materials and to take measurements with this object, when my work was interrupted by the septennial exhibition of relics; and before it could be resumed I was unexpectedly summoned home. As I see no immediate prospect of continuing my work on the spot, I have thought it best to lay before the Cambridge Antiquarian Society the few results I have been enabled to obtain.

The Minster-Church at Aachen is a building so unique in character, so rich in historical interest, and so valuable as an architectural landmark, that it is a matter for surprise that it has never been made the subject of a comprehensive work. In the various books I have consulted I have nowhere found such a thorough and workmanlike description of the original building as I had a right to expect; though in respect to

its later or subsidiary parts information abounds. My best authority has been an old work lent me by Dr Sträter, of Aachen, entitled, "Aacher Chronick ; das ist, eine kurze historische Beschreibung aller gedenckwürdigen Antiquitäten und Geschichten sampt zugefügten Privilegien und Statuten dess königlichen Stuls und h. römischen Reichstatt Aach." The writer was one Joannes Noppius, "SS. LL. Doctor et Advocatus," and the date of publication 1643 (though the dedication is dated eleven years earlier), and the history is carried down to the writer's own time. The work of Noppius was not original, but a translation, with omissions and additions, from the Latin work of Petrus à Berck, "Canon of this royal basilica¹ of the B. V. M. and provost of St. Adalbert's," which had appeared a few years before. The value of this work is much enhanced by the fact that it was written thirteen years before the destructive fire of 1656, in which a large portion of the town and much of the cathedral were destroyed². The copper-plate engraving, which I have had reproduced (see plate which follows p. 136), is of especial interest as establishing certain facts concerning the building.

In the notes I am now about to read I propose to follow the arrangement of Noppius's Chronicles, with such omissions and additions as are necessary.

Aachen, or Aach, as the name is written by Noppius, was called in Latin Aquisgranum, "from the warm springs (*aquæ*)" and from the Roman prince Granus, who was a brother or

¹ Though here, and by some modern writers, described as a Basilica, the church at Aachen possesses nothing of Basilican type.

² Though sometimes called a cathedral, the Minster-Church of Aachen does not rightly bear the name. There never was a Bishop of Aachen except during the French occupation. The Church was a Royal Chapel, like St George's, Windsor.

"very near relation of Nero and Agrippina. He began to "build the town about A.D. 70. He also built a castle and "palace called Vegerra, or Veterra." I need not waste time in disposing of this Roman prince, but may state that the local antiquaries attribute the name to the patron deity Apollo Granius. I am ignorant of the import of this title.

The old palace, and apparently the town, was destroyed by the Huns under Attila, about 500, one tower alone remaining. "It remained in ruins until rebuilt by Charles the Great about "the year 777." This palace or Pfalz stood on the site of the present Rathhaus, erected in the 14th century, and was connected with the Minster-Church, or Pfalz-Kapelle, by a vaulted arcade, which joined the Church (as would appear) at the western extremity of St. Nicholas' Chapel, continuing through the so-called "Dormitorium" of King Philip of Swabia. (See Plan, which follows p. 152.)

Charles the Great kept Christmas at Aachen as early as 768¹. It is said that as he was riding through the ruined town his horse's hoof struck open a spring of the medicinal water which there abounds, and that this circumstance induced him eventually to fix his residence there. In the earlier part of his reign he had usually held his court in his Rhenish castles of Ingelheim, Mainz, Frankfurt, &c. After the death of his beloved Fastrada (his third wife) A.D. 787, Aachen became the capital of the Frankish monarch. "There," says Eginhard, "about the year 796 he built the Minster with very great "splendour, and adorned it with gold and silver, and with "windows², also with railings and doors of cast brass. For this "building he also had brought from Rome and Ravenna marble "blocks, which were to be had nowhere else³. He also pro-

¹ *Annales Francorum*.

² Perhaps *glazed* windows are meant.

³ For this he had obtained a special license from Pope Hadrian. Miræus, *Op. Diplom.* I. 643.

“vided priestly garments in such quantity that not even the “doorkeepers performed their duties in their ordinary dress.”

This great work (for such it was in such an age and country) was completed in the short space of eight years. The name of the architect employed by Charles is not certainly known. Some have attributed it to Eginhard himself; but besides the fact that he makes no mention of possessing so honourable a title to fame, this fancy is sufficiently disproved by the fact that he was a youth of but twenty years at the time of its commencement. At a later period it is true that he was appointed Overseer to the Royal Buildings at Aachen. The evidence seems on the whole to point to Ansigis, Abbat of Fontenelle, near Rouen, as the designer of the Church.

In its main features the work has remained unaltered from the day of its consecration by Pope Leo III. in the year 804, to this present time. The simple and dignified Romanesque octagon, with its bold dome of fifty feet span; the bronze entrance-gates and quaint bronze railings to the triforium; the very throne of white marble upon which the great emperor sat, all remain little affected by the eleven centuries which have passed over them. The subsequent additions have not much disturbed the harmony of the original. One great loss however there has been. The whole of the interior was covered with rich mosaics, of which not a particle now remains, although in the middle of the 17th century they would appear to have been complete. Of these I shall speak more particularly when I come to the description of the Interior; merely pausing to note the fact of their original existence in order to show how serious a calamity their loss must have been.

The following particulars of the life and death of Saint Charles the Great, as he is usually called by Noppius, bear upon his work at Aachen.

He was born on January 28, 742, about the time, says Noppius, that his grandfather Charles Martel died. But an

old couplet, quoted by Noppius himself, speaks not of his grandfather, but of his father Pepin le Bref, running as it does,

“Pipinus moritur cum surgit Carolus acer,
“Natus in Ingelheim, cui Bertha fuit Ungara mater.”

“About the year 777,” says Noppius, “Carolus Magnus in the “ninth or tenth year of his reign began to rebuild the old “Palace in the form which is still to be seen in the middle of “the town¹.” His palace, like so much else, perished in the conflagration of 1656. “In the eight years from 796 to 804 “he built the Minster. About this time he also subdued the “Saxons, and gave them a law, that any of them who should “henceforth dispute about the Faith should be hanged upon “the nearest tree, in order to prevent their falling back into “their heathenish errors and idolatry; and for more security “he had about 10,000 men and women of them slaughtered, “and their children transferred to this neighbourhood².” The activity of the man, who during these eight years, besides the administration of his vast dominions, could complete a great architectural work, conquer and legislate for a fierce and powerful nation, and visit Rome to be crowned Emperor of the West, is extraordinary. At a later date he conquered Hungary, and recovered all the treasures taken from Aachen by Attila some centuries before³.

The Minster-Church was consecrated A.D. 804, by Pope Leo III., in the presence of a great crowd of bishops and princes. As the legendary history of an ancient work is scarcely less interesting than its actual history, I need not apologise for narrating the following tradition. Charles had

¹ I was unable to identify this building in the engraving given by Noppius.

² The tone of evident approval with which Noppius, a lawyer and writer of the seventeenth century, relates these sanguinary proceedings, is worthy of note.

³ Eginhard.

greatly desired to have a hundred bishops present at the consecration festival. From far and wide they were gathered together, but with all his pains there were but ninety-eight. In order that the pious head of the Christian world might not be disappointed, two dead bishops of Lüttich (Liège) arose from their graves and joined in the episcopal procession¹.

The death of Charles occurred on January 28, 814, at the age of 72, after he had been King of the Franks for 47 years, and Roman Emperor 13 years. Both his birth and death were marked by prodigies; the former by the appearance of a bright star, the latter by the falling of the Forecourt of the Church (*Vorgebau des Tempels*) and of the gilded finial surmounting the dome.

"The body of S. Charles the Great (says Noppius) after "being embalmed was placed in the tomb seated on a golden "throne, namely at the place in our Lady's Minster under the "crown², which is still marked off with white marble. On his "side was bound a golden sword, and a book of the Gospels "placed in his hand, and the crown set on his head. He was "also clad in the imperial robes with sceptre and shield, with "relics and holy things, especially of our Lady, which during "his life he had held in great honour and had been used to "hang round his neck when fighting his foes; so after his death "they would not deprive him of his relics."

There his body remained for 352 years. Otto III. is said to have entered the tomb (May, 1000), and to have discovered the body seated in state as above described. He took away the Imperial crown, cloak, sceptre, and orb (*Reichs Apfel*) "and sent them to Nuremberg, in order perhaps that "they might be in safe keeping for a time; and there they "still are, and are used for the coronation."

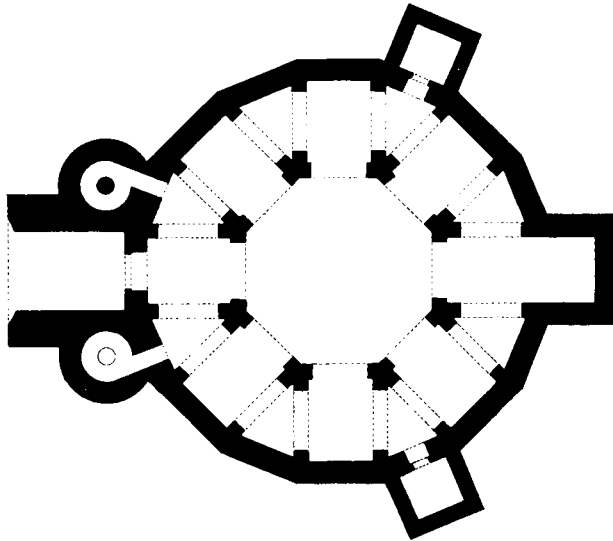
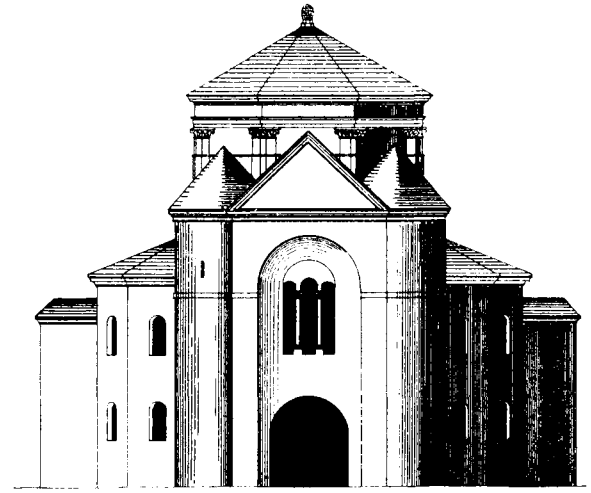
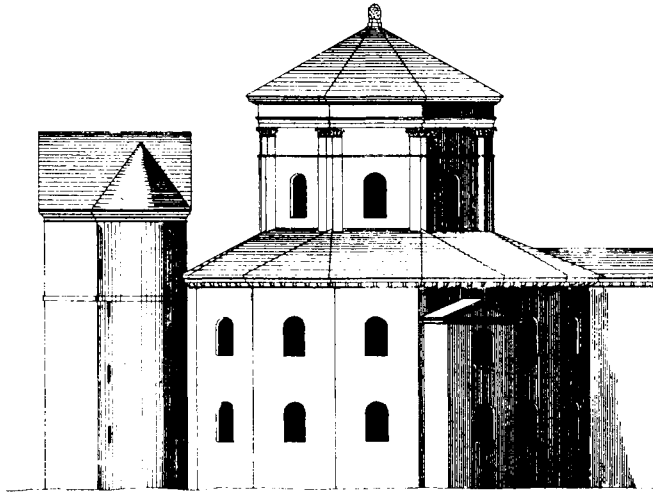
The whole of this legend, excepting the bare fact of the

¹ Aachen was in the diocese of Liège.

² The great corona given by Frederic Barbarossa. See below, p. 152.



The Minster-Church at Aachen, and Exhibition of Relics,
Circa 1630.



RESTORATION OF THE MINSTER CHURCH AT AACHEN

ACCORDING TO THE ORIGINAL DESIGN,

BY HERR BAUMEISTER RHOEN, AACHEN.

Scale of feet

opening of the tomb by Otto III., must be pronounced untrustworthy. It has been reproduced again and again in literature and art, but the evidence against it is conclusive¹. In support of this view I will merely adduce the following evidence.

1. Sumptuous funerals were not customary in the 8th and 9th centuries.

2. Eginhard, the protégé and secretary of Charlemagne (b. 770, d. 844) makes no mention of any particular ceremonial at the funeral.

3. Eginhard states positively that he was buried on the day of his death, which would not have allowed for any considerable preparation or pomp². The whole passage is interesting, and I shall take leave to quote it. Towards the end of his life, says Eginhard³, he summoned his son Louis, King of Aquitaine, and had him crowned joint emperor. In the meantime according to his usual custom, he went to hunt not far from Aachen, returning thither about November 1st, "Cumque
"ibi hyemaret, mense Januario, febre valida correptus, decubuit.
"Qui statim, ut in febribus solebat, cibi sibi abstinentiam in-
"dixit, arbitratus hac continentia morbum posse depelli, vel
"certe mitigari; sed accedente ad febrem lateris dolore, quem
"Græci pleurisin dicunt, illoque adhuc inedia retinente, neque
"corpus aliter quam rarissimo potu sustentante, septimo post-
"quam decubuit die, sacra communione percepta, decessit, anno
"ætatis suæ septuagesimo secundo, et ex quo regnare cœperat,
"quadragesimo septimo, v Kalendas Februarias, hora diei
"tertia. XXXI. Corpus more sollempni lotum et curatum, et
"maximo totius populi luctu ecclesiæ inlatum atque humatum
"est. Dubitatum est primo, ubi reponi deberet, eo quod ipse
"vividus de hoc nihil præcepisset: tandem omnium animis sedit,

¹ Professor Bryce (*Holy Roman Empire*, p. 163, ed. 1866) treats the story as an unquestioned fact.

² Still less for the necessary embalming of the body.

³ Ed. A. Teulet (J. Renouard, Paris, 1841), vol. i. p. 94, chap. xxx.

“nusquam eum honestius tumulari posse, quam in ea basilica,
 “quam ipse propter amorem Dei et domini nostri Jesu Christi
 “et ob honorem sanctæ et æternæ Virginis, genetricis ejus,
 “proprio sumptu construxit. In hac sepultus est, eadem die
 “qua defunctus est, arcusque supra tumulum deauratus cum
 “imagine et titulo exstructus. Titulus ille hoc modo descriptus
 “est

“‘Sub hoc conditorio situm est corpus Karoli
 “‘Magni atque Orthodoxi Imperatoris qui Regnum
 “‘Francorum nobiliter ampliavit et per annos
 “‘XLVII feliciter rexit. Decessit septuagenarius
 “‘anno domini DCCC^o XIII^o. Inditione VII. V Kal.
 “‘Febr.¹”

The fact that his protégé and cotemporary, who was probably present at his master's death, confines his account of the Emperor's interment to the words ‘In hac sepultus est’ appears to my mind conclusive against the later tradition, which describes the exceptional pomp supposed to have been then observed.

Stripped of its principal ornaments (so runs the tradition) by Otto III., the body of Charles remained in its original tomb until 1166. In that year Frederic I. (Barbarossa) kept Christmas at Aachen, and on December 29th exhumed the bones of his great predecessor “with general triumph and rejoicing of “all spiritual and worldly folk.” At the request of Frederic, supported by the Archbishop of Cologne, the Bishop of Liège, and all the Clergy, Pope Paschal conceded his claims to canonization; after which “his bones with those of the noble Roman “martyr S. Leopardus were placed in a golden ark.” In that ark they still remain, being among the few relics existent whose authenticity can scarcely be disputed². Tradition, how-

¹ A tax was introduced under the Roman empire upon property, which was re-assessed (*indictum*) every fifteen years. Hence *indictio* = the assessment of this tax, came to mean a space of time = 15 years.

² See Appendix A.

ever¹, asserts that the bones were laid in a marble sarcophagus of great beauty, still preserved in the Minster, carved with the Rape of Proserpine, in high relief². If this were so, they must have been again removed, and separated from the bones of S. Leopardus some centuries back, as the grave of the latter was only discovered some five-and-twenty years ago³.

The important question still remains, Where was the Emperor's body laid? Noppius (as we have seen) says that the tomb was "under the crown," or in the centre of the Octagon. During the French occupation a slab inscribed "Carolo Magno" was laid over this spot. The local antiquaries however are agreed that wherever the original grave may have been, it certainly was not here⁴. Bock⁵ thinks that the recently discovered foundations at the point marked "Ancient Foundations" on the Plan were not improbably those of his burial-place. His arguments are too long to enter into here.

The only persons besides Charles buried in the Minster are Otto III. (in the Choir), who was poisoned at Rome A.D. 1002, and Desiderius, King of the Lombards, with his wife and children, who were laid at the feet of Charles.

I shall now proceed to a detailed description of the edifice, following the arrangement of Noppius, as before.

¹ Quix "cannot believe" this tradition, but gives no reason for his scepticism.

² The Sarcophagus, with the marble pillars of the Church, was taken to Paris 1795, and restored 1815.

³ Dr Sträter is my authority for this.

⁴ Epitaphium Carolinum, says Noppius, stands on the left side of the Round Church, built into the wall, though originally laid over the tomb; and one still sees the same, but with a sarcophagus, whereon is carved *Raptus Proserpinæ*, or some such poet-lore. Prof. Bryce somewhat carelessly assumes that this modern slab marks the site of the original tomb. (*Holy Rom. Empire*, p. 163).

⁵ *Rheinlands Baudenkmale des Mittelalters*, by Dr Fr. Bock. (Cologne and Neuss, L. Schwann, 8vo.)

THE EXTERIOR.

The Church, which was dedicated to the Blessed Virgin Mary, consists of the original Octagon of Charles, now the Nave, with its Western Porch and Tower; to which was added in the fourteenth century a large and imposing choir, the original choir having probably been little more than a semicircular or square apse at the East end. Around the free sides of the octagon cluster the sacristies and chapels, dating from various periods. The latter are classified by Noppius as (1) S. Anne's, or the Hungarian Chapel; (2) S. Nicolas and S. Charles the Great; (3) S. Maurice above; and (4) S. Hubert below¹.

The West Tower was known as the Bell-Tower; and the exterior covering of the Dome as the Bleyenthurm or Lead Tower. I wish to direct your careful attention to the present appearance of the dome, as shown in my Section, compared with that represented in Noppius's copper-plate. The latter shows a twelfth-century spire of the usual Rhenish form, which was probably coeval with the upper blind-story superimposed in the twelfth century on the original work. This spire was much injured in the great fire of 1656. I have hazarded the conjecture, which only careful examination can verify, that the lower portions of the principal timbers are part of the original twelfth-century work; and that the injured portions were removed and the whole finished with a seventeenth-century cupola. This idea was suggested to me by the straightness of the aforesaid lower timbers, and there are other details which appear to me to confirm it. But I have not been able to make the necessary examination of the carpentry.

The Bell-Tower is at present in a state of restoration, which means that it has been pulled down to about the level shown in

¹ I cannot make his arrangement tally with that of other writers, nor with the existing names. All these chapels in the time of Noppius had separate *Rectores*.

the Section. The original form of the spire which surmounted it appears in the engraving.

"It was vaulted," says Quix, "conformably to the Minster-aisle. Two winding stair-turrets support it on each side. The ground-floor of the Tower formed an Ante-Church;" the bronze doors having originally stood East of the Bell-Tower¹. "The Upper part of the Tower is of a later date than the Church. Its original purpose is not clear, as bells were not in use in the ninth century.

"In 1366 the roof of the Tower was burnt off—the upper thirty feet of the structure—and the conflagration only extinguished by the valuable help of a Minnebruder, who received for his exertions fifteen gulden."

Noppius says, "On the Bell-Tower is a lead cross, and this tower stands between two other low Towers called the 'Sanc-tuary Chambers' (*Heilthumbs Cammeren*), also covered with lead."

A gilt copper cross twenty-one "Hammerfeet" high above the roof surmounted the Bleyenthurm, upon which stood "an iron stake eleven feet high, and thereon a gilt copper star of very incredible size; the knob however on which the cross stands is also of gilt copper twelve feet wide, and contains 400 Aachen q.²

"There is a spread eagle on the choir.

"The choir rises straight up without aisles; thus it gives light from bottom to top like a burning lantern. It is bravely vaulted, and from one side to the other in its breadth is strengthened with four iron beams, and well provided (*wol versehen*). These tie-beams were rendered necessary by the extreme thinness of the structure, and notably of the buttresses, which compare very unfavourably with the monumental counterforts of my own College Chapel.

¹ See Herr Rhoen's Restoration of the Ground-plan, preceding p. 137.

² Qu. Quarters?

The Church has three doors of cast metal (bronze); the biggest and finest being the Wolf's-Door, at the West end of the Church. It is so called because on the left side of it on a pillar of masonry is a bronze she-wolf with open mouth, having a large hole in her breast, as though she had been shot. "Thereupon," says Noppius, "Hartmannus Maurus in *Coronatione Caroli V* and many other *Historici* give their Glosses. "Quoad me, unicuique hac de re *judicium liberum esto*." Dr Sträter informs me that the so-called wolf in reality represents a bear. The hole in its breast was doubtless meant to emit a stream of water. Here again I may perhaps be allowed to pause in order to give the legend by which the popular fancy has sought to account for the presence of this figure. It is said that when the works of the Minster were in progress, the Municipality found themselves so short of funds as to be unable to proceed. As the Town-Council were sitting to discuss the means of raising money for the building, a strange figure entered the Council-room and offered to supply all necessary funds, without any condition, save that the first living creature that entered the Church when completed was to be his, body and soul.

The counsellors, finding with whom they had to deal, fled cowering into the furthest corner of the room. But gradually recovering their courage, as the stranger produced bags upon bags of coined gold, they at length agreed to the terms proposed. A document signed with their blood was handed to the stranger, who thereupon disappeared with a sulphurous smell, and the counsellors separated, having pledged themselves to keep the transaction a profound secret.

Unfortunately one of them was induced to communicate the matter to his wife, from whom it naturally spread through the whole city. Great was the indignation of the citizens that the Town-Council should have made such a bargain.

Meantime the building was steadily carried forwards, suffi-

cient funds being regularly supplied ; but as it neared completion the public anxiety grew ever greater. The Emperor, who felt that the responsibility would rest upon him, if any of his people should be the victim of the iniquitous covenant, at last on the night before the consecration festival consulted a holy hermit. The recluse set his mind at ease. On the previous night a large wolf had been caught alive. On the festival morning it was brought in a cage to the Church door : a trap was opened, and the beast rushed into the Church to the discomfiture of the foul fiend.

So far the Legend is not peculiar to Aachen. There is however a sequel.

His Satanic Majesty, determined to be revenged on the town which had outwitted him, flew off to the coast of Holland, and there picked up a large sand-hill, with intent to drop it on the town and smother all inside it. As he flew with his great burden towards Aachen, he met an old beggar-woman on the road, with shoes in the last stage of disrepair. He asked her how far it was from the city of Aachen. The old lady at once detected that he was up to no good, and replied, " You see these shoes ? When I started from Aachen they were new, and now " you see I have worn them to shreds." Weary of his burden, and indisposed for so long a flight, the devil threw the sand-hill down ; and there it remains hard by the city to this day, and is known as the Lousberg¹. It is a sand-hill, quite unlike the other hills in the neighbourhood, and for centuries there was a tradition that nothing would grow upon it. During the French occupation however an enterprising Frenchman planted it with trees, and it is now thickly and beautifully wooded, and is the favourite resort of the townspeople.

The bronze wolf before the West door is supposed to have been erected in memory of the event recorded in the legend. On a similar pillar on the right of the door is a bronze shrub

¹ See Appendix D.

(*Sträuchlein*), "so odd that one cannot well know what it is, "much less what it signifies." This also was a fountain, in the form of a pineapple or artichoke¹.

Both these works of art were carried off to Paris during the French occupation. On the pillar which supported the artichoke were the following inscriptions:

West side. dant urbi la...ces² quae q'i...v. ge.tes³.

East side. fertilis Euphrates velox ut myssile tigris.

South side. Auctori grates canit Udalrich pius abbas.

"Beyond the West side is the small churchyard, the large "one being on the South side; and on (*auf*) the small one "behind (*nach*) the Singing-room is an outstretched hand, with "these words in gilded letters,

"Ecce Leo Papa, cujus benedictio sacra

"Templum sacrauit, quod Carolus ædificavit"⁴.

The Choir was finished in 1353 (though the Foundations had been laid long before), under the direction of the Burgo-master Gerhard Freiherr von Schellart, Provost of Aachen, surnamed Chorus or Coris; a title which would seem to be eponymous from his work. The choir was not consecrated until 1413.

The tall five-light windows of the choir, nearly eighty feet from head to sill, are shown in the section. With regard to them I have a few remarks to make, tending to show how easily the archaeologist may be led astray. Dr Sträter informed me that some thirty or forty years ago, when the choir of the Minster-Church was undergoing restoration, the late King of Prussia, being desirous of encouraging the arts in his kingdom, requested a stained-glass manufacturer in Berlin to furnish designs for filling the tracery of these windows. The

¹ Both wolf and pineapple had been removed during the restoration works, at the time of my visit.

² Qu. latices?

³ Gentea.

⁴ Noppius.

windows then had six lights, and the glass-painter protested that no passable picture could be made with a mullion running up the centre. Accordingly the old mullions were removed and the windows remodelled with five lights instead of six.

This harrowing story appears to receive positive confirmation from the engraving of Noppius, which shows six lights in each of the larger windows. But this testimony is much impaired by the evident inaccuracy of other parts of the engraving. For instance, the smaller windows are in reality set between buttresses with a clear opening scarcely exceeding five feet, and allow room for no more than two lights. Yet the engraving fearlessly shows four lights, in a situation where it is quite impossible that they should have been so constructed. The fact is that the whole is drawn with a seventeenth-century artist's contempt for Gothic work, and cannot be trusted as to details.

What however settles the matter is the fact that Mr Rhoen, a professional architect, assures me that he was in constant attendance on the spot during all the restoration work, that the old traces were carefully followed out, and that the whole story of the glass-stainer and the original six-light windows is a fiction, probably founded upon this very engraving in Noppius's work.

It was the same Gerhard Chorus who built the existing Rathhaus, upon the site of the old Pfalz, as well as the old Market fountain, and many of the Towers and Gates of the town. He died in 1367 or 1371, and over his tomb by the Wolf's Door was erected a great blue gravestone with a copper plate thus inscribed :

Gerardus Chorus miles virtute sonorus
Magnanimus multum scelus hic non liquit inultum,
In populo magnus, in clero mitis ut agnus.
Urbem dilexit, et gentem splendide rexit ;
Quem Deus a pœna liberet, barathrique gehenna.

“In 1399 on the Conversion of St Paul the Provost Count Wilhelm von Wede promised and set seal to it himself, every evening to burn a wax taper over this grave, namely before the picture of the Virgin there : which yet from the hardness of the times has unfortunately fallen into disuse.”

THE INTERIOR.

There are, or rather were originally, three chief entrance-doors to the Church, viz. the Wolf's Door, at the West end, S. Anne's, now the Chapel of the same name on the S.S.E., and the Merchant's Door on the N.N.E. The original gates of bronze are still *in situ*, save that those of the Wolf's Door were originally East of the Bell-Tower, the ground-floor of which was open to the churchyard, and formed an ante-church. These gates are fine specimens of old bronze-work, and are ornamented with highly classical lion-heads, moldings, and scroll-work. A seventeenth-century porch was built outwards on a semicircular plan to receive these gates in their altered position.

Passing through the ante-church the visitor descends a few steps into the central octagon. If small things may be compared with great, I should like to call attention to the resemblance this portion of the Minster bears to St Sepulchre's Church at Cambridge, built just three hundred years later. The same low and massive arcade; the same large open triforium; above this the same eight small round-headed windows, and dome crowning all, are to be seen there as here. But Charlemagne enjoyed the riches of the greatest empire in the then world; he could draw upon Italian skill, and upon the treasures of Italian temples: while the added work of a later age closes the vista, not with a common-place Perpendicular Chancel, but with a fourteenth-century Choir of unequalled and hazardous lightness. Disappointing therefore as the interior

may be to the eye that is fresh from the glories of Cologne or Rheims, and damaging as is the monotony of the existing white-wash to a building intended to blaze with colour, yet when we consider the early date together with the excellence of the building, and the fact that three hundred years later we were building such Churches as St Sepulchre's, the mind becomes almost stupefied at the boldness and perfection of the work of the great Frankish Sovereign.

I have mentioned that the whole of the interior was originally covered with mosaics, which have now disappeared. The grave Noppius in describing them rises to enthusiasm.

"The Throne (qu. = Dome, canopy?) whence the corona depends is a wonder to behold, and shines like a golden mountain. It is inlaid with double pieces of glass, like a cube (*wie ein Würffel*), fitted over each other, and in each doublet there are two grains of gold, so that it produces a continual glitter, and remains unalterable, provided only that the bed in which these stones are laid is protected from rain, &c. And not only the Throne is decorated with this mosaic work, but all the windows—yea, as some will have it, all the church is so built that as on the windows (so everywhere) inspection is satisfied.

"Item to the decoration of the Throne formerly corresponded that of the Pavement, videlicet, instead of the present blue stone the church was paved with fair figures and flowers in small marble mosaic."

It will be seen how irreparable this loss must be. The mosaics of the dome have recently been restored by Signor Salviati, but I regret that I can say little in their favour. I have been enabled by the kindness of Herr Baumeister Rhoen, of Aachen, to exhibit to you some specimens of the mosaic cubes used in old work of Charles and in the modern work of Salviati.

The ground-plan of the Round Church consists of an octagon, formed by eight massive piers and arches of equal size.

This is surrounded by an aisle of sixteen sides, covered with a barrel vault. A small eastern apse and two side entrances, together with the Western Tower, probably completed the original plan¹.

But according to a custom which became very general in the Rhineland, the Church is built in two stories, the lower of which is the less important and imposing. While however other Churches have a double choir, here, for especial reasons, there is a double nave. Above the lower arcade rises a second, greatly surpassing the first in height and beauty. For not only are the arches double the height of those below, but each of them is decorated and supported by a double order of three small arches, which rest upon rare and beautiful polished columns brought by Charles from Ravenna and Rome². This graceful tracery is directly imitated from St Vitale, Ravenna; but the columns were the spoils of ancient temples, no contemporary artist being capable of producing such works.

In our own Romanesque Churches we find the Triforium or upper Church of considerable size and importance³, although far from assuming the dimensions seen at Aachen. It is generally difficult to understand for what kind of functions these large galleries can have served. Here however one purpose is evident. For here stood, and still stands, the Imperial Throne, "on which the Roman king sat as soon as he was crowned, and "was first saluted as Roman King by the Electors and Princes. "It is raised a little higher from the ground than a common "altar, and rises up over⁴ five white marble steps; and the "throne is likewise of white marble, fitted with copper at the "angles⁵."

¹ See Herr Rhœn's Restoration of the Original Plan.

² These were taken to Paris during the French occupation, but restored by the Treaty of Aix-la-Chapelle.

³ As at Ely.

⁴ There are now six steps, but the lowest is of black marble.

⁵ Noppius.

The throne, which is said to be that of Charles himself, stands in the Western Bay of the Upper Church, so as to face the high altar; it is raised upon six steps, and has an altar-table behind¹. Upon this throne the great majority of emperors were crowned². It is also supposed to have been that upon which the great Emperor's body was placed after death. Noppius states that this throne stood in his time "in the Hochminster of the Hauptkirch under the organ," which would seem to indicate that the original organ stood at the West end of the Nave. He continues, "*Basis hujus sedis* is open below, "and strangers generally creep through it with bowed head, for "a sign that they willingly submit themselves to the Holy "Roman Empire and to the successors of S. Charles the Great." No such passage beneath the throne is now to be seen.

Passing round the Triforium we find the existing organ between the octagon and the choir. "The old organ," says Noppius, "was an exceedingly ancient work, built by Keyser "Ludovicus Pius³ by the hands of a priest Georgius Venetus: "but in our time it was quite fallen to ruin; so the Worshipful "Chapter three or four years ago erected a new one at a cost of "over 2,000 Reichsthalers, by Master Johannes Schaden of "Westphalia, containing twenty-four Registers (= Stops)."

The Triforium, or Hauptkirch, or Hochkirch, is protected by a bronze railing, of extreme beauty and elaborate workmanship. Local antiquaries appear to regard it as being older than the Church itself. My own belief is that it was made expressly for its present position, and is contemporaneous with the building. Not only is it precisely fitted to the spaces it fills, but from its peculiar style I think it can hardly be attributed to any other age. It was doubtless the work of Italian artists,

¹ Dedicated to S. Denys.

² The crown of Germany was assumed at Aachen, that of the Roman Empire at Rome, and that of Lombardy at Monza or Milan.

³ The son and successor of Charles.

imbued with classical feeling, which they worked out in their own way.

West of the Throne, and above the Ante-Church, stands the Bell-house, or as we should call it, the Ringers' Chamber. The Bells themselves are at a higher level.

We must now return to the ground-floor level. "Between the Round Church and the Choir," says Noppius, "stands the high altar of the Virgin, and behind above the altar in a larger chest a smaller one of gold containing relics, marked *Noli me tangere*. A certain Dean who out of curiosity sought to examine it was struck with blindness."

The quasi-chapel in which this altar stands was "walled round, railed in, and vaulted, with the vaulting-ribs gilded, and with gold stars on a blue ground in the filling-in; also with three painted figures on the vaulting¹."

"On this high altar no one may celebrate mass but the Archbishop of Cöln, the Bishop of Lüttich, and those Canons who have the Pope's licence thereto.

"There are Thirty Altars more in this Church." Since the time of Noppius these have happily been removed, all, or nearly all.

"The pulpit is from top to bottom and on one side covered and decked with gold plates, and beautiful shining precious stones; which treasure was presented by the sacred Keyser Henricus II., Duke of Bavaria²." It bears the following inscription :

"Hoc opus Ambonis auro gemmisque micantis
 "Rex pius Henricus, cœlestis honoris anhelus,
 "Dapsilis ex proprio tibi dat sanctissima Virgo,
 "Quo prece summa tua sibi merces fiat usia."

The last of these lines (which I have copied from Quix) seems so obscure as to lead me to question the correctness of his quotation.

¹ Qu. the Trinity?

² Henry II. (the Saint) reigned 1002—1024.

It is without exception the most gorgeous piece of church furniture I ever met with. It is composed entirely of plates of beaten gold, thickly set with antique jewels and ivory carvings. Every work of Roman or Greek art was at that early period pressed into the service of the Church; and as we see the sarcophagus of Charles carved with the Rape of Proserpine, and the Altar-Cross of Lothar¹ bearing as its central ornament a cameo of Augustus, so this pulpit is adorned with carvings of Bacchus, and other pagan subjects.

"The Altar in the Choir," continues Noppius, "is likewise overlaid in a very beautiful and costly manner with gold plates, said to have been made from the treasure taken from the tomb of Charles.

"These treasures with many other jewels were removed from here on account of the past turbulent times, but now [1627] have happily returned.

"In front of this altar stands a most beautiful piece of art of cast copper, representing the history of the three kings."

Hard by is the tomb of Otto III., poisoned at Rome 1002 A.D. Above it hangs the figure of our Lady, "very artificial," clothed with the sun, and surrounded by angels.

Not on the tomb, but in the Sacristy, is this inscription:

"Romani Imperii Decus amplum, tertius Ottho,
"Corpus Aquisgranum, Augusta sed exta tenet."

There is also in the choir a large brass lectern, of 15th century work.

"On the pillar-shafts of the Choir stand our Lady and S. Charles followed by the twelve Apostles; and on both sides of the Choir the vowels A.E.I.O.V. and under them on the right side the date 1486, in which year Maximilian I.²

¹ Lothar I. reigned 840—855. On the stem of this Cross is another cameo, carved with the bust of Lothar, and the inscription

+ XPEADIVVAHLOTHARIVMREGEM +

² His father Frederic III. did not die before 1493.

“was crowned here. He took these letters for his device, and
“stamped them on his coins, explaining them thus :

“Aquila Electa Iuste Omnia Vincit.

“(Teste Lorichio in Enchiridio suo Arrestorum, p. 68). Others
“interpret :

“*Sicut* Aquila Evolat Inter Omnes Volucres,

“*Ita* Aquisgranum Eminent Inter Omnes Vrbes.”

Petrus Lambecius, however, in his *Diarium Sancti Itineris Cellensis* (1666) interprets thus :

“Austriæ Est Imperare Orbi Vniverso.”

It was, says Quix, a *Denkspruch*, or motto, of Frederic III.¹

“I may mention,” observes Noppius, “what has been of old
“remarked, that no one can with impunity or without damage
“enter the Choir booted and spurred.”

From the centre of the Dome hangs the great Corona. It is of silver and gilt copper, richly adorned with enamelled figures, “and has in its circumference eight large and eight
“small turrets, and forty-eight wax candles. It was given by
“Frederic I. (in the year 1166 ?), and bears this legend :

“Cælica Jerusalem signatur imagine tali,

“Visio pacis, certa quietis spes ibi nobis :

“Ipse Joannes gratia Christi Præco Salutis

“Quam prophetavit, quamque Prophetæ denique virtus

“Lucis Apostolicæ fundavit dogmate vitam,

“Urbem siderea labentem vidit in æthra

“Auro ridentem mundo gemmisque nitentem

“Qua nos in patria precibus pia siste Maria.

“Cæsar Catholicus Romanorum Fridericus

“Cum specie munerum cogens attendere clerum

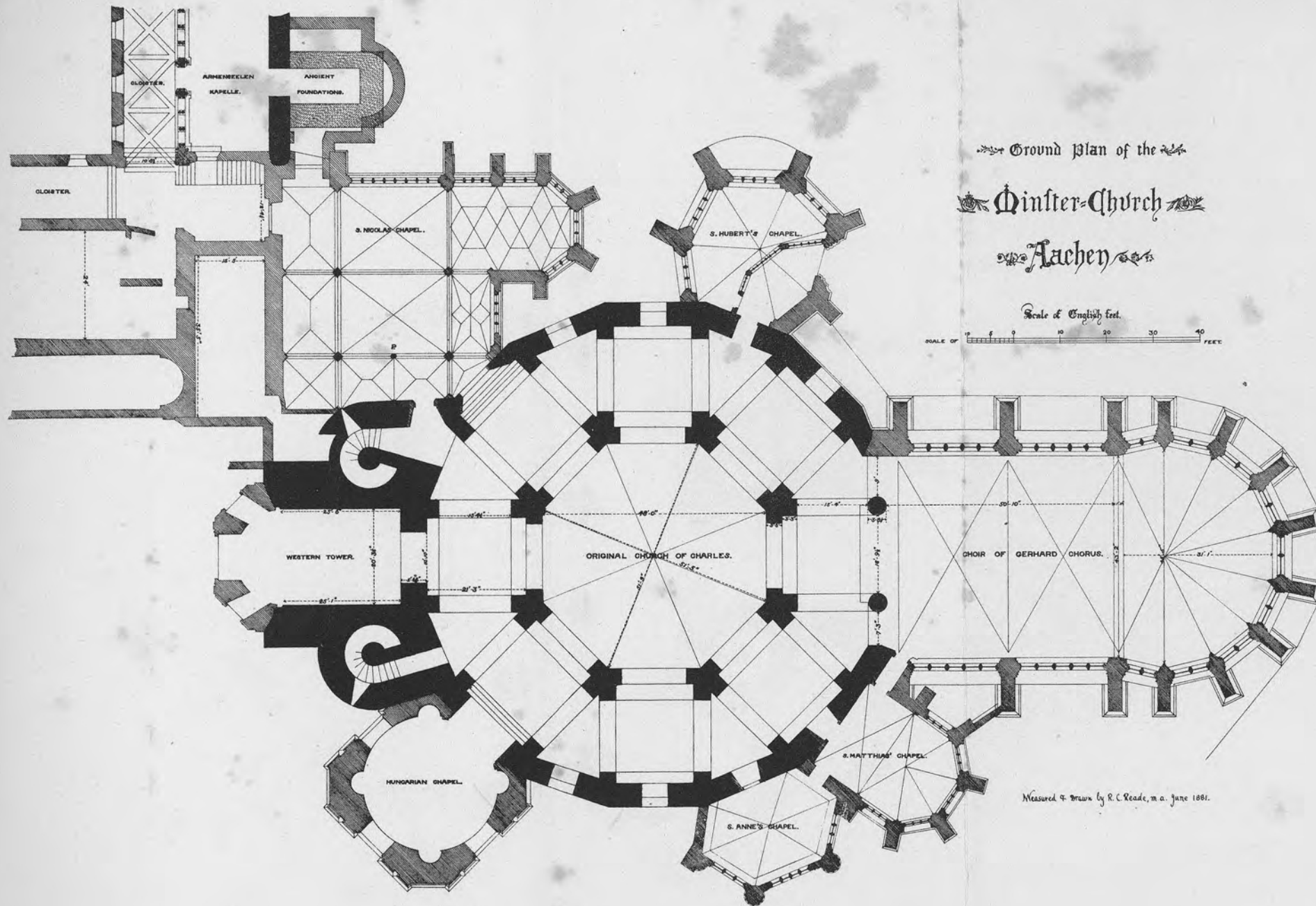
“Ad templi normam sumunt sua munia² formam.

“Istius octogenæ donum Regale coronæ

¹ A fourth interpretation is

Aller Ehren Ist Oesterreich Voll.

² Qu. muncra ?



Ground Plan of the
Minster Church
Aachen

Scale of English feet.
 SCALE OF 0 10 20 30 40 FEET

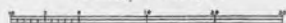
Measured & drawn by R. C. Seade, in a. June 1861.

Longitudinal Section of the

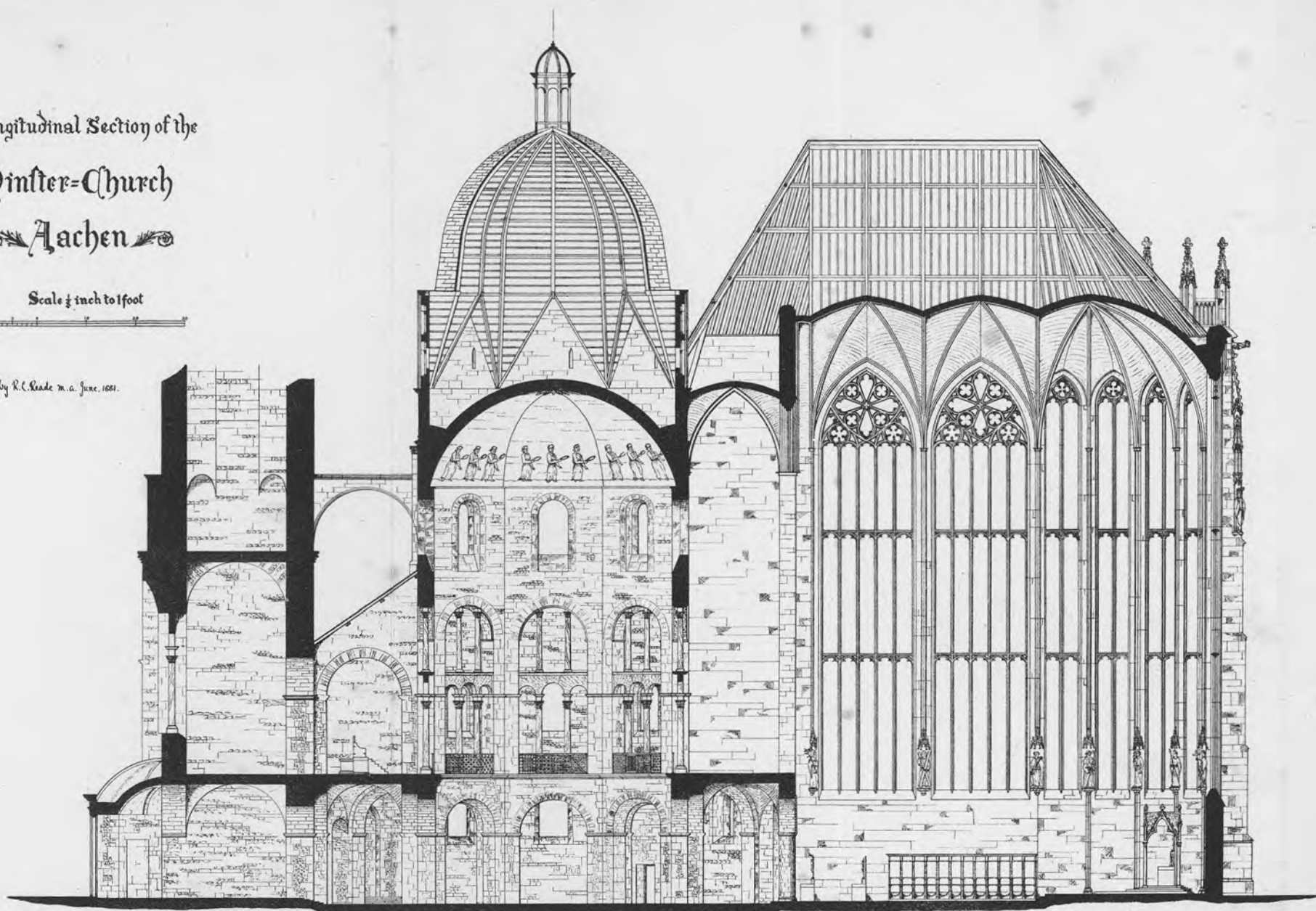
Minster-Church

Aachen

Scale $\frac{1}{2}$ inch to 1 foot



Measured & drawn by R.C. Seade m. a. June, 1881.



"Rex pius ipse piæ vovit solvitque Mariæ.
 "Ergo stella Maris astris præfulgida claris
 "Suscipe munificum prece devota Fridericum
 "Conregnatricem sibi junge suam Beatricem¹."

The "turrets" in this corona are open, like lanterns, and were probably intended to hold lamps or larger candles. The corona is so large, that its forty-eight candles seem when lighted quite inadequate to its requirements, and the above inscription runs round it in a single line.

To conclude the account of the Church Furniture I quote from Noppius the following remarks on the bells. "There are," says he, "in this house of God ten large and small bells, the largest of all, called Our Lady's bell, having been cast in 1535, by a citizen of this town, John of Trier, who also in the same year cast another, called 'S. John's, or the Sermon bell.' The latter weighs 4000 lbs. the former 16,000 lbs. and bears this inscription :

"Cur mihi Sacrificus Mariæ ter amabile nomen
 "Indiderit, si me, lector amice, roges,
 "Vox mihi dulcis erat, dulci famulaberis, inquit,
 "Nymphæ, quam referes nomine, voce, tono.
 "Hinc simul atque meas liquidum ferit æthera clangor,
 "In Mariæ laudes excito corda pia.
 "Protinus horrissono nubes, quæ grandine terrent
 "Agricolas, sonitu dissipò læta meo.
 "Oderit hæreticus, metuant cacodæmones, hanc quæ
 "Virgo Deum genuit, jugiter ipsa canam."

"Charles the Great's bell, which still weighs 8000 lbs., is thus inscribed :

"Anno Milleno, C ter, L ter, X magis Uno.
 "Laude Deo plena mihi Carola nomen amcena."

I have mentioned that the whole of the interior was covered with mosaic work. Not content with this, Kaiser Otto III. further beautified it with pictures by painter John of S. James's

¹ Beatrice, daughter of the Count of Burgundy, and second wife of Frederic I.

Cloister at Liège. I know nothing of this artist beyond the scant information supplied by his epitaph¹:

Sta, lege, quod spectas, in me pia viscera flectas,

Quod sum, fert tumulus, quod fuerim, titulus.

Italiæ natus

...

Qua probat arte manum, dat Aquis, dat cernere plenum,

Picta domus Caroli, rara sub axe poli.

It remains for me to give some account of the subsidiary adjuncts to the Church proper. The original building of Charles is surrounded by numerous chapels, of various date and style. First of these in order of time, first also in position to one commencing at the east end, and going with the sun, is the double Chapel of S. Matthias. It may be some decades later than the Choir², but is probably the work of the same founder. It is now used as a sacristy, but its richness and general character clearly show that this was not its original destination.

Entering it from the Choir (the original entrance having been blocked up), the passage pierces a double thickness of wall (see Plan). A door opposite to this entrance leads into the Anna-Chapel; but this also is a modern alteration. It is very richly carved and vaulted in the interior, and the windows are of graceful tracery. Bock asks with much point, What can have been the intention of those who bestowed so much labour on a mere robing-room? His answer is as follows. It was, he thinks, a *conclave* or place of meeting for the seven Electors and the Emperor-elect at the Imperial Coronations. He suggests that the seven wall-spaces were meant to symbolise and to form seats for the Electors, while the large eighth wall-space abutting on the Round Church was for the Emperor, who may perhaps have there received the homage of the Electors.

¹ Quoted by Quix.

² About 1410, according to Bock.

If this were so, it may be asked, Why did this *Conclave* or Lobby contain an altar? The question is answered by Hartmannus Maurus (*Consecr. Caroli V.*), who says that the Imperial Robes were laid on the altar before and after the Coronation.

Some have supposed that the Upper Chapel served for the purpose here indicated. But if it be considered that up to the beginning of this century the Upper Chapel was only accessible from the Lower by an exceedingly narrow winding stair¹, quite impracticable for an Emperor in his robes of state, this view will be at once dismissed.

Bock suggests that the Upper Chapel was intended as a fire- and thief-proof sacristy, especially designed to hold the royal insignia required for the coronation. His view receives support from the fact that a similar arrangement is found in the Cathedral of Prague.

The Upper Chapel is moreover strikingly plain and unadorned, compared with the rich work of the lower portion.

Passing through the Chapel of S. Matthias we reach the Second Sacristy or Anna-Chapel. This work is of later date, and exhibits throughout flowing tracery. Originally it was a porch open to the outer air, as seen in Noppius's engraving. It was then known as the Anna-Thor, and was appropriated as a burying place to the Brotherhood of the Mother of God, a guild founded in 1452, who purchased it from the Chapter in 1491 for a yearly payment of 3 marks 4 shillings. Above it was the Anna-Chapel proper and the Archive-Room. The Anna-Chapel was consecrated on January 28, 1449, by John of Heinsberg, Bp. of Liège. In 1586 the revenues were bartered away (*verdiinkelt*) and there was no Rector more.

The *Hungarian Chapel* is at the S.W. corner of the Church. It was originally founded by King Louis of Hungary in the

¹ At present the entrance is from the Hauptkirch of the Octagon.

year 1374 for the pilgrims of his nation, and the aspect of his work is indicated in Noppius's engraving. But it had the misfortune to be "restored" in 1767 by Count Batthyany, Commander of the allied Austrian army in the Netherlands against the French in the War of the Succession, A.D. 1748, to whom we are indebted for its present classical features and bulbous copper dome.

It is stated by Noppius that S. Bernard said Mass in this Chapel, at which time he healed a lame man and four blind men. The chasuble in which he celebrated was still preserved in the Minster in Noppius's day; he describes it as being of blue satin adorned with flowers of pearl.

The *Chapel of S. Nicolas* is at the N. W. angle of the Minster, and is perhaps the most interesting of all. Unfortunately I can do no more than refer you to the elaborate account of it in the work of Bock, who seems to have made an exhaustive review of its past and present condition. Since 1812 it has been generally known as the Kreuz-Kapelle, or Chapel of the Cross. Says Noppius, "This chapel like the "cathedral has a Chorus Pensilis, or Upper Church, and under it "*pro fulcro* near other hewn pillars a fair polished gray column "like the other aforesaid pillars in the Church." [Marked *P* on Plan.] This also (see p. 144) was removed to Paris, 1795—1815.

It was probably from the gallery of this chapel that ran the covered colonnade (*Säulengang*) connecting the Church with the Palace. After leaving the Church it would seem to have passed over the east side of the cloister. Eginhard tells us that on Thursday in Holy Week, A.D. 817, as Louis the Pious was returning from Church, this colonnade fell in, whereby the Emperor and his suite were covered with the ruins and more or less injured. Such accidents were not uncommon in the earlier middle ages, before the use and necessity of buttresses had been discovered.

It would seem from Noppius that the upper portion of

S. Nicolas's Chapel was the Chapel of S. Charles; but Quix, whose arrangement is more intelligible, calls it the Chapel of S. Michael. This was formerly an appendage to the Priory (*Probstei*); but in 1348 the Emperor Charles IV. pawned it to the Margrave of Jülich, since which time the Dukes of Jülich have had the right of presentation to the chaplaincy. In this chapel is to be seen the beautiful marble sarcophagus, sculptured with the Rape of Proserpine, in which the bones of Charles are said to have been laid by Frederic Barbarossa.

S. Michael's Chapel, which according to Quix was above that of S. Nicolas, was founded by Henry, Duke of Bavaria, Palsgrave of the Rhine, Bishop of Speier, Utrecht, &c., Provost of the Church, who died in 1552.

"*S. Hubert's Chapel*, just before the merchants' door, "has long served for the Canons to hang up their vestments. So long ago as 1586 the name of the Founder was "unknown." The Chapel is of a singular shape, and is separated from the passage into the Church by a rich fifteenth century screen. There is reason to believe that the original vestry was in this position, and that a branch colonnade connected this vestry with the great colonnade running from S. Nicolas's Chapel to the Palace. Above it, according to Quix, is the Chapel of S. Charles, but Noppius calls the Chapel over that of S. Nicolas by this name, and states that above S. Hubert's is S. Maurice's Chapel.

The *Baptistery* (*Tauf-Kapelle*) is the only one remaining of the Eight Chapels which formerly stood before the Wolf's Door towards the Fish Market. Up to the year 1803 all the children of the town were baptized here, except from Easter to Whitsuntide, when Baptism was administered in the Hoch-Münster, where the font stood before S. Denys' altar, at the back of the Imperial Throne.

Besides the above, there were formerly a number of Chapels which have now disappeared. "To the west of the Church,"

says Quix, "there was [originally] a forecourt, which was at "a later time shut in by Chapels and the arcade formerly there. "Of these Chapels the following extended from the Wolf's "Door to the Baptistry."

S. George's Chapel. At the end of the sixteenth century this Chapel was so ruinous that the Dean of the Church gave leave to the Rector to say his weekly Mass at the altar in the choir.

S. Servatius' Chapel was removed in the year 1621.

S. Martin's Chapel.

S. Antony's Chapel.

S. Barbara's Chapel.

These five Chapels had ceased to exist in 1730, and their place is now occupied by houses. Opposite to them were

S. Quirinus's Chapel.

S. Katherine's Chapel, the largest of those in front of the Wolf's Door. It was ruinous in 1730, and towards the end of last century the stones were removed and the site laid out as a garden. In 1823 the foundations were discovered, and in them two grey granite columns, ten feet in length. These appear to have been carefully buried, as they were covered with loam. At an earlier date a white marble column had been taken from the same ruins.

S. Giles' Chapel existed up to the fire of 1656, and was not afterwards rebuilt. The entrance near the Armen-Seelen Kapelle was walled up, and the Chapel itself used as a muniment room.

S. Oswald's Chapel, which was renewed and consecrated in 1767, was the private Chapel of the Dean.

Perhaps the most interesting, and certainly the earliest and richest, of all the subsidiary buildings about the Minster, is what is called the "Dormitorium of King Philip of Swabia," otherwise known as the "Armen-Seelen Kapelle." This Philip, Duke of Swabia, who was Provost of Aachen from 1185 to 1194, was

crowned Gegenkönig or Anti-king in the Minster-Church by some of the Electors in the year 1198. He died in 1208¹; and we find the following notice of his death in the *Sterberegister des Aachener Stiftes*, which was probably compiled in the first half of the fourteenth century. (Quix.)

“Obiit Philippus Rex, qui cum esset præpositus huius ecclesiæ, de bonis præposituræ ædificatum est claustrum et dormitorium.”

It is evident that the name “Dormitorium” is derived from this excerpt. The Claustrum, or cloister, was rebuilt after the fire in the seventeenth century, and much of Philip’s remaining work was removed in order to make room for the Kreuz-Kapelle. The only building besides the Cloister which was known to be his work being the Armen-Seelen Kapelle, the name of Dormitory was naturally applied to that.

This building is perfectly plain in the interior, and is covered with a heavy barrel vault. Along the side of it however, towards the cloister, is a rich and exquisite Romanesque arcading, with a wider entrance arch in the centre².

Anything less like a Dormitory it would be difficult to imagine. Moreover Dormitories were (1) never built on the ground-floor, (2) never vaulted. It would seem far more likely that this building was originally a portico, forming the entrance to a still more sacred building behind. It is otherwise suggested that it was part of the original passage or colonnade, connecting the original Carolingian Pfalz with the Pfalzkapelle, or Minster-Church.

However this may be, it is clear that King Philip, or Provost Philip, built the existing arcade, and it seems equally certain that the building to which he attached it was already existing, and was not his work. The question arises, admitting the

¹ By the hand of an assassin.

² See engravings in Bock’s work, Vol. I. pp. 4, 5, of the article on Philip of Swabia’s Building in Aachen Minster.

structure to have been a portico, leading to a more important chamber in the rear, what must we suppose that chamber to have been?

The answer given by Bock deserves attention. He considers this rich portico to have been erected in order to glorify the entrance to the tomb of Charlemagne, which he supposes to have been in the oblong building which formerly existed behind the Armen-Seelen Kapelle, at the spot marked on the plan, "Ancient Foundations." This conjecture he thinks "not hazardous." The thick walls of the foundations are built, he says, with a "pre-Carolingian cement." The fact that the antechamber was used as a mortuary chapel and called the Armen-Seelen Kapelle in very early times may perhaps be held to confirm his view.

We are now met by the question, Where was the true Dormitorium? For answer some writers refer us to a square vaulted room above the intersection of the cloister, measuring about sixteen feet in every dimension. There is little doubt that this belongs to the latter part of the twelfth century; it seems to have been built during the Vice-Provostship of Albertus Aquensis, the celebrated historian of the First Crusade; but its peculiarities render it eminently unsuited for a dormitory, and equally well adapted for an "archive-hall" or muniment-room, by which name it is generally known. As will be seen from the engraving in Bock's work¹, this chamber was built against a structure of earlier date, for we there see an early horizontal cornice supported by small round arches cutting into the *formeret* (or wall-arch) of the groining.

This closes the list of the more important appendages to the Cathedral. There is much room yet for investigation and description of the arrangements of the cloister, gateways, &c. The greater part of these date back to the fifteenth century; much of the work being considerably older: but my research

¹ *Baudenkmale*, p. 6 of the same article.

did not penetrate so far, and I can only indicate it as a missing object of study to those whose pursuits follow the bent of architectural and historical inquiry.

And here I must conclude this very incomplete sketch. At every turn I have been put to inconvenience by the imperfect nature of my materials, and by the great difficulty of obtaining the few works which throw light upon the subject. When I mention in addition to these impediments the great labour thrown upon me by a very slight acquaintance with the German language, I trust I shall have said enough to excuse myself in the eyes of the Society for having laid before them the *disjecta membra* of what should have been a complete and organized whole.

DESCRIPTIONS OF THE PLATES.

1. Engraving of Minster Church about 1630 (from Noppius).
to follow p. 136.
2. Herr Rhoen's Restoration of the original Ground-plan.
to precede p. 137.
3. Ground-plan.
to follow p. 152.
4. Longitudinal Section.
to precede p. 153.

APPENDIX A.

ON THE BONES OF CHARLES THE GREAT.

It is perhaps too much to expect minute antiquarian precision from general writers; yet if the local archæologist may be trusted, the statements made by certain English authors of repute are by no means accurate. I have endeavoured to show that the story of the opening of the tomb of Charles by Otto III. is contrary to evidence. Prof. Bryce is equally incautious in his location of the tomb. He speaks of it without hesitation as having been "below the central dome¹." Dr Freeman would seem to entertain the same opinion, though his language may perhaps be interpreted otherwise². The local authorities are quite agreed that the original tomb was not below the present memorial slab.

Professor Bryce is no less rash in the following remark³, 'The Sarcophagus in which Charles himself lay, till the French scattered his bones abroad, had carved on it the Rape of Proserpine.' First, Prof. Quix, a high authority, denies that the bones were ever laid in that sarcophagus; secondly, the bones were not scattered abroad, but remain in the Church to this day. Dr Sträter informs me that he has handled them; and I have looked in vain for any tradition of their desecration or removal by the French; although there were in truth few objects of interest or value which escaped their brigand-like touch.

APPENDIX B.

SEQUENTIA DE S. CAROLO IMPERATORE.

The following Sequence is of some antiquity, and is given *in extenso* by Noppius, who states that it was sung on the feast of S. Charles. The opening lines have been quoted and re-quoted in every guide-

¹ *Holy Roman Empire*, p. 82.

² *Historical and Archaeological Sketches*, p. 71. (Macmillan, 1876.)

³ *Holy Roman Empire*, p. 54.

book, and are at least as old as the thirteenth century (see Appendix C).

Urbs Aquensis, urbs regalis,
Regni sedes principalis,
Prima regum curia,
Regi Regum pange laudes,
Quæ de Magni Regis gaudes
Caroli præsentia.
Iste Cœtus psallat lætus
Psallat Chorus hic sonorus
Vocali concordia:
At dum manus operatur
Bonum quod cor meditatur
Dulcis est Psalmodia.
Hac in die, die festa,
Magni Regis magna gesta
Recolat Ecclesia,
Reges terræ et omnes populi
Omnes simul plaudant et singuli
Celebri lætitia.
Hic est Christi miles fortis,
Hic invictæ dux cohortis
Ducum sternit millia.
Terram purgat lolio
Atque metit gladio
Ex Messe zizania.
Hic est magnus Imperator,
Boni fructus bonus sator
Et prudens Agricola.
Infideles hic convertit
Fana Deos hic invertit
Et confringit idola¹

Hic superbos domat Reges,
Hic regnare sacras leges
Facit cum justitiâ.
Quam tuetur eo fine
Ut et justus, sed nec sine
Sit misericordia.
Oleo lætitiae
Unctus dono gratiae
Cæteris præ regibus.
Cum coronæ gloriæ
Majestatis Regiæ
Insignitur fascibus.
O Rex Mundi Triumphator
Jesu Christi conregnator
Sis pro nobis Exorator
Sancte Pater Carole.
Emundati a peccatis
Ut in Regno Claritatis
Nos Plebs tua cum beatis
Cæli simus incolæ.
Stella Maris O Maria
Mundi Salus, vitæ via,
Vacillantum rege gressus
Et ad Regem des accessus
In perenni gloria.
Christe splendor Dei Patris
Incorruptæ Fili Matris
Per hunc sanctum cujus gesta
Celebramus, nobis præsta
Sempiterna gaudia. Amen.

¹ The allusion is doubtless to the conversion of Witikind and the Saxons, and to the destruction of the Irminsul.

APPENDIX C.

THE KORNHAUS AT AACHEN.

An old half-ruinous hall stands not far from the West End of the Minster Church. It is known as the Kornhaus, or as the Court-house of King Richard of Cornwall. The building is of interest to Englishmen, because it commemorates the one Englishman who attained the Imperial dignity, though never actually crowned Emperor. Richard Plantagenet, Earl of Cornwall, son to King John and brother to Henry III., was elected Emperor by four out of the seven Electors, the remaining three recording their votes for Alphonso the Wise, King of Castile. This was during the Great Interregnum, after the failure of the Hohenstaufen or Swabian line. He was crowned King of Germany (*Deutscher König*) with much pomp in 1257, and reigned until 1272. It was probably about the year 1267 that the Kornhaus was erected. It is of a chaste thirteenth century character, and is decorated with figures of the seven Electors in the topmost order, or blind-story, of the Façade. Under the first-floor windows runs the following inscription :

[U]RBS AQUENSIS URBS REGALIS REGN[I]
 [SEDES PRINCIPA]LIS PRIMA REGUM CU[RIA]
 [HOC OPUS] FECIT MAGISTER HEI[NRICUS]
 [REGNA]NTE R[E]GE RIC[ARDO]¹.

APPENDIX D.

THE SALVATORS-KIRCHE AT AACHEN.

The building which gives the distinctive appellation to the French name of *Aix-la-Chapelle*, is not the Minster-Church of Charles the Great, but a structure of Basilican type erected by his son and successor, Louis the Pious. Its date can be very accurately determined. Louis succeeded his father in the year 814. He built this basilica in conjunction with his first wife Irmengard, to serve as a burial-

¹ See Bock, *Rheinlands Baudenkmale*.

place for his family. Irmengard died in 818, and the Church must therefore have been commenced during those four years.

It is interesting to notice the total difference in character between the Church of Louis and that of his father. The former is a basilica with nave and aisles of the ordinary early type; the latter is one of the rare circular churches which are found here and there from end to end of Europe.

Several years after the death of Louis the Pious, his son, Louis the German, having visited Aachen, and found his parent's church almost in ruins, issued a Diploma dated 17 Oct. 855, by which he made it over to the Abbat Ansibold and his successors in the Abbey of Prüm, and also appointed a chaplain to minister in it.

The Church stands upon the Salvator's Berg, which is merely a spur of the Lousberg. It is supposed that the word Lousberg is a corruption of Luwesberg, or Ludwigsberg, so named after the Church of Louis built upon it.

The common folk call the Church S. Sellester's, whence it has erroneously been supposed to be dedicated to S. Silvester.

APPENDIX E.

EGINHARD THE HISTORIAN.

Eginhard, or Einhard, was born at the commencement of Charles's reign, about the year 770, probably in the province of Starkenburg, in the Grand Duchy of Hesse Darmstadt. He was one of the College of children brought up under the patronage and personal care of the Emperor. His gratitude to Charles rendered him a constant friend of his son, Louis the Pious, by whom he was named overseer of public works, and governor of Louis's son, Lothar, when the latter was associated with his father in the empire. Eginhard married Emma, whom tradition alleges (erroneously, one may suppose) to have been a daughter of his master Charles. Soon after his marriage he took monastic orders, without however separating from his wife, "*mais en ne conservant plus avec elle que des relations toutes fraternelles.*" He appears to have first been appointed Abbat of Blandigny de Gand. In 807 he added to this the abbey of Fontenelle, or Saint Wandrille, in the diocese of Rouen,

which he ceded in 823 to his friend Ansigis. He also held the monastery of S. Bavon, which he restored, A.D. 819. Besides the above, in the year 819 or 821 he received the abbey of S. Servais of Maestricht. Another of his preferments was a certain monastery of S. Cloud, not however the S. Cloud in the neighbourhood of Paris. Lastly, he held the benefice of S. John Baptist des Dames at Pavia.

It appears that up to 830 in spite of his abbeys he lived at the Imperial court. He built a church "d'une construction assez remarquable" on his demesne of Michelstadt in the Odenwald, and obtained for it relics of S. Peter and S. Marcellinus. These he afterwards moved to Mulinheim, which he renamed Seligenstadt, or City of Saints, where he founded an Abbey of Benedictines, which existed up to the end of the last century. He intervened, but without success, to prevent civil war between Louis the Pious and his sons; and soon after falling ill retired to Seligenstadt. He recovered his health, but not completely.

In 833 Louis the Pious was driven from his throne, and the empire divided between his sons Lothar, Louis the German, and Pepin. Eginhard was obliged to vow homage to his new master Louis the German. In 836 his wife Emma died. About the same time Louis the Pious went to visit him at Seligenstadt.

He died in 844, aged 74 years.

Other contemporary authorities are Frodogar, Bishop of Rheims, and Aistulph, a cleric of Tours.

XI. NOTE ON MOÏSE DU SOUL (MOSES SOLANUS), M.A.
BY ROYAL MANDATE, 1701. Communicated by the
REV. JOHN E. B. MAYOR, M.A., St John's College,
Professor of Latin.

[May 8, 1882.]

LUCIAN ver. hist. I 24 amongst impossibilities in nature τῇ μέντοι γαστρὶ ὅσα πῆρα χρώνται, τιθέντες ἐν αὐτῇ ὅσων δέονται. ἀνοικτὴ γὰρ αὐτοῖς αὕτη καὶ πάλιν κλειστή ἐστίν. 'They (this imaginary tribe) use the belly for all the purposes of a pouch, putting in it whatever they need. For it is capable of opening and shutting again.'

On which Solanus, or Moïse du Soul, remarks (II 91 *a* ed. Reitz) ridet Lucianus historicum aliquem, qui talia animalcula dari tradidisset; sed immerito; nuper enim post nostrorum hominum ad Indias utrasque nauigationes compertum est, existere genus quadrupedis, cui sub uentre pera quasi est, in quam se pulli recondunt. cuius modi Cantabrigiae anno MDCC uiuam circumlatam earum rerum curiosi omnes viderunt. adi etiam Ael. n. a. I 17.

Aelian and others cited by Jacobs in his note, especially Ambrose hexaëm. v 3 § 7, ascribe this property to what they call the dog-fish. Add Basil. in hexaëm. hom. 7 § 2 (I 64 *b*) of dolphins and seals.

I think that the Society may be interested to learn that an opossum from America was exhibited here in Cambridge nearly

200 years ago; in the same year in which Marshall of Christ's read to the Royal Society a paper on the religion of the Bramins.

Leaving those whom it concerns to hunt the spectacle, this marsupial so strangely recorded for our benefit¹, I venture to offer a few notes on the spectator, Du Soul, who has been singularly neglected. Nicéron, Jöcher, the biographical dictionaries, the *Nomenclator* of Eckstein, know nothing of him. There is a meagre notice in Haag *La France Protestante* iv¹ 512 and another in Nichols *Lit. Anecd.* iv 286.

La France Protestante doubts whether his Lucian was published, and conjectures that he was descended from Paul du Soul of Tours, professor of theology, rector of the academy of Saumur in 1657 and 1661. He says himself that his grandfather was professor there.

Agnew in his *French protestant exiles* omits him entirely.

Note in Tonson's edition of Plutarch's lives v 456 b 457 a (Lond. 1724 4to) ἄνδρας εὐνούχους. Sic in act. apost. VIII 27 ἀνὴρ Αἰθίοψ de eunucho reginae Candaces praedicatur. non uideram hunc Plutarchi locum, cum dissertationem academicam edidi, quam cl. Rhenferdus *syntagmati* suo *dissertationum de stylo n. test.*² inserere dignatus est. uide pag. illius syntagmatis 308 et seq. et, tanto post interuallo, quis ille Solanus sit, disce. ita enim Latine nomen meum adscripseram, auum secutus, qui in academia Salmuriensi uirorum clarissimorum collega, nullis tamen ipse scriptis publice editis claruit. ib. 457 a ego ad

¹ No more valuable addition to folk-lore could be made than by an edition of the hexaëm. of Basil and of Ambrose, annotated by a widely read classical scholar, by a master of mediaeval legend, and by a zoologist. May not the tradition of marsupial seals, etc. point to some extinct species?

² Leouardiae 1702, 4to. Mosis Solani, Fontinaea Galli, dissertatio philologica de stylo N. Testamenti, contra Seb. Pfochenium, fills pp. 261—316. He speaks (p. 266) with due admiration of Thomas Gataker, who had also written against Pfochen. Du Soul cites his dissertation on Luc. de morte Peregr. 13 (III 338 a), Dem. enc. 33 fin. (ib. 516 a).

Lucianum *de salt.* c. 10. aliquid etiam annotaui, quod quando in lucem proditura sit nescio.

ibid. p. 452 *b* he explains *προσθήκην* 'hominem qui alteri se ita addixit, ut per se nihil agat. Angli *a property* dicunt; Galli interdum *dupe* eiusmodi hominem vocant, aliquando *créature*. Romani *obnoxios*, Taciti praesertim aetate appellabant.'

Du Soul wrote the preface to the reader before vol. I dated 1 May 1727, and another notice about various readings dated 5 Apr. 1728. The title is dated 1729. Augustine Bryan, the original editor, died 6 April 1726, leaving notes only for 17 pages of vol. III, and for the remainder brief marginal notes on a copy of Estienne's edition. ad me, ruri in otio litterario degentem, uentum est, aliis quidem studiis longèque diuerso operi intentum, sed huic fauentem, ex quo tot rei publicae litterariae omniumque adeo ordinum hominibus reditura uidebam comoda. . . . accepi itaque prouinciam, a uiro docto et graui in primis oblatam, cui si ipsi rem in se suscipere per grauiora negotia licuisset, non sensisset resp. litteraria detrimenti quicquam editoris morte ad se hac in editione peruenisse. ego uero, re intellecta, publicis commodis hac in parte non deesse, officii mei esse duxi; missisque ad tempus aliis omnibus, totum me huc accinxi.

He says that one or two conversations with Bryan, as well as his writings, proved him to be a man of modesty.

He inquires into the reasons for the neglect of Greek, which in the 16th century was studied night and day even by princesses. One reason is the awkward arrangement, by roots, adopted by the lexicons; another the want of Greek-English, Greek-French etc. lexicons (he cites his article on this head, *nouvelles littéraires* XI); and a third the use of editions with latin versions. Any one who would carefully read Greek texts, collate them with the best editions, consult lexicons and note peculiar uses of words in the margin, become familiar with

great classics by repeated reading, would soon become a critical scholar. spondeoque paucis annis futurum, ut magna cum uoluptate magnoque cum fructu, quoscumque opus fuerit, euoluere et intellegere libros Graecos possint.

In vol. III 548 *a* he takes an early opportunity of comparing the tyranny of Sulla's troops with the *dragonnades*: insolentiam, crudelitatem, fastum lautitiasque horum hominum experti norunt Galli reformati nostri, qui sub Ludouico XIV milites, Draconum nomine insignitos, hospitio Sullanum in morem excipere, donec sacris Romanis nomen darent, cogebantur. p. 561 *b* owls used (in the writer's time) as decoys in hawking.

His studies on Lucian *ibid.* 577 *a*: phrasis est Luciano admodum familiaris, mihique adeo notissima, qui scriptori ter-sissimo operam dedi nondum publici iuris factam, sed quando d. Hemsterhusio otium erit, eadem in palaestra sudanti, in lucem tandem emittendam.

Who was first invited to continue Bryan's work I know not, unless it were Thomas Bentley¹, who writing to his uncle, says (*Corresp.* 640) of mss. which he examined at Paris: "The chief was Plutarch; I had promised Mr Bryan to see what mss. there were of that author. I found admirable ones that surprised me. I collated one that has only pieces of about 7 or 8 lives quite through, far better than any Xylander or H. Stephens had. From that, and two more that have all the lives, and two of the morals, very old indeed, I would undertake to correct Stephens's Plutarch in 20 thousand places."

In a later letter, 25 March [1726], from Rome (pp. 652—3) he is still engaged on Plutarch:

"There is one or two of the lives, and 2 or three of the morals that are old; as good, or near it, as those at Paris . . . But what can a body do with such great books, where they

¹ Monk II 240—1 "Both at Paris and at Rome he devoted much of his time to collating Greek manuscripts of Plutarch, of which author he meditated an edition, and received encouraging offers from some booksellers."

only allow the use of them for 3 hours in a morning, and that but 5 times a week, or but 3 or 4 times? for all holidays etc. are vacancies . . . At that rate it would take one 4 or 5 years to go through all Plutarch's works.

"I could like well enough to do those at Paris, where they gave me a room to myself, and the ms. to go to when my appetite came. But, at the best, 'tis a terrible piece of work, and too much for my shoulders; and yet I like the encouragement, and don't want inclination . . . If you'd be pleased to get some good scholar to write the notes and correct the version, and afterwards the press, and take all the trouble of the publication, and all the glory! and then get me money enough to procure 2 or 3 assistants (Mico is dead, but there's an able young man in his place) I'll undertake the business. And I see enough here, besides Florence and Venice (the books of cardinal Bessarion) and Paris, to set Plutarch right in innumerable places." (pp. 656—7) "I have had some reflexions about Plutarch, that I shall make you acquainted with next post; and if you should have occasion to write or speak about that matter, I beg you'd forbear till you get my next letter."

The next letter (Rome 24 Apr. 1726, pp. 659, 660) "I . . . have spent my time at home . . . reading now and then one of Plutarch's moral treatises . . . But as to the business of undertaking an edition of him, I have laid aside all thoughts of that . . . What if I should want health after I have taken the money and am engaged and obliged to go on? Besides, I don't care to stay from home so long a time as is required; . . . but most of all, I am not fit for it: I have not read enough. How many of the Greek and Latin authors are there that I have scarce ever tasted!"

Bentley boasts (Christmas Day 1712, *Corresp.* 449): "And the publick press (which had lately been projected and founded solely by myself, and purchased and endowed solely by my

friends) was full of learned books in several languages and sciences."

It is therefore probable that Du Soul was encouraged by Bentley to print his specimen of Lucian at our press in Febr. 1708; that when Bryan died (in the very year that Thos. Bentley gave up the thought of editing Plutarch), Bentley suggested Du Soul's name to Tonson, as before perhaps to the Wetsteins for their projected Lucian. Indeed the fame of Bentley may well have drawn the learned refugee to Cambridge in 1700, where he saw the opossum.

Reitz in his preface to Lucian, dated Utrecht 1 March 1743, I p. II cum spectatae diligentiae doctrinaeque uir, MOSES DU SOUL (sive SOLANUS, ut ipse se scribere amat) satis diu in emaculando Luciano occupatus notas suas ad eum plane descriptas ac praelo paratas reliquisset, vel hoc nomine egregie commendabilem futuram cernebam editionem, si solis horum duorum, GESNERI ac SOLANI accessionibus ditatam emitterem.

ibid. p. III dein plurimum omnium usus sum *Juntina* Graeca, Venetiis anno 1535 excusa... In huius margine *Solanus* omnes a se collectas uarietates tam codicum mss. quam decem et nonnumquam plurium editionum, diligenter et nitide consignauerat; sed caractere adeo minuto, ut aciem oculorum diutius inhaerentis lectoris obtunderent. quibus autem codicibus ille usus fuerit, et quo scribendi compendio iidem aequae ac editiones in notis et uariantibus lectionibus adlegatae designentur, ad finem huius praefationis indicabimus.

ibid. p. VI uariantium autem lectionum sat amplum catalogum ab *Solano* in ed. Juntinam, ut supra monui, collatum, totum describere lectorique exhibere, interdum et alias ab eo omissas addere, non sum ueritus, ut adpareret quanta diligentia editionum codicumque collatio sit instituta.

ibid. p. X scholiasten uero totum manu describere sumus coacti, quia plurima erant emendanda,...plurima longe alio ordine collocanda et integra scholia persaepe ad alios dialogos

referenda, ad quod tamen doct. *Solani* diligentia uiam iam munierat, singula numeris distinguendo, et uarias lectt. ex codd. Anglicis adiciendo, atque utrumque *Vossianum* codicem conferendo.

ibid. p. XI Luciani uitam promiserat *Solanus*; nec dubitabam quin eam iam confecerit, cum ab anno 1720 quo se suas ad Lucianum notas typographo tradidisse scriptum reliquit, uel saltem ab anno 1723, quo additamenta etiam quibus eas auxit, ad finem se perduxisse testatur, satis spatii ad id praestandum habuisse uidetur; decennio enim et amplius superuixit. Thus we learn that he was living after 1733. I have not found the precise year of his death, but Gesner says that he procured from the Leipzig spring fair 1737 his corrected copy of the Latin version. His death therefore must fall between 1733 and 1737.

ibid. p. XIII Mosis Solani syllabus notarum.

ibid. p. XIV M. du Soul, sive Solani, monita. Editiones Luciani, quibus usi sumus. Codices collati. p. XV M. du Soul transcribed various readings from the codex Jensonianus in 1707. pp. XV—XVII the codex Marcianus (in 1722 in the possession of "uir egregius Lucianique studiosissimus Bridges J. C. Anglus") was partly collated by du Soul, and some new scholia copied "praeloque cum reliquis parata 1707."

Letter from J. M. Gesner to J. F. Reitz, Göttingen 18 Febr. 1743 (ibid. p. XXIII XXIV; I have found myself anticipated in the notes, e.g. of Elsner) tum frequentissime in his, quae uir doctissimus MOSES SOLANUS commentatus est. huius uiri obseruata adeo saepe cum nostris congruere deprehendi, postquam emendata ab illo interpolataque Luciani interpretatio ad me missa est, ut interdum optauerim pudoris mei causa, ne factum esset, quod optimo consilio factum noui, ut illud monumentum diligentiae uiri clari ad me mitteretur. It was from the Leipzig fair held in the spring of 1737 that an imperfect copy of the Latin Lucian (probably of Frankf. 1538 fol.) came into Gesner's hands. Illud porro exemplum manu *Solani* eleganti et nitidula, quae animum etiam bene compositum indicet, correctum et

interpolatum est eo haud dubie consilio, uti traderetur typographis....annotationis plane nihil, litteram nullam Graecam, libro huic adscripsit uir doctissimus: quem librum in bibliotheca academiae nostrae publica reposui, ut si qui uel iam uiuentes uel posterius adeo requirere uelint, in quantum mihi cum Solano conueniat, suis possint oculis fidem habere. qui hoc agere uolent, illi collatis nostris annotationibus intellegent facile, non minus saepe nobis conuenire in eis libellis, quorum ego interpretationem a Solano correctam oculis usurpare non potui, quam in aliis: conuenire nobis saepe in annotationibus, quarum ego plane nullam umquam uidi ante, quam typis expressae ad me uenirent: conuenire in illa encomii Demosthenis restitutione, de qua T. III p. 511 seq. conuenire tamen ita, ut appareat, duo esse, qui unum egerint, ambo familiares Luciano, ambo non nouicios in hoc genere studiorum, sed qui suam sibi uiam teneant, non opus habeant semper alios respicere. Gesner could not pay a higher compliment to the independence of Du Soul's work, than by thus placing it on a level with his own.

In February 1708 (I suppose 170 $\frac{1}{2}$) Du Soul printed at Cambridge a specimen of his Lucian. There is no copy in the public library; possibly no copy has survived. On the Hermotimus c. 27 (I 767 a) he records his conjecture ἡ δέον for ἡδέως and adds: hanc emendationem inter insigniores in specimine quod anno 1708 a me Cantabrigiae editum est, locum suum tueri uolui. On the Timon c. 26 (I 139) is another emendation from the specimen. On the Hermotimus c. 77 he points out that Le Clerc in his Menander, published September 1709, had filched a third emendation: cum ego iam in specimine meo, quod prodiit mense Februar. anni 1708, publici iuris feceram.

He hoped to publish an edition of Lucian, for which he was preparing a life of the author (pro mercede cond. I 1705 b): sed haec cum ceteris eodem spectantibus, fusius explicata dabuntur a me, Deo fauente, in ea quam paro, *Luciani uita*, huic editioni praemittenda. cf. on bis acc. 27 (II 824 b).

Gesner on Demosth. encom. 29 (III 512 a) says that when he communicated to Hemsterhuis an emendation, "Is, sibi quoque eam in mentem uenisse, mihi respondit, et a *Mose du Soul* etiam sibi plures ante annos demonstratam, docuit." ibid. 33 (III 514 b) a lacuna pointed out by du Soul. innotuisse tamen et uiro docto in Germania ex cl. *Hemsterhusio* audio an. 1723.

In the latter part of 1722 and in 1723 we find Du Soul at the Hague. He may have gone to Holland to negotiate with the Wetsteins. Luc. Hippias 6 (III 72 a, Turkish baths) non iacebant tantum nudi, sed et uolutabantur. nunc etiam in oriente a balnei ministro artus fricantur, extenduntur, premuntur et quassantur. quod ab eruditiss. Syro Theochari Dadichi nunc Hagae comitum (ann. MDCCXXII desinente) sitim orbis uisendi explente; a quo uiro aliquando, si Deus uitam et post labores tot itinerum studiorumque exantlatos requiem concesserit, magna orbi litterato et curiosa expectanda sunt, quibus et ueterum scriptis lux magna accedat, et artes historiaeque recentiorum saeculorum excolantur. Macrob. 27 (III 228 a) addi meretur qui hoc ipso mense Febr. (dum notas hasce tandem aliquando edendas relego) decessit an. MDCCXXIII *Joh. Ernestus Scholts* eques, qui olim sub Carolo Gustavo Sueciae rege inter eius praetorianos militauit. is in Saxonia natus Martii XII anni 1608, Risuici prope Hagam comitum degens, ad extremum usque prospera usus ualetudine, die quaque dominica pedes Hagam, ubi haec scribo, ueniebat et remeabat, ut sacris interesset more Lutheri reformatorum. ultra L annos rude donatus et stipendio publico gaudens ad CXIV usque annum uitam produxit.

Du Soul cites unedited mss. of Jo. Masson e.g. eunuch. 3 (II 353b), 7. (357 a).

We find frequent notices of contemporary scholars. Thus Demosth. enc. 33 f. (III. 516) resque ipsa restitutionem hanc abunde confirmabit, quam ante annos uiginti a me repertam

non meis tantum libris adscripseram, sed in codice uiri doctiss. *Joh. Laughton* bibliothecae Cantabrigiensi praefecti, amicitiae causa: non tanto post interuallo in lucem proditurum mea opera Lucianum putans, annotaueram his verbis...

James Upton hist. conscr. 1 (II 3a) 4 (ib 6 a) locum hunc, qui me diu torserat, aperuit tandem uir doctus *Jac. Uptonus*, ostenso, ad quem alludit, Homeri loco.

Richard Mead ib. 15 (II 22 b) res obseruata medico summo huius aetatis *Richardo Mead*...uide librum quem Anglice *de peste* edidit, Latine etiam in exterorum gratiam in Hollandia excusam.

William Cave Philopatris 23 (III 611 b) uir multis nominibus reuerendus.

William Sherlock Jup. trag. 50 (II 697 b) qui rem pertractatam uidere uolent, Sherlockii *de providentia* librum adeant, qui Anglico idiomate conscriptus Gallice etiam nuper uersus in omnium manibus uersari meretur. Possibly the French version was from Du Soul's pen.

John Asgill, not named, but plainly described (ib. 698) where Du Soul speaks of scoffers of the day. sic...reper-tus nuper apud Anglos nostros qui immortalitatem animarum totamque adeo religionem Christianam nefario uolumine, dum fingit se morti non obnoxium in caelum translatum iri, scommatis perpetuis ab ouo, ut aiunt, usque ad mala rideret: homo in Hibernia primum, deinde et in Anglia tandem notatus.

Ez. Spanheim de sacrif. 11 (I 534 a) uir harum et omnium bonarum artium indagator sagax.

ib. 14 (537 b) uir multis de causis nobilissimus.

Graevius pro lapsu inter salut. 13 (I 736 a) ab eruditissimo Graevio, quo nemo harum rerum peritior, dum in uiuis erat, hunc locum doleo non fuisse illustratum.

J. de la Faye Timon 1 (I 99 b) annotatum margini Timonis a *Tan. Fabro* editi penes doctiss. uirum *Joh. de la Faye*.

William Lloyd hist. conser. 35 (II 47 b) in Olympionicarum [catalogo] ab erudito *Gul. Lloyd* (eruditissimi Wigorniensis episcopi filio) edito nuper cum haec scriberem. uer. hist. II 22 (ib. 119 b) consule *Lloyd*, honoratissimi praesulis Wigorniensis doctissimum et ipsum filium. Du Soul was personally acquainted with the bishop, as we learn from conuiu. 16 (III 430) schol. *προπίνω σοι Μαρίας τῆς θεοτόκου*: legi autem, si usquam, meretur scholium quod ad haec uerba monachus haud dubie uinosus adscripsit, unde disces ab iis *sanitatem beatæ uirginis strenue potari solitam*. quid non ebrietas designat? quot bibendi incitamenta quaeruntur! salus praesentium, absentium amicorum, amicarum, patronorum, et apud nos Anglos regum ecclesiaeque ipsius. *pudet haec opprobria nobis* cet. hoc scholium cum olim praesuli uenerando et eruditione omnibusque probis artibus illustri Loidio Wigorniensis episcopo ostenderem, 'Nos ergo' inquit 'non primi eam insaniam insanimus! et imprudentes exempla sequimur hominum saeculorumque uilissimorum!'

Du Soul several times cites his own translation made in conjunction with Brutel de la Rivière (Amst. 1722 5 vols. 12mo. ib. 1726 7 vols.) of a book which has passed through very many editions, even in this century.

Luc. Herodot. 1 (I 833 a) quae etiam nobilissimi scriptoris *Humphredi Prideaux* sententia est; quem uide p. I l. VI, Gallicae autem a me factae uersionis T II p. 206. cf. Alexand. 44 (II 250 b). de morte Peregr. 21 (III 351 b) at the end of a note: consule eruditissimi *H. Prideaux*, quae post haec scripta prodiit, historiam toto iam Christiano orbe notissimam.

Thomas Irson, the Maskelyne of Charles the second's time. Alexand. 26 (II 234 a description of the oracle of Alexander) simili artificio callidus Anglus, quem ipsi uidimus, *Thomas Irsonus*, caput ligneum loquax concinnarat, quo, ut ipse narrabat, tota Caroli II aula et rex ipse uiso obstupuit. immurmurabat spectatorum aliquis ori istius capitis hianti uerba, quae

in buccam uenerant, quacumque libitum erat lingua; quo facto mox responsum eadem lingua et ad rem accommodatissimum ex ligneo capite reddebatur. percrebuerat iam per totam urbem monstri fama. frequentes ad tantae rei miraculum, data pecunia quisque, aduolant. nec dubium quin breui de rebus arcanis futurisque tam doctum caput consulendum fuerit (quidni enim lignum loquax et futura et arcana pandere ualeat?) cum subito adulescens, ex nobilium famulitio, qui tum spectabant, in proxime adiacens cubiculum irrepens hominem os tubo admouentem et clamantem conspicit; neque ullis muneribus et promissis deterri potest, quin tantum arcanum diuulgaret. innotuit itaque fraus et patuit sacerdotem pontificium, multarum linguarum hominem, capiti oracula, auditis per tubum e conclauis proximo quaestionibus, dictasse et re uera inspirasse. rem totam *Irsonus* ipse ante aliquot annos uiro nobili, me audiente, narrabat.

Once or twice Du Soul has matter of interest to the English lexicographer; he often takes occasion to call himself an Englishman. hist. conscr. 41 (II 54 b) *διανοίας ἀκριβοῦς καὶ ἀδεκάστου* Angli aptissime per *unbiassed* exprimunt.

Bryan's Plutarch IV 564 b *ἐτερόφθαλμος* non est *unoculus*, sed qui *uarios oculos habet*, aut coloris alter ab altero diuersi.... Galli *cheval vairon* eiusmodi equum uocant, Angli *wall-eyed*.

I do not know who is meant Hermotim. 80 (I 824 b) non possum hic cum uiro eximio et de me optime merito sentire, qui haec de alio philosopho dicta uult.

Du Soul often speaks of curiosities, of nature or art, which he has seen. Thus of the sand-glass in pulpits de merc. cond. 35 (I 694 b) solebant enim ea aetate rhetores orationum suarum tempus clepsydris metiri, quod etiamnum a multis sacris contionatoribus apud uarias Europae gentes obseruatur, eo tamen discrimine, quod nostrae *harena*, ueterum clepsydrae (quod et etymon docet) *aqua* tempus metiebantur.

The *Spectator* some where denounces the employment, by women of fashion, of male ladies-maids. cf. ibid. 32 f. (I 690 b) τῷ τῆς δεσποίνης κομμωτῇ. subit hic mirari, quod apud nostrum feminae, non feminarum ad eam rem, sed uirorum opera iam tum utebantur; quod ante quam hic loci animaduertissem, Gallicis solis nostris nobilibus feminis, post *Christinae* Suecorum reginae apud eas aduentum, saeculi nostri summo probro, factitatum putabam, ut uiris iam, non ornatricibus, ut saltem ea parte modestiae consulerent, uterentur.

ibid. 10 (I 665 a) Swiss porters. ut nempe reges magnatesque hodierni nostri *Heluetios* suis ianuis praeficiunt, ita et Romani usi fuerunt Syris.

de gymn. 27 (II 909 a) ridet Constantinus lexicographus, uir de Graecis litteris optime meritus, eos qui usum globorum plumbeorum in saltu aliquem esse putant (u. ἀλτῆρες). hinc ubicumque occurrunt ἀλτῆρες usum illum praestantes, rescribere iubet ἀλκτῆρες, quo pertica designatur, qua saltus haud dubie iuuatur. hanc uiri docti rationem uel unicus hic Luciani locus subuertit. adde quod nostra quoque aetate quibusdam in locis mos ille antiquus obtinet. uidi ipse in Scotia saltu certaturos, aut globulis ferreis in eam rem utentes, aut, si ad manum non essent, lapides aequi quam maxime ponderis conquirentes. hos aliquando cum uibrassent, in ipsa iam saltus micatione post tergum reiciebant, ne se scilicet degrauarent; eisque impetum iuuari, usu se didicisse profitebantur.

Hippias 2 (III 67 b) exstare Venetiis audiui instrumentum ustorium ad quingentos usque passus uim suam exerens.

Philops. 17 (III 45 a) an iron ring, made of the nails of a cross, used as a charm. caue et hoc ad Christianos referas, nondum eo fatuitatis dicam an superstitionis deuolutos, ut ligno uirtutem tribuerent. circulatores isti nempe faciebant quod hodieque fere a stultis hominibus fit, qui suspensorum adipi, et cui non rei, uirtutem magicam affingunt. pudet in tanta Christianismi luce huiusmodi etiamnum superstitiones, ab ipsis

derisas ethnicis, apud ipsos reformatos multis in locis conspici, quos Romanensibus relinqui par erat, inter quos tot monachis aliisque quaestui sunt.

muscae encom. 6 fin. (III 96 a) a fly long survives decapitation. papilionem memini capite amputato ultra septiduum uitae signa dedisse, motis, cum tangebatur, alis pedibusque humo firmiter adhaerentem. adde quae Aelianus de testudinis marinae capite similia profert IV 28.

macrob. 5 (III 211 a) of the Chinese *ὑδροποτεῖν γάρ φασι τὸ ἔθνος τοῦτο σύμπαν*. theae usum huic genti hodieque familiarem respexisse uidetur; quamuis non inuitus concesserim, hac uoce uulgo abstinentiam a uino tantum designari. Tea was then known as China tea.

Saturnal. 8 (III 391) staking entire talents at the gambling-table. non igitur propria haec aetatis nostrae dementia. at rari olim aleatores, nunc omnes ferme eodem morbo laboramus; eoque res tandem deuenit, ut aleatoris consiliis regno uno decepto, in alias etiam nationes pestis ista grassata, multos exitio, omnes damno affecerit. rem tango posteris vix credibilem historicumque poscentem Thucydidi parem, ut qua ille peritia pestem Atheniensium descripsit; hic furorem epidemicum, qui in Europae praecipuas ingenio opibusque gentes nuper tantis cum cladibus per aliquot menses incubuit, mentesque lucri cupiditate ita occaecauit, ut, dum singuli diuitias summas ex nihilo prodituras expectant, id quod erat opum misere perdiderunt, ab aleatore similibusque eius perditis hominibus miserum in modum emuncti, immo exenterati, ob oculos legentium, apud quos uix fidem inueniet, ponat. The arch-gambler is of course John Law.

de Syria dea 59 (III 489 a) *στίζονται* immo etiamnum mos ille ridiculus in illis regionibus obtinet. omnes enim, qui terram sanctam inuisunt Christiani, stigmata referunt, hic seruatoris in cruce pendentis, ille sepulchri, alius alterius alicuius rei itidem sacrae. quae superstitio non ridicula tantum, sed cum summo dolore coniuncta, quandoque etiam non sine ipsius uitae

periculo est. in balneis itaque aliquando uideas, quorum corpora tota sacris illis figuris cooperta sunt; quoque plura stigmata gerunt, tanto sanctiores habentur: sancto enim titulo omnes decorant qui uel tantillum ridiculo isto sacro initiati sunt; sed longe facilius corpori notae inuruntur, quam, quae uera sanctitas est, animi maculae abstergantur.

XII. ON A CAMEO REPRESENTING JUPITER DODONAEUS.

Communicated by the Rev. C. W. KING, M.A.

[May 22, 1882.]

M. FEUARDENT has at present (May, 1882) in his possession a cameo in agate-onyx of the exceptional dimensions of nearly 8×7 in., an oval in shape. The subject, in the style of the Antonine period, is a bust of Jupiter in front face, and very flat relief owing to the insufficient thickness of the layer of *cacholong* (white opaque calcedony) available for that purpose. The head is encircled with a wreath of *chestnut-leaves*, to declare his character of Dodonaeus (that tree being the real $\delta\rho\upsilon\varsigma$ of the most ancient of Grecian shrines), in contradistinction to the *laurel-crown* of the Olympian Jupiter. A portion of the god's other distinctive mark, the aegis, is seen covering the right shoulder.

In point of execution the relief neither surpasses nor falls below the usual mediocrity of its school; what is most to be commended in it being the treatment of the flowing and massy curls appropriated to that deity: which have all the softness and freedom of the same modelled in wax.

It is so rare, in Roman art, to find important camei dedicated to merely *ideal* representations, works involving such

expense of time and labour, being almost invariably devoted to the glory of the reigning emperor, by deifying him in his portrait (of which numerous examples are still extant), that the calm majesty of Antoninus Pius may possibly be adumbrated in the features of the 'sire of gods and men'; and the designer, "cingens civili tempora quercû," in virtue of the particular type selected, ingeniously gave more point to the intended compliment.

The field of this cameo has been repolished to a degree of evenness unknown in the ancient *technique*; its margin likewise has been reduced to a regular oval for convenience of mounting in a metal frame (probably for insertion in the panel of a cabinet, the usual method of displaying objects of the sort after the revival of Art); but the face itself has fortunately escaped all such modern *improvement*. Taking into account the extraordinary magnitude of the slab of onyx, and its enormous value in antiquity, this cameo must be regarded as a specimen of much importance in its own department. But a very interesting point connected with it is the illustration its history affords of the singular depression in the selling-price of gems, which followed almost without gradation upon the frantic values they had commanded down to the second quarter of the present century: a circumstance to which I have, elsewhere¹, called the student's attention. In the year 1844, it was bought by the late Lord Northwick at the Thomas sale for the ridiculous sum of *six guineas*: but at the present moment it serves to shew that the thermometer of dilettanteship is fast rising to its former fever-heat, since the last owner (a Parisian) purchased it, a few years back, at nearly the same price at which it comes again into the market, namely four hundred pounds!

¹ See the Author's *Handbook of Engraved Gems*, s. v. History of Engraving.

