

89 A

Yorkshire Philosophical Society.

ANNUAL REPORT

FOR

MDCCCLXX.



S. 403, A. 5.

ANNUAL REPORT
OF THE COUNCIL
OF THE
YORKSHIRE
PHILOSOPHICAL SOCIETY

FOR

MDCCCLXX.

PRESENTED TO THE ANNUAL MEETING,

FEBRUARY 7th, 1871.



YORK:

J. SOTHERAN, BOOKSELLER, CONEYSTREET.

1871.

TRUSTEE
OF
THE YORKSHIRE MUSEUM,

APPOINTED BY ROYAL GRANT.

REV. WILLIAM VERNON HARCOURT, F. R. S.

PATRONESSES

OF THE

Yorkshire Philosophical Society.

HER MAJESTY THE QUEEN.

H. R. H. THE PRINCESS OF WALES.

PATRONS.

H. R. H. THE PRINCE OF WALES.

THE ARCHBISHOP OF YORK.

OFFICERS OF THE SOCIETY, 1870.

PRESIDENT :

HIS GRACE THE ARCHBISHOP OF YORK.

VICE-PRESIDENTS :

THE EARL OF ZETLAND, K. T.

THE LORD LONDESBOROUGH.

THE HON. & VERY REV. THE DEAN OF YORK.

W. H. RUDSTON READ, F. L. S.

JOHN PHILLIPS, F. R. S.

THE REV. W. V. HARCOURT, F. R. S.

THE REV. CANON HEY, M. A.

THOMAS ALLIS, F. L. S.

THE REV. JOHN KENRICK, M. A., F. S. A.

ROBERT DAVIES, F. S. A.

TREASURER :

WILLIAM GRAY, F. R. A. S., F. G. S.

COUNCIL :

Elected 1869. THE HON. PAYAN DAWNAY.

JOHN FORD.

W. C. ANDERSON.

J. H. GIBSON, M. D.

Elected 1870. W. MATTERSON, M. D.

ALDERMAN SWAINE.

J. BACKHOUSE.

GEORGE OLDFIELD.

Elected 1871. W. PROCTER, M. D., F. C. S.

S. W. NORTH, F. G. S.

THE SHERIFF OF YORK (J. L. FOSTER).

JOHN ROPER.

HON. SECRETARY :

T. S. NOBLE, F. R. A. S.

“
”

CURATORS :

GEOLOGY AND MINERALOGY .	WM. PROCTER, M. D., F. C. S.
COMPARATIVE ANATOMY . .	THOMAS ALLIS, F. L. S.
BRITISH ORNITHOLOGY . .	W. H. RUDSTON READ, F. L. S.
INSECTS AND CRUSTACEA . .	REV. CANON HEY, M. A.
ETHNOGRAPHICAL COLLECTION	S. W. NORTH, F. G. S.
ANTIQUARIAN DEPARTMENT .	{ REV. JOHN KENRICK, M. A.
	{ WM. PROCTER, M. D., F. C. S.
LIBRARY	REV. G. V. SMITH, B. A.
BOTANY	WILLIAM MATTERSON, M. D.
CONCHOLOGY	S. W. NORTH, F. G. S.
OBSERVATORY & METEOROLOGY,	{ REV. W. V. HARCOURT, F. R. S.
<i>under the care of a Committee</i>	{ W. GRAY, F. R. A. S., F. G. S.
<i>consisting of</i>	{ JOHN FORD.
	{ REV. CANON HEY, M. A.
	{ T. S. NOBLE, F. R. A. S.

SUBCURATOR OF THE MUSEUM :

HENRY BAINES.

REPORT OF THE COUNCIL

OF THE

YORKSHIRE PHILOSOPHICAL SOCIETY,

FEB. 7TH, 1871.

THE Council of the Yorkshire Philosophical Society in presenting their Annual Report for the year 1870, are happy to announce to the Members of the Society the present state of the progress of the Society, which they hope will be found to be the result of an anxious endeavour to further the special scientific objects for which the Society was founded, whilst promoting in respect of its Finances a judicious economy.

For the past five years the Treasurer's Balance Sheet, appended to each Annual Report, has disclosed the fact that the debt due to the Treasurer had increased from £272 in the year 1865 to the sum of £352 in the year 1869; whilst in the latter year the total expenditure in respect of Salaries paid to the Officers of the Society was below the average by a sum of £100.

At the commencement of the past year the Council appointed a Committee to consider the best means of economising the income of the Society.

In their Report to the Council the Committee drew special attention to the fact that the expenses in respect of wages to gardeners and labourers, and of plants, had increased from £154 in the year 1859, to the sum of £270 in the year 1869, whilst from the special circumstances of the case increasing claims were made upon the income of the Society.

Mr. Baines, in the previous year, from old age and incapacity of body, had declared himself unequal to the duties of superintending work done in the grounds of the Society, and the sole charge of this department was committed to Mr. Fielden, the head gardener.

The Committee also reported that James Davison, another of the gardeners who had been in the employ of the Society for upwards of 30 years, and who has since been afflicted by paralysis, was unable to attend to out-door work, and the Council subsequently allowed him a pension of 10s. a week, to preserve him from want in his old age, and as a recognition of long and faithful services. At the Council Meeting in October last, Fielden, the head gardener, whose wages had hitherto been one guinea a-week, asked for an advance of 10s. a-week, in consequence of increased duties.

The whole question of the Financial affairs of the Society was then carefully considered by the Council, and it was resolved that, during the continuance of Baines' salary and the payment of Davison's pension, retrenchment in some item of expenditure was necessary, in order to avoid increase of debt.

The Council felt it would be impossible to diminish the attractions incident to the ornamentation and floral display in the Grounds of the Society during the summer and autumn months, as these grounds form the chief attraction to great numbers of our Subscribers, and the Council are inclined to recommend an increase of expenditure under this head, as evidenced to be desirable by the much improved appearance of the grounds during the past year.

The Council found, however, without in any way deteriorating from the efficiency of the Conservatories, these might be made far more useful in promoting the decoration of the grounds by being used for the propagation of that class of plants only which are sufficiently hardy to be planted out in the open air.

By the discontinuance of the Tropical Plants a very considerable saving would also be effected in the annual expenditure. This Mr. Baines estimated at not less than £100 a-year.

Under these circumstances the Council resolved to effect a sale of the Tropical Plants, and for the present to devote the Conservatories to the rearing of the particular class of plants stated.

By this means the Council have been enabled to allow Mr. Baines to retain his present salary, after many years of faithful services, dating from a period shortly subsequent to the formation of the Society, whilst securing increased attention to the grounds of the Museum, a result which the Council hope the Members of the Society will approve, at the sacrifice of a small collection of plants, of some beauty, but of little scientific value.

The accounts of the Society for the year 1870 disclose a favourable state of the finances.

The balance due to the Treasurer has been reduced from £350 5s. 2d., as shown in the accounts for 1869, to £122 1s. 6d. in the year past; but when it is considered that this result is obtained by the saving of £100 in respect of the Keeper's salary, and that an excess of income of £57 1s. 3d. arises from the sale of the Tropical Plants, it will at once be seen that this diminution arises chiefly from the causes above stated.

The accounts for the year in other respects show a not unfavourable condition of affairs.

The Gate Receipts for the past year show a sum of £242 against £225 for the previous year; the number of strangers visiting the Grounds having been far above the average; the Continental War, no doubt, having induced a great number of persons to travel over their native land, who would otherwise have spent their holiday on the Continent.

In other respects the variable income of the Society is rather above than below the average.

The gain to the Society, by the admission of New Members, is 17, against 6 lost to the Society during the past year by death or resignation. Eight Lady Subscribers were admitted during the past year, being a gain of 4 in respect of the year.

The Treasurer's Account will be appended to this Report.

ANTIQUARIAN DEPARTMENT.—The past year has not added much to the Antiquarian contents of the Museum. Excavations carried on within and without Micklegate Bar, on the line of the Roman road to Calcaria, have produced some remains of the Roman period, but no sculptured or inscribed stone. In another part of York, however, a very remarkable inscription has been brought to light. In the process of renewing the Church of St. Mary, Castlegate, the original dedication stone was discovered. The inscription is partly in Saxon, partly in Latin. It has suffered from time, and from the use to which it had been applied by former builders of the Church, so that some words are obliterated and others imperfect, enough however remains to show that the Church had been erected in the name of our Lord and Saviour Jesus Christ, St. Mary, St. Cuthbert, St. Martin, and All Saints, by three Saxon proprietors. The date of the consecration is imperfect, from the fracture of the stone; and the last line can only be restored by conjecture. It has been the subject of discussion by Archdeacon Jones, the Bishop of Lincoln, the Rev. Canon Walker, and the Rev. D. H. Haigh. A paper by the latter was read at the December meeting of the Society. A small portion of a Roman tessellated pavement was found under a buttress in the same church, but unfortunately has not been preserved. It is expected that extensive excavations will be undertaken by the North Eastern Railway Company, preparatory to the erection of a new station. The ground marked out for this purpose may be expected to contain important remains of antiquity, and the Council trust that the Directors will kindly take measures to secure their being placed in their only proper repository, the Museum of the Yorkshire Philosophical Society.

A portion of a sculptured Saxon Cross has been presented to the Museum by Edmund Waterton, Esq., of Walton Hall, through the kind offices of Fairless Barber, Esq., and the Rev. Canon Raine.

An important addition has been made to the Antiquarian department of the Library in the volume of the *Inscriptiones Latinae*, containing those found in Spain. This country has furnished a large number of Roman inscriptions, but forgeries

abound * in the older collections, and they required the careful sifting which in this volume they have received from Dr. Hübner.

In the Report for 1831 Mr. Wellbeloved, as Curator of Antiquities, called attention to the desirableness of endeavouring to obtain documents and information illustrating the antiquities and topography of Yorkshire as materials for a future county history. In pursuance of this suggestion a very full list of queries, drawn up by the late Joseph Hunter, F.S.A., was circulated throughout the county, but the answers to them were so few that the design was necessarily abandoned. The Council have noticed with much satisfaction its resumption by the Yorkshire Archæological Association, which has its local seat at Huddersfield, and which has already issued four numbers of its Journal, containing valuable contributions to the topography and archæology of the county.

NATURAL HISTORY.—The Curator of the ORNITHOLOGICAL DEPARTMENT reports that according to his suggestion last year, he arranged the Strickland Collection of British Birds over the Saurian Cases, strengthened the iron railing of that gallery, put blinds to keep out the rays of the summer sun, and coloured the lower portion of that room, all which expense was defrayed by the liberality of Mrs. Trevenan, the donor of this magnificent collection. This alteration has met with the approval of our kind benefactress, and has been otherwise received with universal satisfaction.

INSECTS AND CRUSTACEA.—In the ENTOMOLOGICAL DEPARTMENT of the Museum the work begun last year has been carried forward and completed.

A general Collection, exhibiting the most remarkable forms of various orders, and consisting chiefly of foreign insects, has been displayed in the Gallery of one of the Geological Rooms, the cases being protected by lids from the injurious action of light. For the names of many of these insects, and also for many beautiful examples of Exotic Lepidoptera, the Society is

* “Omnino omnibus in Hispaniensibus cautissime est versandum.”—Orelli 1. p. 40.

indebted to the kindness of one of its Honorary Members, W. C. Hewitson, Esq., F. L. S.

The great event of the year, however, in this department is the acquisition of the Cabinet of British Lepidoptera, formed by the late lamented T. H. Allis, Esq., and most generously presented to the Society by his father, our old and valued friend Thomas Allis, Esq. It too often happens that collections like this are broken up and dispersed after the death of those who have formed them, and that the results of much labour are to a great extent lost. This noble collection, standing in the first rank among British collections, is happily preserved from this calamity, and will be always accessible for the purposes of scientific research. It contains about 20,000 specimens and species, the series of examples of each species being carefully selected so as to exhibit all the variations to which it is liable, and the specimens being remarkable for their perfect condition.

The drawers in the cabinets of the Society, which were formerly occupied by the Lepidoptera, may now be made available for the other orders of Insects. A re-arrangement of the Coleoptera according to modern views is now in progress, and it is to be hoped that other orders may in their turn be brought up to the present state of science.

CONCHOLOGY.—The Curator of Conchology reports the acquisition of a large and valuable collection of foreign shells, bequeathed to the Society by the will of the late Mrs. Penelope Osborne, of *Stonefall* near Harrogate. The collection contains more than a thousand specimens, the greater part of which are in excellent preservation. It is proposed, shortly, to incorporate the collection with that previously in the possession of the Society, by this means many of the species will be illustrated by larger and more perfect series, and some important addition will be made to the species at present exhibited in the cabinets of the Society.

METEOROLOGICAL REPORT FOR 1870.—Though the year of 1870 has been one of remarkable anomalies in Meteorological Phenomena, the results are almost the exact means of the observations of thirty years, in regard to atmospheric pressure, temperature, and rain-fall.

TEMPERATURE.—From April to August inclusive, the temperature of each month was above a mean, amounting in a mean of the five months to an excess of 3° . On the other hand, the temperature of the last four months of the year was $3\frac{7}{10}^{\circ}$ below a mean of thirty years. The mean for the year has been 48° , the average mean temperature of York, from observations commenced in the year 1800 by Jonathan Gray, Esq.;* and continued with but little interruption to the present time. The tabulated results, printed annually in the Report of the Council, begin in the year 1841. The last severe winter noted in the reports was that of 1860-61. On December 25th of that winter the thermometer at York registered four degrees below Zero, and the mean of that month was $4\frac{5}{10}$ below a mean of thirty years. The range of temperature at York in the year 1870 was 71° , that of 1860 was 77° .

RAIN-FALL.—The Rain-fall for York is $24\frac{4}{10}$ inches, nearly the exact mean of thirty years; twenty-four inches having been the mean result of the observations of the late Jonathan Gray, Esq., as well as those of Professor Phillips, and of the observations continued by the Society. At the end of September, in 1870, there was a deficiency in the rain-fall of $4\frac{4}{10}$ inches. The amount for October was $6\frac{1}{10}$ inches, unprecedented in the Register of York, being an excess of $3\frac{7}{10}$ inches. The surplus for December was $1\frac{5}{10}$ inch.

The range of the amount of rain-fall in York is 18 inches, from a maximum in 1848, of 36 inches to a minimum in 1850 of 18 inches. The mean rain-fall of the last ten years was 23·93 inches, from a maximum of 27·9 in 1869 to a minimum of 20·2 inches in 1861.

* See Rivers, Mountains, &c., of Yorkshire, by Prof. Phillips, page 144.

RAIN FALL, 1870.

	Malton.	Flaxton.	Cherry Hill.	Bootham.	Ackworth.	Sheffield.	Settle.
Jan.	1.88	1.49	1.50	1.68	1.42	2.82	3.98
Feb.	2.33	2.13	1.57	1.92	1.47	1.85	2.05
Mar.	1.60	1.12	1.62	1.80	1.89	2.19	2.43
April	0.67	0.75	0.58	0.63	0.42	0.66	1.24
May	1.13	1.28	1.06	1.13	0.75	0.94	1.55
June	2.60	2.85	2.70	2.78	1.73	1.27	1.49
July	0.27	0.52	0.51	0.51	0.68	0.97	1.87
Aug.	1.93	1.63	1.62	1.58	1.33	0.86	4.10
Sept.	1.10	1.22	1.11	1.18	0.93	1.63	4.74
Oct.	5.98	5.60	5.39	6.10	5.53	7.87	11.27
Nov.	2.82	2.66	1.89	1.92	1.75	1.92	2.76
Dec.	4.01	2.85	3.41	3.17	2.93	3.03	3.85
Totals	26.32	24.10	22.96	24.40	20.83	26.01	41.33

ATMOSPHERIC PRESSURE.—The mean for the year corrected to 32° was 29.823 inches—the range 2.08 inches, from a minimum of 28.57 January 10, to a maximum of 30.65 October 2.

WIND.†—The prevailing winds of the year were W. and S. W. 130 days.

OTHER PHENOMENA.—Displays of Aurora were observed February 25, March 22, 24, and 31, May 8, September 24 and 25, and on October 25 and 26. These last were displays of great extent and splendour. Thunder and lightning have been of rare occurrence. On January 20 an occurrence of Paraselene was observed.

† The daily observations on the direction of the Wind, are imperfect and uncertain. In the Report of the Council in February, 1852, occurs the following announcement:—“Preparation is made for mounting a self registering Anemometer and Rain Gauge, in a separate building, with clock movement.” This requisite addition to the Meteorological Apparatus has not yet been supplied.

METEOROLOGICAL REGISTER, YORK, 1870.

	BAROMETER.			RAIN.		THERMOMETER.				
	Highest.	Lowest.	Mean.	Inches.	Days.	Average Mx.	Average Mm.	Highest Temp.	Lowest Do.	Mean Do.
Jan.	30·56	28·57	29·774	1·68	19	41·0	32·2	49	22	36·6
Feb.	30·40	29·10	29·707	1·92	19	40·4	30·6	54	14·5	35·5
Mar.	30·50	29·30	29·915	1·80	13	46·2	34·6	55	26	40·4
April	30·50	29·42	29·864	0·66	6	58·4	40·9	75	33	49·6
May	30·40	29·23	29·966	1·13	9	63·9	47·4	76	34	55·6
June	30·59	29·62	30·009	2·78	12	68·3	52·6	78	44	60·4
July	30·26	29·61	29·874	0·51	5	70·5	54·3	82	48	62·7
Aug.	30·38	29·26	29·907	1·58	8	72·0	56·6	79	43·5	61·3
Sept.	30·53	29·17	29·937	1·18	14	62·1	46·4	71	32·5	53·7
Oct.	30·65	28·65	29·553	6·10	18	53·3	41·3	63	31	47·0
Nov.	30·50	29·95	29·667	1·92	21	43·6	34·2	52	24	38·5
Dec.	30·63	28·97	29·705	3·17	19	38·1	29·7	51	11	34·7
	30·65	28·57	29·823	24·40	163	54·8	41·7	82	11·0	48·0

OBSERVATORY.—Transits have been taken with sufficient frequency to keep accurate time. The numerous groups of solar spots, some of them of large dimensions, were observed at every transit of the Sun throughout the year. In the month of April, Mr. Monkhouse kindly made the attempt to take Photographs of them, but the confined space of the equatorial room, and the want of special arrangements, presented obstacles to success. The coincidence of these solar disturbances, with the frequency of Auroral displays, has occasioned much interest, having been predicted from the ascertained periodicity of the maximum and minimum times of the occurrence of the Solar spots.

LIBRARY.—In the Departments of the LIBRARY, the improved arrangement mentioned in the last year's Report has been found to work very satisfactorily. The new Catalogues corresponding to it are now nearly completed, including a

revised Classed Catalogue. The latter has been a work of considerable labour, and will shortly be ready for use. Some valuable additions have been made to the books during the year. Among these the following may be specified here, viz.:—Stainton's Natural History of the Tineina, 11 volumes, presented by Thomas Allis, Esq.; Transactions of the Zoological Society of London, vol. 7, 4to., presented by the Society; Flint Chips, by E. T. Stevens, Esq., presented by the Author. The last named work is a valuable guide to Pre-historic Archæology, as represented in the Blackmore Museum at Salisbury.

An abstract of the Papers read before the Members of the Society at their Monthly Meetings will be appended to this Report.

The following Lectures were delivered in the Museum during the past year.

SUBJECT.	NAME OF LECTURER.
The Origin of the English People	E. FREEMAN, Esq., M. A.
Do.	Do.
On Heat	T. H. WALLER, Esq., B. A.
The Stone Avenues of Carnac and other Brittany Pre-historic Monuments	} Rev. W. C. LUKIS, M. A.
The Minster Library	
Life in the Depths of the Ocean	W. PROCTER, Esq., M. D.
English and French Metrical Systems	} J. G. FITCH, Esq., M. A.
The Last of the Tasmanians	
Life and its Manifestations	S. W. NORTH, Esq., F. G. S.
The Operations of War	Capt. O'BRIEN.
Stars and Star Systems	R. A. PROCTOR, Esq., B. A.
The Pterodactyl and its Alliances	W. PROCTER, Esq., M. D.
Induced Electricity	T. H. WALLER, Esq., B. A.
The Mineral Waters of Harrogate considered in a Geological point of View	} C. FOX STRANGWAYS, Esq., of the Geological Survey.

In the list of the Society's Honorary Members the name of the Rev. W. Taylor, F. R. S., will no longer appear. He died at Worcester in the course of the past year.

Mr. Taylor was formerly intimately connected with this city. Some years ago he filled the office of Minor Canon in the Cathedral Church of York. He had previously been Tutor to the present Sir Charles Lowther, to the sons of Lord Monson, and to W. Dawson Littledale, all of whom were blind. His attention having thus been directed at an early age to the education of the blind he ever after took the greatest interest in promoting the welfare of persons so profoundly afflicted.

It was under his superintendence that the Wilberforce School for the Blind was promoted, and he always manifested the greatest interest in the welfare of this Institution.

After he had left this city Mr. Taylor resided until the close of his life at Worcester, and it was entirely owing to his representations that the two Worcester Institutions for the Blind owe their origin.

The Council propose for election the Sheriff of York (J. L. Foster, Esq.), John Roper, Esq., S. W. North, Esq., F. G. S., and W. Procter, Esq., M. D., as new Members of Council, in the room of Mr. Alderman Weatherley, Rev. R. Elwyn, Thos. Lockley, Esq., M. D., and H. J. Ware, Esq., who retire by rotation.

THE
TREASURER OF THE YORKSHIRE PHILOSOPHICAL SOCIETY
IN ACCOUNT FOR THE YEAR 1870.

Cr.	INCOME.		EXPENDITURE.	Dr.
	£. s. d. £. s. d.		£. s. d. £. s. d.	
<i>Annual Subscriptions, &c.:</i>			<i>Crown Rents</i>	118 15 0
Members	658 2 0		<i>Corporation Rent</i>	51 5 6
Ladies	65 3 0		<i>Rates and Taxes</i>	8 8 11
Associates	18 0 0		<i>Insurance</i>	5 18 6
Arrears	48 1 0		<i>Water Rent</i>	8 9 6
	789 6 0			192 17 5
<i>Admission Fees of New Members:</i>			<i>Salaries and Wages:</i>	
Paid in Full	21 0 0		Keeper of the Museum	
Paid by Instalments ..	30 0 0		(pro tem)	100 0 0
	51 0 0		Subcurator	100 0 0
<i>Keys of the Gates</i>	48 10 0		Servant	20 0 0
<i>Temporary Subscribers</i>	4 0 0		Lodge Keeper	39 0 0
<i>Rents:</i>			Attendant, Museum	38 18 0
New Manor Shore Pro-			Do. Hospitium ..	9 12 0
perty	104 10 2		Collector	7 12 0
Miss Briskham's House	49 1 3		Garden Labourers.....	182 4 0
Cottages in Marygate ..	22 4 6			497 6 0
Boat Yard.....	5 0 0		<i>Interest to Insurance Company</i> ...	74 13 0
	180 15 11		<i>Interest, &c. to Bankers</i>	12 12 0
<i>Gate Money</i>	242 13 10		<i>Museum, Estate, &c.:</i>	
<i>Swimming Bath</i>	40 0 0		General Expenses and Repairs ..	121 18 6
<i>Sale of Guide to Antiquities</i>	8 18 0		<i>Gardens, &c.:</i>	
<i>Use of Tent</i>	29 6 0		General Expenses and	
<i>Proceeds at Whit-suntide</i>	1 2 0		Repairs	46 15 3
<i>Sale of Plants</i>	57 1 3		Trees, Shrubs, Seeds, &c.	39 9 7
<i>Insurance Company for Fire at Miss</i>				86 4 10
<i>Briskham's</i>	26 18 0		<i>Purchase & Preparation of Specimens</i>	21 0 7
			<i>Library, Books and Binding</i>	38 3 0
			<i>Swimming Bath</i>	10 0 0
			<i>Miscellaneous Expenses:</i>	
			Printing Report	17 0 0
			Printing, Stationery, &c.	8 0 3
			Coals and Gas.....	62 13 5
			Expenses of Lectures ..	41 10 2
			„ Hospitium.	8 1 3
			„ Bands	23 8 8
			„ Tent	6 4 7
			Fire at Miss Briskham's	26 18 0
			Postages and petty Ex-	
			penses	2 15 8
				196 12 0
				£1251 7 4
			<i>Excess of Income, 1870</i>	228 3 8
				£1479 11 0
	£1479 11 0			
<i>Permanent Debt:</i>			<i>Permanent Debt:</i>	
Yorkshire Insurance			Yorkshire Insurance	
Company	1900 0 0		Company	1900 0 0
Due to Three Members			Due to Three Members,	
at £50 each	150 0 0		at £50 each	150 0 0
	2050 0 0			2050 0 0
<i>Balance due to Treasurer, 31st Dec.,</i>			<i>Balance due to Treasurer, 31st Dec.,</i>	
<i>1869</i>	350 5 2		<i>1870</i>	122 1 6
	2400 5 2			
<i>Excess of Income for 1870</i>	228 3 8			
	£2172 1 6			£2172 1 6

W. GRAY,
Treasurer.

Audited and found correct, 6th Feb., 1871,
W. PROCTER.

MEMBERS ELECTED IN 1871.

James Backhouse, *Holgate*.
 Edward Peart Brett, *Spurriergate*.
 James Buckle, 12, *Bootham*.
 Henry Cradock, *Penley Grove Street*.
 John Harris, 12, *Bootham Terrace*.
 Rev. W. Haworth, *Bootham Terrace*.
 Robert Farra Hill, *King's Square*.
 William Lawton, *Nunthorpe*.
 William Longley, *Heworth Green*.
 Daniel Martin, *Parliament Street*.
 Philip Matthews, *St. Helen's Square*.
 C. G. Padel, 74, *Micklegate*.
 Miss Riccalton, *Marygate*.
 Robert Smith, *High Ousegate*.
 Childers H. Thompson, *The Mount*.
 William Thompson, *Park Place*.
 Humphrey Jeffries Walmesley, *Museum Street*.

LADY SUBSCRIBERS ADMITTED IN 1870.

Mrs. Coates, 11, *St. Mary's*.
 Miss Eyre, 3, *The Crescent*.
 Lady Anne Mackenzie, 1, *St. Mary's*.
 Miss Oldfield, *Clifton Cottage*.
 Mrs. Palmes, 8, *Bootham Terrace*.
 Mrs. Pease, *St. Leonard's Place*.
 Mrs. Robert Pulleine, 89, *Bootham*.
 Miss Smith, 24, *Burton Terrace*.
 Miss Wharton, *Burton Grange*.

ASSOCIATE.

Edward Witten, *Blossom Street*.

RESOLUTIONS

PASSED AT THE ANNUAL MEETING, FEB. 7TH, 1871.

1. That the Report of the Council now read be adopted and printed for circulation amongst the Members, Lady Subscribers, and Associates of the Society.

2. That the thanks of the Society be given to the Members of the Council retiring from office, also to the Treasurer, Secretary, and Curators, for their valuable services, and that authority be given to the Council to hold Horticultural Meetings in the Museum Grounds, and to give admission to the Public to the Museum and Hospitium, on Whit-Monday and Tuesday, under the same regulations as last year.

3. That the thanks of the Meeting be given to the Chairman.

DONATIONS TO THE MUSEUM.

GEOLOGY AND MINERALOGY.

- Bye, Mr. E. M. Granular Chromate of Iron from Harford County, Maryland, U. S., America.
- Walker, J. F., Esq., M.A., } Fossils from the Upper Eocene,
F. C. P. S. } Brockenhurst.
- Cast of Femur of *Ichthyosaurus Walkeri*, from the Cambridge Greensand.
- Specimen of Trachyt, containing Crystals of Felspar, from the Drachenfels, Prussia.

ZOOLOGY.

- Allis, T., Esq., F. L. S. . . The Collection of Lepidoptera, made by his son, the late T. H. Allis, Esq., comprising 1873 species, 19,585 specimens, and arranged in three handsome Mahogany Cabinets.
- Skull of a Female, from Rockhampton, Queensland.
- Head of a young Alligator, the bones having been separated before ankylosis had taken place.
- Barber, C., Esq. Skull of a Porpoise.
- Cooke, Rev. Bryan Columba cristata.
- Executors of the late Mrs. Penelope Osborne, (*Stonefall, Harrogate*) } A large Collection of Foreign Shells and Corals, contained in four Mahogany and Walnut Cabinets.

LIBRARY.

- Allis, T., Esq., F. L. S. . . . Natural History of the Tineina, by
H. T. Stainton, 11 vols.
- Association, British, for the }
Advancement of Science } Report for 1869.
- The Author Flora of Yorkshire, by H. Baines,
with additional notes by the late
Jas. Backhouse, Esq.
- The Author The Lepidopterist's Register, by J. T.
Carrington.
- The Author Microscopic Objects, by J. H. Martin.
- The Author On the Relations which Dental Caries,
as discovered amongst the Ancient
Inhabitants of Britain, may be sup-
posed to hold to their Food and
Social Condition, by J. R. Mummery,
Esq.
- The Author On the alleged occurrence of *Hippopo-
tamus major*, and *Machairodus latidens*,
in Kent's Cavern, Torquay, by W.
Pengelly, Esq., F. R. S.
- The Author The Rural Life of Shakespeare, by
C. Roach Smith, Esq.
- The Author Flint Chips, A Guide to Pre-Historic
Archæology, as illustrated by the col-
lection in the Blackmore Museum,
Salisbury, by E. T. Stevens, Esq.
- Ancient Battlefields, in the Southern
portion of Northumberland, by Rev.
Scott F. Surtees.
- Baines, Mr. Supplement to Baines's Flora of York-
shire, by J. G. Baker and J. Nowell.
- Christiania, Royal Uni- }
versity of } Études sur les Affinités Chimiques,
par Professeurs C. M. Gulderg et
P. Waage.
- Le Glacier de Boium, en Juillet 1868,
par S. A. Saxe.
- Mémoires pour servir à la Connaissance
des Crinoïdes Vivants, par Prof.
Michael Sars.

- Christiania, Royal University of } Fortaelling om Thomas Beckett,
 Erkebiskop af Canterbury, af
 Thomas Saga Erkibyskups, von
 Prof. C. R. Unger.
 Quellen zur Geschichte des Tauf-
 symbols und der Glaubensregel, von
 Prof. C. P. Caspari.
- Club, Berwickshire Naturalists' } Proceedings, vol. vii., pt. 1.
- The Editor Nature, (Journal) for 1870.
- Gray, Miss (*Scarborough*) . Naturalists' Miscellany, 6 vols.
- India, Governor General of } Memoirs of the Geological Survey of
 India, vol. vi., pt. 3.
 Palæontologica Indica, vol. v. pts. 7-10.
 Records of the Geological Survey of
 India, vol. i., pts. 1-3.
- Institution, Royal, of Great Britain } Proceedings, vol. vi., pts. 1-2.
- Institution, Smithsonian .. Report for 1868.
- Patents, Commissioner of, } Report for 1867, 4 vols.
 United States } Journey to Musardu, by B. Anderson.
- Read, W.H. Rudston, Esq. } Journal of the Linnean Society :
 Zoology, Nos. 48, 49.
 Botany, Nos. 53, 54, 55.
- Society, Chemical..... Journal for 1870.
- Society, Geological Quarterly Journal, Nos. 101-4.
- Society, Geological and } Proceedings for 1869.
 Polytechnic, of the West }
 Riding }
- Society, Hull Literary and } Report for 1870.
 Philosophical }
- Society, Leeds Philosophical Report for 1869-70.
- Society, Royal, Edinburgh } Transactions, vol xxv., pt. 2.
 Proceedings for 1868-69.
- Society, Warwickshire } Report for 1869.
 Natural History }
- Society, Zoological Transactions, vol. vii., pts. 1-2.
- Tyneside Naturalists' Field } Natural History Transactions of
 Club } Northumberland and Durham.

SERIAL WORKS SUBSCRIBED FOR.

- Corpus Inscriptionum Latinarum (2 vols. with Atlas of Plates published).
- Birds of Asia, by John Gould, F.R.S. (22 parts published).
- Fauna Antiqua Sivalensis, or Geology of the Sewalik Hills, in the North of India, by Dr. Faulkner and Major Cautley. (Parts 1 to 9 of Illustration, and part 1 of Letterpress.)
- Natural History of the Tineina, by H. T. Stainton (11 vols. published).
- Nautical Almanack.
- Proceedings of the Zoological Society, with Illustrations.
- Publications of the Palæontographical Society.
- Publications of the Ray Society.
- Sowerby's Thesaurus Conchyliorum, col. plates (28 parts published.)
- The Zoological Record (Annual).
- London, Edinburgh, and Dublin Philosophical Magazine.
- Annals and Magazine of Natural History.
- Archiv für Naturgeschichte. Berlin. von Troschel.
- Geological Magazine.
- Journal of the British Archæological Association.
- Numismatic Chronicle.

COMMUNICATIONS
TO THE
MONTHLY MEETINGS
OF THE
YORKSHIRE PHILOSOPHICAL SOCIETY.
1870.

JANUARY 4TH.—The Rev. Canon RAINE said the piece of tapestry he had presented to the society had been picked up in a mason's yard. He believed it to be a piece of the original hangings in the choir of York Minster. It bore the arms of Lord Scrope of Masham, and he had found an account of some hangings in the Minster about the year 1690 or 1700, and the description corresponded exactly with the piece he had before him. He should think that that piece was all that remained of the old Minster hangings, which were taken down about 100 years ago, and placed in the Deanery. The rev. gentleman also explained some encaustic tiles from Fountains Abbey and Salley, which were exhibited.

T. S. NOBLE, Esq., read the following paper for the Rev. J. Kenrick.—At the close of the paper on flint implements which I read at our last monthly meeting, I said there were some facts which seemed to prove that not only in Europe, but in the civilized countries of the East, a stone age had preceded bronze and iron, adding that the traces of it were few, but that research once set on foot, these facts would probably be multiplied. This anticipation has been verified sooner than I could have expected. At the last meeting of the members of the Manchester Literary and Philosophical Society, Mr. Boyd Dawkins, F.R.S., laid before them a collection of flint implements, brought by Mr. Bauerman from the turquoise mines in the district of Wadi Maghara, long known for the copper mines

worked by the Egyptians during many centuries, beginning with their earliest dynasties. The following is the account given of their discovery :—“The turquoises occur in a bed of quartzose sandstone in Wadi Sidreh, and Wadi Maghara, in veins running for the most part N. and S. They were worked, according to the evidence of the hieroglyphic inscriptions on the rock, by the Egyptians, from the third to the thirteenth of the dynasties of Manetho. In and around the workings are still the tools with which they were carried on. Innumerable splinters of flint with their points blunted and rounded by use; stone hammers, some of which are broken, and round pebbles with a concavity on either side, caused by the friction of the thumb and finger charged with particles of sand, and segments of small wooden cylinders lie together. The flint flakes exactly coincide with the grooves in the rock made in the excavation, and evidently have been blunted by such use. The fragments of wooden cylinders are believed by Mr. Bauerman to have been portions of the sockets into which the flakes were fitted. The round pebbles were probably used for driving the rude chisel, formed by the flint inserted in the wooden socket, while the large stone hammers were used for breaking up the rock. There was no evidence that metal of any kind was used in the work.” Mr. Bauerman thinks that the hieroglyphical inscriptions also were executed by means of flint implements. This discovery is certainly of great importance in connection with the history of Egyptian civilization, and the general question of the successive use of stone and metal implements.

MARCH 1ST.—Dr. PROCTER read a Paper “On the Relations of the Atlantic Deposits to the Cretaceous Beds.” In the year 1864, Mr. Sars, jun., in the capacity of one of the commissioners of Fisheries in the service of the Swedish Government, had an opportunity of dredging 300 fathoms in depth within the Arctic circle off the Loffoden Isles. Instead of finding, as might have been expected from the anticipations of Prof. E. Forbes, that the bottom of the sea was barren at these depths, multitudinous forms of the highest interest, both from their biological and geological relations, and many of them new to science, were

brought up. I wish particularly to draw attention to one form, of which 70 were found: it is a stalked star fish, a crinoid with a delicate thread-like stem, three or four inches long, and a head having much the appearance of the Pentacrinoid larval stage of a feather star, which is common off the Norwegian coast. But a more detailed examination disclosed facts of vast interest. It was found not to be a larval but a mature crinoid, and belonging to a totally distinct family of the order hitherto only known fossil, and supposed to be almost entirely confined to the mesozoic series of beds. This crinoid was named by its discoverer *Rhizocrinus Lofotensis*. It belongs to the family *Apiocrinidæ*, from the typical *Apiocrinus* known as the Pear Encrinite, which obtained its maximum development at the great Oolite period, and is not represented in earlier European beds, although specimens are found well developed in the continental Jurassic strata. Passing upwards in the geological series, there are found in the lower beds of the cretaceous system, two or three somewhat obscure forms, while in the white chalk the family is, I believe, represented by only a single species of a single genus *Bourgueticrinus* (*Apiocrinites*?) *Ellipticus*, giving indications of a degradation in the animal scale, by reduction in size and development of the arms, increased branching of the stem, and irregular multiplication of the joints. Following the family higher to the Tertiary formations, only one or two small forms of the group are found to be present. The *R. Lofotensis* is smaller than the chalk fossil, the stem is large in proportion to the cup, and special organs of nutrition, and here alone among known crinoids, characters of marked degradation are met with, evidenced by the irregularity of the number of arms, of which there are four, five, and sometimes even six. In fact this crinoid, the *R. Lofotensis*, stands nearly in the same relation to *Bourgueticrinus* that the latter does to the *Apiocrinites* of the Oolite.

The *Rhizocrinus* has been dredged by Dr. Carpenter off the North of Scotland, and has also been obtained off the coast of Florida. The interest connected with this special crinoid must be taken in connection with the circumstances of development just mentioned, for it may be remarked that

two living crinoids are known in the deep waters in some parts of the Indian and Australian seas, but they belong to a different family, one which although represented by only a few species, has come down to our period continuously from the Liassic age. The remarkable point of the discovery is that there now exists, living at great depths, a representative of a family which has dwindled away, and to all appearances become almost extinct, before the formation of the older tertiaries. It is moreover eminently suggestive, and led naturalists, in connection with other circumstances and improved mechanical appliances, to pay increased attention to deep sea dredging.

The results of several expeditions organised for this purpose are as curious as unexpected, and have in some respects entirely altered the views of naturalists in regard to life in the depths of the ocean, and have established in a remarkable manner the close resemblance of the conditions under which the chalk beds were deposited and those existing at the bottom of the ocean along the tract of the Gulf stream at the present day. The general conclusion arrived at is, that chalk of the cretaceous period is now in the process of formation at the bottom of the Atlantic. Dr. Carpenter goes even further than this, and regards it as "highly probable that the deposit of Globigerina mud has been going on over some part or other of the North Atlantic sea-bed from the cretaceous epoch to the present time, (as there is much reason to think that it did in anterior geological periods), this mud being not merely *a* chalk formation, but the continuation of *the* chalk formation; so that we may be said to be still living in the cretaceous period."

It is to some of the points of evidence in this direction that I wish to confine my remarks. The simple deposit of carbonate of lime has no geological importance, for it is found in beds of all ages, but the peculiar lithological characters of the chalk demand attention. Chalk is a carbonate of lime made up of the decomposition of Testacea, Echini, Corals, &c., and chiefly of the shells of certain Foraminifera, the Globigerina and Textularia occasionally entire, but generally showing themselves in the form of more or less detached or broken cells.

With them are found minute elliptical granular bodies, first described by Ehrenberg, and called by him Crystalloids; the latter are of importance and will demand presently a more detailed account. Returning to the mud, which is brought up from the bottom of the Atlantic, this, in the tracts of higher deep sea temperature, considerable experience has shown to be very uniform in composition.

What is this composition? The characters are thus described by Captain Dayman, who in 1857 in the *Cyclops*, examined that portion of the Atlantic bed in which the telegraph is laid, and known as the Telegraph Plateau. He says, "between fifteen and forty-five degrees of West Longitude lies the deepest part of the ocean, the bottom of which is almost wholly composed of the same kind of soft mealy substance, which for want of a better name I have called ooze. This substance is remarkably sticky, having been found to adhere to the sounding line through its passage from the bottom to the surface—in some instances more than 2000 fathoms. Dried it has the aspect of chalk." The stickiness is due to the fact that it contains innumerable lumps of a transparent gelatinous substance, which by examination under the microscope, is found to be made up of granules, coccoliths and foreign bodies embedded in a transparent colourless matrix. The granules vary in size 1-40.000 to 1-8000 of an inch, and are of various forms; these Mr. Huxley considers to be masses of sarcode or protoplasm, which he calls *Bathybius*. Adherent to it are numerous minute rounded bodies, coccoliths, and in addition to these Dr. Wallich has discovered, associated with the *Bathybius*, some large spherical bodies of more complete organization, which he designates *coccospheres*. Yet more recently under higher powers Professor Huxley has found the coccoliths to be of two classes, called by him respectively *Discoliths* and *Cyatholiths*. The *Coccospheres* are hollow irregularly flattened spheroids of two kinds, one compact, the other loose in structure. They are 1-1700 to 1-2000, and some 1-760 of an inch in diameter. It is the opinion of Professor Huxley that the *Coccospheres* have some relation to the *Cyatholiths*, but that relation is difficult to determine. Whether the cocco-

spheres have been formed from a coalescence of Cyatholiths, or whether the Cyatholiths have resulted from the breaking up of the coccospheres, or whether the latter are independent structures has yet to be decided. The exact affinities of this undefined and diffused protoplasm with its *coccoliths* and *coccospheres* (*Bathybius*) are doubtful, but it is believed to be a rudimentary form of the Foraminifera, and to be somewhat allied to the ancient Eozoon. A curious point regarding the coccoliths has been made known by Dr. Gambel, who believes that he has succeeded in demonstrating in them the existence of cellulose or a substance closely allied to it. He has also shown that bodies similar to, if not identical with coccoliths, occur in formations as old as the Lower Silurian of North America. Besides these organisms we find in the ooze abundance of *Globigerina Bulloides*, and Foraminifera of other genera with *Polycystina* in considerable numbers. Many diatoms especially *Actinocyclus*, and fragments of inorganic matter are present, the nature of the latter varying with the locality and evidently regulated by the source and direction of the marine currents. On analysis I have found the Atlantic ooze to have the following composition: Silica, 25.60; Oxide of Iron and Phosphates, 3.80; Carbonate of Lime, 57.81; Carbonate of Magnesia, 1.70; Soluble Salts, 6.10; Organic Matter, 2.49; Water, 2.50; = 100.

Now turning to the chalk (which is best examined in thin sections), we find it to have the same general constitution as that of the Atlantic mud, and this connection is more fully borne out by the fact that the so-called crystalloids of Ehrenberg have been discovered by Mr. Sorby to be of organic origin, an opinion which is corroborated by Mr. Huxley, Dr. Wallich, and other microscopists. They are in fact coccoliths and coccospheres differing in no essential microscopic characters from the bodies dredged at this time from the bottom of the sea. If comparison is confined to the general lithological characters of the chalk and ooze, a great similarity between the two is found to exist; but to bear out the assertion of Dr. Carpenter there should be actual identity, and it is now proposed to consider whether this is carried out in full detail; and even then the question will

arise respecting the difference which may exist in other circumstances necessary to constitute an identity of geological age. There is one point in the structure and formation of the beds essentially characteristic of the cretaceous as a rock system, and which distinguishes it in a marked manner from the Atlantic deposits. In the chalk there are bands and lines of flint, masses of amorphous (or rather as it has been called Crystalline) Silica. This Silica seems to have filled up and taken the shape of any cavities existing in the beds. Often they are shapeless, but may and do occasionally assume the shape of cup-like sponges and often the shell of a sea urchin, or other remains form the mould of a flint. When chalk is dissolved by an acid, a small portion of silex is usually left, which is generally crystalline, and apparently of inorganic origin, being simply fragments of mineral matter. In the ocean ooze it is true that Silex in some abundance is found, but with this wide difference, that it is of organic origin, and in the form of beautiful siliceous organisms, such as diatoms, spicules of sponges and Polycystina, all of which although occasionally present, do not exist in great abundance or enter largely into the constitution of white chalk. The disseminated silex found in the ooze is of volcanic origin, the mineralogical characters being readily recognizable to an experienced eye. This character seems to constitute a wide difference of conditions, the siliceous concretions of the chalk appear to have been derived from disseminated siliceous matter moulded into cavities or collected as it were round centres of crystallization, whilst in the sea mud the substance is found in distinct siliceous coated organic bodies.

Another phase of the subject has to be considered. Chalk chiefly consists of *Globigerina* Cretacea associated in almost equal proportions with a minute *Textularia* and with coccoliths. The fossil *Globigerina* is probably but a variety of *G. Bulloides*; hence so far as this foraminifer is concerned, ancient and modern deposits may have been continuous. But in none of the modern *Globigerina* beds have I found anything resembling the fossil Cretaceous *Textularia*, the disappearance of which requires to be accounted for. I should feel much hesitation in

making this statement had it depended on my own limited experience, but I do so with more confidence, as the fact is substantiated by the microscopic examination of Professor Williamson. He says, "what I believe to be the same species (of *Textularia*) occur abundantly amongst other types of Foraminifera in the sandy deposits underlying Boston in Lincolnshire, but I never discovered it living in the sea. From unknown causes it has disappeared. On the other hand our modern deposits abound in Diatoms and Radiolaria of which no trace appears in the true cretaceous beds. That in the depths of the Atlantic, cretaceous and modern deposits may be conformably and continuously supposed is not impossible, but conformable continuity of series does not constitute identity of age or formation. In the Speeton clay of the Yorkshire coast, we have in the same blue deposit a transition from the oolite to the Cretaceous beds. The deposits have continued to accumulate without physical change from one age to the other, but the formations to which the lower and upper portions of this clay belong are distinct and represent distinct epochs." Dr. Carpenter is disposed to consider that the higher forms of the Atlantic and Cretaceous fauna will prove to be nearly identical—but even from an authority so eminent as Dr. Carpenter this opinion must be received with caution, for Ehrenberg expressed a like opinion on a similar matter, which proved an error, respecting the tertiary beds of the Mediterranean coast. These he regarded as Cretaceous because he found that they abounded in Cretaceous types of Foraminifera, overlooking the wide differences presented by the higher organizations of the two formations.

Again in the white chalk of England there is an exceedingly beautiful group of fossils called *Ventriculites*, which have greatly puzzled Palæontologists. They have the form of vases, tubes or funnels, ridged, grooved, or otherwise ornamented on the surface, frequently expanded into a cup-like lip, and continued below into a bundle of fibrous roots. Many opinions have been held respecting their place in the organic kingdom, but it is most probable that they belong to the Porifera (sponges), and that the silex of their spicules was removed and

went to add to the jelly-like material of the flints, leaving the moulds in the chalk. They are not very abundant in the chalk, and it would seem that this group has in our times obtained a higher development while the Pear encrinites have been losing ground. One haul of the dredge off the North of Scotland brought up from the depth of 500 fathoms upwards of 40 specimens of vitreous sponges, some new, and which may be supposed to represent the Cretaceous *Ventriculites*.

From the comparison which has been made it will be seen that the general analogy between the deposits going on beneath the Atlantic at this time and the true chalk is in some respects very striking, but if attention is paid to accompanying circumstances that analogy is materially lessened. Much more is required before, without hesitation, the identity of the two can be accepted. The lower organisms (in which their similarity is mainly found) can exist under numerous and most varied conditions; their presence therefore is of no great geological importance, and can afford no exact indication of the circumstances at the period of their existence. Remains of *Foraminifera* have been found in Palæozoic, Mesozoic, and Cainozoic formations. In the oldest stratified rocks, viz., the Laurentian rocks of Canada, there exist the remains of that gigantic *Foraminifer*, the *Eozoon Canadense*. In the Silurian rocks remains of *Foraminifera* are met with, some apparently identical with existing forms. In the Carboniferous rocks of Russia whole beds are composed of a *Fusulina*. While in the secondary and tertiary formations these minute organisms attain their maximum development and distribution. And taking the group separately, there are no grounds for the assertion that the complete forms have superseded other and simpler forms. The earliest known types are as perfect as any which came after, and there are forms living at the present time more simple, or at least as simple in structure, probably as any of those which have existed at the earliest periods. A Palæontologist, before he accepted as a fact the continuity of the chalk and Atlantic beds, would require the evidence of stratigraphical position to be corroborated by higher forms of life than the *Protozoa*, more particularly when he finds that

none of the characteristic fauna of the former period have been obtained from the modern beds. Their companions are altogether different, the Marsupites, Ananchytes and Goniaster are replaced by widely different zoological representatives, whilst the chambered Cephalopods, the Ganoid fishes and the Saurians have entirely disappeared.

That a deposit very similar to chalk is now, as in other geological times, going on, is evident; but the whole *facies* and character of the two periods are so essentially different that the exact identity of the two seems to be at once disproved.

The Rev. J. KENRICK read a "Notice of a Roman Sarcophagus lately discovered near Westminster Abbey, and bearing a Sculptured Cross."—He said,—“Although Roman troops occupied Britain for a long time (at least 120 years) after the conversion of Constantine in A. D. 312, no clear traces of the prevalence of the Christian religion among them have been found in the numerous places where their remains exist. A Roman villa, at Chedworth, in Gloucestershire, exhibits the Christian monogram, but it is doubtful whether it may not have been inserted at a subsequent time. By the kindness of Mr. Way I am enabled to exhibit a photograph of the cist lately found at Westminster, and a copy of the inscription upon it. It reads MEMORIAE. VALERI. AMANDINI. VALERI. SUPERVENTOR. ET. MARCELLUS. PATRI. FECERUNT. The cist is of soft Oxfordshire oolite, and the slab which covers it is of the same material. It was found last November, in levelling the North Green, Westminster, a place where no Roman remains had ever before been found. It lay E. and W. Enclosed were the bones and cranium of a young man, in the prime of life and vigour (Mr. Way's letter). The meaning of the inscription is plain enough, with the exception of a single word. Two sons, Valerius and Marcellus, inscribe the monument to the memory of their father, Valerius Amandinus. The difficulty is in the word *Superventor*. It may denote a soldier of the *Superventores*, a body of light troops mentioned by Ammianus Marcellinus (18,9,3), and in the *Notitia*, or it may be the cognomen of Valerius. The latter seems the more probable. The bones found in the cist cannot have

been the father's. This leads to the supposition that when the original deposit had turned to dust it was borrowed for a second interment from one of the cemeteries of Roman London. Of such borrowing we have a remarkable example in our own Museum. The sarcophagus of Ælia Severa (No. 15 in the new catalogue, p. 33) when found was covered by a slab (No. 32) commemorating the wife and children of Cæresius. Nor was this the only appropriation; for the sarcophagus, which bears the name of Ælia Severa, was found to contain the bones of a male. The appropriator of the cist found at Westminster was evidently a Christian. Did he inscribe a cross on a pagan slab; or did he borrow a slab with a cross from a Christian tomb, or did he cause a new slab to be made for the pagan tomb which he borrowed? We cannot say. The slab is of the same Oxford oolite as the cist, but as that is the nearest stone to London fit for the purpose, this does not prove that they are of the same age. The form of the cross is evidently mediæval, and comparatively recent. A slab in Chelmerton church, Derbyshire (figured in the *Archæological Journal*, vol. 26, p. 263), exhibits much the same form of the foot of the cross as the Westminster slab. This is not a part in which Roman remains have previously been found. The proximity to the Abbey no doubt caused the Christianized cist to be deposited there. We may rejoice that it has fallen into the hands of those by whom it will be reverently preserved. A decisive example of Christian faith, during the occupation of Britain by the Romans, appears therefore to be still a desideratum. This is not surprising. The creed of the Roman soldiery was wonderfully elastic; it admitted all the barbarous deities of the regions in which they were stationed. This was only an enlargement of their Pantheon. It was a very different thing to abjure it altogether, as the adoption of the Christian religion would have required.

APRIL 5TH.—The Rev. J. KENRICK read the following paper:—It has occurred to me that, in the absence of new facts or discoveries, in physical science or archæology, a monthly supply of which can hardly be looked for, some interest might be derived from occasional notices of valuable works recently

added to the library of the society, which might otherwise pass into their place in the catalogue and on the shelves, without due appreciation. We have now three volumes of the great work, "Corpus Inscriptionum Latinarum," undertaken by the Royal Academy of Prussia, of which Dr. Hübner, of Berlin, is one of the editors. The first of these volumes contains the Italian inscriptions; the second the Spanish; the third will probably be devoted to the English. An Atlas contains exact copies and facsimiles of some of the oldest monuments, bringing before the eye all their peculiarities of form and execution, of language and orthography. One of the most remarkable of these is the facsimile of the bronze tablet containing the decree of the Roman Senate against the Bacchanalia, passed B.C. 188 (A.V.C. 568), and therefore now 1958 years old. Independently of the interest which its age excites, it refers to a very remarkable event in Roman history, and illustrates the state of religion and manners among that people. The Bacchus of Mythology had a two-fold character, and a two-fold representation; one, the god "ever fair and young," the other, distinguished as the Indian Bacchus, middle aged, grave, bearded, and clothed to the ancles. I shall not attempt to establish an historical connection between the Grecian and the Indian god, or to lead you into an inquiry into the mystical religions of the Greeks—a labyrinth without a clue. It is sufficient to say that his worship existed in Greece under two forms; one, recognised by the state, sanctified by religion, at once festive and solemn in its celebrations, as the Dionysia at Athens; the other, mystical in its doctrines, obscure and fanatical in its rites, and admitting to them only the initiated.

In the year which I have mentioned the Roman Senate was alarmed by the intelligence that a secret conspiracy was formed, originating in Etruria, equally dangerous to the religion and morals of the people, and to the constitution of the state, the bond of which was the secret worship of Bacchus. It prevailed extensively in Southern Italy, and was recognized by the state, the figure of the god, under the emblem of a bull with a youthful human face, called Bacchus Hebon, being found on the coins of Naples and Sicily. It was not, however, by this worship that the

decree of the Roman Senate was called forth. Its occasion is thus related by Livy. A worthless Greek, a low minister of religion (*sacrificulus*) and a prognosticator of future events, came to Etruria, who introduced secret and nocturnal Bacchic rites, which, confined at first to a few, spread rapidly among both sexes, their meetings being originally separate, though, after a time, conjoint. The immoralities to which these nocturnal meetings gave rise are set forth by Livy, (xxxix 8.) and are such that the authorities of the State would have been fully justified, on this ground alone, in putting them down and punishing their authors. But there was more in them to excite alarm than their immorality. They were supposed to be connected with a secret conspiracy for the overthrow of the Government, that is of the aristocracy, represented by the Senate. Innovations in religion were, in the minds of both Greeks and Romans, closely connected with revolution in politics. Thucydides (vi. 27) remarks, in relating the mutilation of the *Hermæ* at Athens, that it made a deeper impression on the public mind because it was supposed to be connected with a revolutionary plot. Where religious prejudice and political alarm combine, slight and worthless evidence passes for damning proof. We know what calumnies Christians have endured from heathens, heretics from the Church, Jews from Christians and Mahometans, Protestants from Roman Catholics, and Roman Catholics from Protestants. We cannot, therefore, accept implicitly all the charges against those concerned in the *Bacchanalia*. That their reunions were secret, nocturnal, and promiscuous, was a sufficient reason for their suppression. That the political bias of the Senators and the panic of the Roman public may have led to the punishment of many innocent persons, and the exaggeration of the crimes of the *Bacchanals*, is, judging from analogy, very probable.

The conspiracy, as it was termed, having been revealed, the parties alleged to be concerned in it executed or expelled, and many having fled from the city through conscious guilt, or fear of condemnation, the senate issued the decree of which a copy is before you. It does not prohibit all celebration of the Bacchic rites, for we have seen before that, if not an integral

part of the Roman religion, it was tolerated. But it enacts that if any persons deemed it essential to celebrate such a rite, they must apply to the Prætor Urbanus, who must consult the Senate, not fewer than 100 Senators being present. Further it decrees, that they should have no priest or priestess, or common fund, and take no joint oath, vow, or promise; that unless by special permission of the prætor no more than five persons, three women and two men, should come together. Capital punishment is denounced against those who violate the decree, and it is ordered that it should be engraved on a tablet of brass, to be set up where it could be easily read, and its enactments carried into effect within ten days from the exhibition of the tablet. Henceforth only the secret worship of the matronly divinities, Ceres and Bona Dea, was allowed at Rome; and the introduction of foreign rites vigilantly opposed, till towards the end of the Republic, and under the Empire, a flood of superstitions came in from Egypt and the East.

The male and female informers were rewarded by a donation to each of 200,000 *asses*; the male by an exemption from further military service, and from the obligation to maintain a cavalry horse; to the female, who was the daughter of a freedman, is granted, besides the liberty of disposing of her own property, and choosing herself a guardian, that of marrying a Roman citizen. The value of this privilege may be estimated from the circumstance, that till the time of Augustus it was not lawful for one of free birth to marry the daughter of a freedman, and even he did not extend this license to the senators. The previous discreditable life of the informer seems to have been considered as no obstacle to her entering into a reputable family. The copy of the decree, which has happily escaped destruction, was addressed to the authorities of the Ager Teuranus by the Roman Consuls, and bears marks of the nails by which they affixed it to a wall. This place is represented by a village in the Peninsula between the gulf of Tarentum and the Adriatic. The tablet was found in digging in 1640, was given to the Emperor of Germany, and was consigned by him to the Imperial Library at Vienna, where it remains.

It is a curious monument of the state of the Latin language at the date of its engraving. It is by no means its oldest historical document ; but while the laws of the Twelve Tables and others have come down to us by transcription, and therefore may have been altered in grammar and orthography, this decree appears exactly as it was issued. It has everywhere the *D* after the dative and ablative case, as *populod* ; the infinitive is formed in *er*, as *dicier*, *figier* ; the long *u* is represented by a diphthong, as *plous*, *joubeo*. *Senatus* has for its genitive *senatuos*, after the analogy of Greek nouns in *us*, showing the reason of the long *u* in the genitive, as representing a contraction.

Livy's account of this remarkable event in the history of the Roman Republic is one of the best specimens both of his narrative and his oratorical power. His reputation for the more homely qualities of the historian, research and accuracy, has suffered severely at the hands of some eminent moderns. In the index to the English translation of Niebuhr's Roman History, the article "Livy," is one long indictment against him, of which haste, inaccuracy, misapprehension, patriotic prejudices, neglect of authorities, form the several counts. No doubt he wrote history more in the fashion of Hume than of Rapin, and trusted to style to conceal the defect of industry. How far he is chargeable with unfaithfulness to his authorities, or neglect of such as were within his reach, it is in most cases impossible to say, because they have perished. But a fortunate accident has preserved the original text of the decree against the Bacchanalia, and we find that he has copied its very words. Is it not a fair presumption that if in other cases we could confront him with authentic documents, we should find him not so careless, faithless, and prejudiced, as he is described by Niebuhr?

The same volume contains exact representations of many other monuments and objects connected with early Roman history ; tablets containing laws and decrees ; the inscriptions on the tombs of the illustrious family of the Scipios ; bilingual monuments in Latin and Oscan, Umbrian and Etruscan ; the Duillian column, commemorative of a naval victory over the

Carthaginians, only, however, a restoration of the original, made by Claudius or Vespasian; lots used in divination, tickets of admission to gladiatorial shows, sling-stones inscribed with the significant words *feri* (strike), *accipe* (take this), and many others.

MAY 3RD.—The Rev. J. KENRICK exhibited a photograph of an altar lately discovered in Weardale, not far from Stanhope. It is inscribed DEO SILVANO AURELIUS QUIRINUS P.R.F. Aurelius Quirinus, as we learn from two inscriptions preserved at Durham and found at the Roman Station of Lanchester, was Præfect of the second Cohort of the Lingones, the same which we know from an inscription to have been stationed at Ilkley. The wild country at the head of Weardale seems to have been a favourite hunting-ground with the officers of the garrison of Lanchester. In the rectory at Stanhope an inscription is preserved, dedicated also to Silvanus, in which one of them expresses his gratitude to the god for the capture of a noble boar, which had eluded all his predecessors. Quirinus commanded at Lanchester in the reign of Gordian III., A.D. 238—244.

The Rev. J. KENRICK then read a paper on the inscribed tablet of Dhibân, known as the Moabite stone, which was printed at full length and circulated with the Report for 1869.

JUNE 7TH.—The Secretary having announced a legacy of shells from the late Mrs. Penelope Osborne, of Stonefall, near Harrogate, Mr. NORTH observed that these shells would very materially enrich their collection in that department. The specimens were very beautiful, and such as rarely fell into the hands of collectors of shells. Foreign shells were exceedingly difficult to meet with.

The Rev. Canon HEY remarked that the two cases of butterflies before them came from a very old friend of the society (Mr. Hewitson), who was formerly connected with York. Being engaged in arranging the foreign lepidoptera in the Museum, he sent Mr. Hewitson 150 unnamed specimens for the purpose of being named, and Mr. Hewitson sent him

100 species in addition, some of which were entirely tropical insects. That part of the collection of the Society was exceedingly beautiful and interesting, and he suggested that it would be very easy for any of their friends who might be abroad to send home specimens of lepidoptera from time to time, and if they would do something of that sort they might increase their collection of those beautiful insects most materially.

OCTOBER 4TH.—ROBERT DAVIES, Esq., F.S.A., read a paper, on a Privy Seal of King Richard III. The paper was as follows:—“The document now laid before the meeting is a warrant or precept under the Privy Seal of King Richard the Third, dated at York on the 19th of September, 1483. It is authenticated by the King’s signature; the Royal monogram being placed at the top of the instrument in the usual manner. The warrant reads thus:—“Richard by the grace of God King of England and of Fraunce and lord of Irland—To the Shriefferes of this oure Cite of Yorke and to their deputies at Ansty that nowe been and that herafter shalbe and to evry of them greting—Where as it hath been shewed unto us on the behalve of the Wevers of our said Cite that almanr psons using that occupacion wtin the suburbes precincte of the fraunchises and liberties of the same have been [accustomed?] to be contributories of the annuell rent of 100s that they yerely doo yeld unto us in our Exchequer and that the wevers dwelling wtin the said Ansty being wtin the precincte and libertie of our said Cite refuse to bere their porcion of the said annuell rent contrary to the privilege of the same or cite as it is said—We willing the good constitucions, custumes and ordinance used wtin our said Cite to be observed and kept desir you and nathesle wol and charge you that in due excrcising of the same and in leveing the said annuell rent ye geve unto them your lawful favor and assistance at alle tymes as the caas shall require Not fayling hereof As our trust is in you and as ye will do us pleas or Yeven under our signet at oure Cite of Yorke foresaid the xixth day of Septembre the First yere of or Reigne.”

The company of Telarii, Textores, or Weavers, in whose

behalf this warrant was issued by King Richard III, was one of the most ancient of the York Guilds or trade incorporations, having had its customs and privileges confirmed by a charter, granted by King Henry the Second, whilst he was on a progress in the north in the year 1158. For the renewal of their rights and privileges the weavers were required by this charter to pay into the King's exchequer an annual rent of £10, a very large sum according to the value of money at that period. Three centuries later, when the prosperity of the weavers of York was on the wane, the guild obtained from King Edward the Fourth a charter, by which the annual rent payable by them to the crown was reduced to £5, but this diminished amount they were unable to pay without inconvenience. It appears that persons residing in the Ainsty, who exercised the occupation of weavers, and who had been accustomed to contribute their quota of the annual rent the city guild was liable to pay into the exchequer, now refused to bear their share of the burden, and when King Richard was at York, in the autumn of 1483, the guild prevailed upon him to arm them with the warrant now produced, by which the sheriffs of the city were empowered to assist the guild in compelling the refractory weavers of the Ainsty to pay their due proportion of the crown-rent. This gracious act added one more to the many favours conferred upon the citizens of York by that much maligned monarch King Richard the Third during his memorable sojourn at his northern metropolis, in September, 1483, although upon that occasion (I will take this opportunity of again asserting) he did not gratify his Yorkshire subjects with the pageant of a second coronation.

The autographs of Richard, as king, are exceedingly rare. Their scarcity is owing partly to the shortness of his reign, but chiefly to the pains taken by his successors in the government to destroy all evidences of his public acts. A few years ago, a warrant or order under the king's sign manual was brought to the hammer, and produced the sum of £11. Only a single example of King Richard's paraphe or monogram is given by Mr. J. G. Nichols, in his book of fac-similes of

Royal and Noble Autographs. (London, 1829.) It exactly resembles that now exhibited. The wax has been removed from the seal appended to the weavers' warrant, but the small ring of platted straw, called the hanaper, which had encircled it, still remains. It was the practice in the 15th century to surround the seal with a braid of twisted string or straw, which was fixed when the wax was warm. For myself I confess that I feel a peculiar pleasure in seeing with my own eyes and touching with my own hand a document, which was undoubtedly handled and inscribed nearly four centuries ago, within a few hundred yards from the place where we are now assembled, by one of the most remarkable personages in the whole range of English history. It seems to impart to the mind the power of realising more distinctly the actual occurrence in our venerable city of those striking events, in which the last of our Plantagenet kings was a principal actor. The document now upon the table is dated about three weeks after the King and Queen, with their son Edward, the heir apparent to the throne, and a brilliant cortege of nobles, had made their public entry into the city of York with royal pomp and magnificence. A week later, they honoured the Lord Mayor and citizens of York by their presence in the Guildhall to witness the representation of the religious drama called the Creed Play. The next day, being the festival of the nativity of the B. V. Mary, they assisted at the celebration of High Mass, which was performed in the high choir of our noble Minster with more than ordinary splendour and solemnity. In the evening of the same day they were entertained at a grand banquet in the Archbishop's Palace, when the whole court witnessed the ceremony of conferring upon the young Prince Edward the honourable rank of knighthood, and investing him with the symbols of the higher dignity of Prince of Wales. Two days before the date of the privy seal an imposing scene was exhibited in the Chapter House of the Minster. By the king's command the Lord Mayor, accompanied by all the members of the corporation and the civic officers, appeared in full state within the walls of that beautiful apartment, in which the king and his court were assembled to receive them.

The sovereign made a speech to the citizens, thanking them in highly complimentary terms for the many good services they had rendered to him, and granting them certain exemptions from the payment of tolls, with a permanent reduction of their fee-farm to the extent of £40 a year; and he appointed the Lord Mayor for the time being his chief serjeant at arms with a suitable salary.

It is not within my province to enter upon the much vexed question of Richard's moral or political delinquencies. The pen of the historian and the genius of the poet have alike laboured to depict his character in the darkest and most repulsive colours, but it is proverbially said of a personage who shall be nameless, that he is not so black as he is painted. We have indisputable evidence that the unfortunate monarch always evinced a warm attachment to the people of Yorkshire, and with them he never ceased to be a favourite. I will conclude by quoting the words of a writer who is excelled by few in his extensive knowledge and just appreciation of historical authorities. Our friend Canon Raine, in his valuable work, "The Fabric Rolls of York Minster," says—
 "Rarely if ever has there been a prince in the north so universally beloved as Richard III. The ties that bound him to the noble house of Neville, and his own regal munificence, endeared him to the people of the north. They stood by him in every danger and on every occasion, and even after his fall, when their help was of no avail, his memory lay at the bottom of their hearts, ever springing up again to be cherished and lamented. It was a dark day for the north when its sun set upon the field of Bosworth."

The Rev. Canon HEY said that as the honorary curator of entomology he was authorised by Mr. Allis to present the very splendid collection of Lepidoptera, of which there were specimens on the table. He might say that that collection was the finest in England with the exception of Mr. Doubleday's, which was probably more complete. Though the collection contained specimens of each species, yet they were selected specimens to show the variations of which the species were capable, and selected for their beauty and perfection.

He read a letter from Mr. Allis, in which he stated that the three cabinets of British Lepidoptera which he had presented contained 1,873 species and 19,585 specimens collected by his late son. These were accompanied by catalogues, one of which contained the number of each species in the cabinets, with a notice of the remarkable varieties. This catalogue had been prepared by Mr. Allis's late son's friend, Mr. Birks, of Market-street, and he believed that it would prove worthy of the collection it described. The value of the collection consisted in the large number of specimens it contained, and the beautiful condition in which they had been preserved. The catalogue had been beautifully drawn up, and must have involved great labour. This was one of the most noble gifts that the Museum had received for many years, because it was not only splendid but perfectly scientific. He then proposed the following resolution:—"That this meeting desires to express its special thanks to Mr. Allis for his present of the magnificent collection of Lepidoptera formed by his late lamented son, Mr. T. H. Allis. That this meeting avails itself of the present opportunity to express the obligation of the Yorkshire Philosophical Society to Mr. Allis for the valuable services which, during a long life, he has rendered to it, and its sincere sympathy with him in the loss which he has sustained."

Mr. C. WAKEFIELD said that he had seen the collections of some of the most eminent entomologists, of which he might name those of Mr. Bree, Mr. Spence, Mr. Saunders, Mr. Stainton, and Mr. Westwood, and not one of them was equal to the collection presented that day. It consisted of upwards of 1,800 species, and numbered over 19,000 specimens, or what might be called varieties, each being a picture of itself, and differing from the one which stood next to it.

Mr. T. S. NOBLE seconded the resolution, adding a suggestion (which met with the approval of the meeting) that the communication from Mr. Allis and the resolution should be entered on the minutes of the society, and that a copy of the resolution should be forwarded to Mr. Allis.

Dr. KITCHING in supporting the motion said that he had

been associated with his venerable friend for upwards of forty years, and in the most intimate bonds of friendship. Many years ago Mr. Allis conveyed to this society a large collection of osteological specimens exhibiting a wonderful amount of scientific industry and of persevering devotion to the interests of this society, and in that loving devotion both to science and to this society he had never from that day to this, according to the measure of his strength, relaxed. The collection which had been presented to them formed a durable monument at once of the love and devotion of the son of Mr. Allis to the pursuit of science, in one of its least popular but most difficult departments, and of the interest and affection of the father for the advancement of science in this city. The possession of such a cabinet of entomological science placed that museum in the very foremost rank of museums in this country. As long as it remained in a complete and available condition, there was a resource there for instruction in entomology, which was not afforded by any other local or provincial museum in this country.

NOVEMBER 1ST.—The Rev. J. KENRICK read a communication from the Rev. Canon Raine, respecting the Saxon Cross lately set up in the lower room of the Hospitium. “The Cross in question was found some years ago in Wakefield, by Mr. Harrison constituting the door step to a barber’s shop. Mr. Harrison gave it to Mr. Edmund Waterton, who showed it to me in an outhouse at Walton. It was his intention to set it up in a mortuary chapel, which he proposed to erect over the remains of his father, the well-known naturalist. Mr. E. Waterton’s collections were dispersed in the course of the summer, and thinking that this cross might be lost among the many fragments of wood and stone by which it was surrounded, my wish was to secure it for our Museum. At my request Mr. Fairless Barber went over to Walton to look after the stone, and through his kind agency it was offered to this Museum by Canon Browne on the part of Mr. Waterton and Mr. Harrison (its discoverer), on the condition of our taking care of it. The thanks of the society are due therefore to those

gentlemen, but especially to Mr. Barber, who took very much trouble in securing the stone for us. The stone itself is five feet in length, and three of its sides are sculptured with that interlacing work, which was so common from the 7th to the 10th century. If it has ever borne an inscription, it has been on the side which the friction of thousands of feet has rendered plain. You will remember that at Dewsbury there are some interesting fragments of Saxon sculpture. This is the only piece as yet discovered at Wakefield. It is by far the finest specimen of Saxon art that the Museum at York possesses."

The Rev. J. KENRICK then read the following papers:—

The pamphlet presented by Mr. Pengelly, on the bones of extinct animals found in Kent's Hole, Torquay, contains matter which will be interesting to palæontologists, and specially to the members of this society, which was one of the first to which Mr. M'Enery's discoveries were communicated. Among the remains found there were some teeth of an extinct carnivorous animal, originally supposed to be a bear, and named, from their peculiar form, *Ursus cultridens*, but subsequently *Machairodus latidens*. The late Dr. Falconer had called in question the existence of these bones in Kent's Hole, and thought that Mr. M'Enery had obtained them from Val d'Arno, near Florence, and mixed them with the other bones in his collection. It was Mr. Pengelly's object to show that they were really found in Kent's Hole, and to trace their history before and after the dispersion of M'Enery's collection. After the publication of his paper he was informed by Professor Phillips, that there was some correspondence on this subject among the papers of the Y. P. S., and on examination, letters were found from Mr. M'Enery to the Rev. W. V. Harcourt, and from Dr. Buckland and Cuvier to Mr. M'Enery, which were communicated to Mr. Pengelly, and which completely established the fact that teeth of *Machairodus* had been found in Kent's Hole.

Of the coins on the table, one presented by the Hon. Payan Dawnay is a penny of Henry II. or III. The coins of these two Kings are literally, as well as figuratively, the *cruz* of numismatists, and Mr. Longstaffe and Mr. Evans have written

learnedly on the long-cross and the short-cross pennies as distinguishing their coinage. Probably this is of Henry III. The obverse has the head of the King, with the crown and sceptre, and the legend HENRICUS REX. The reverse has the short cross, with four pellets between the arms, and the legend ROGER OF RON * * *. The last letters have been read as forming an abbreviation of the name of the place, which Mr. Ruding interprets as Rochester. Probably they are to be read separately, *R* being the initial of the place of Roger's birth, and ON the usual denotation of the place of minting, which from fuller specimens appears to have been Canterbury.*

The other silver coin is a *Livre Tournois* of Philip IV. of France. The obverse has a cross on the centre, and around it PHILIPPUS REX. Round the edge BENEDICTV SIT NOMEN DMNI NRI DEI JESU XRI. The reverse exhibits in the centre a representation of the church of the Abbey of St. Martin of Tours, with its gable and towers. The Priory of the Holy Trinity, in Micklegate, was a dependency of this abbey. The legend around it is *Turonus Civis*, "citizen of Tours." On the outer margin is a border of lilies. Philip IV. came to the throne in 1285, and was, therefore, a contemporary of Edward I. The mint of the Abbey of St. Martin of Tours had a high reputation, and the device of its church appears not only on coins of other towns in France, but also on those of the petty Princes of Athens and Thebes.† Philip Augustus, however, when he seized on the Province of Touraine, took to himself the privilege of coining. The moneyers of Tours had a high reputation, and when Henry II. wished to reform the coinage of England he brought over Philip Aymary from Tours for this purpose. A comparison of this piece with contemporary coins of England will show its vast superiority.

DECEMBER 6TH.—The Rev. J. KENRICK read the following paper, communicated by the Rev. D. H. Haigh, on the Dedication stone of the Church of St. Mary in Castlegate.

* Journal of the Numismatic Society, Vol. v., p. 251, 255.

† Bartholemy Numismatique du Moyen Age, p. 401. Atlas No. 555.

THE CASTLEGATE INSCRIPTION.

As I shall have occasion, in the course of the following attempt to restore the consecration record of St Mary's Church in the Castlegate, to refer to the record of the re-building of a church on the site of S. Gregory's Minster at Kirkdale, I will give it at once with the translation.

On either side of, and below, the dial, we read—

+ ORM GAMALSVNA BOHTE $\overline{\text{S}}\overline{\text{C}}\overline{\text{S}}$ GREGORIVS MINSTER THONNE HIT
 Orm Gamalson bought St. Gregory's minster when it
 WÆS AL TOBROCAN 7 TOFALAN 7 HE HIT LET MACAN
 was all utterly broken & fallen down & he it let make
 NEWAN FROM GRVNDE XPE 7 $\overline{\text{S}}\overline{\text{C}}\overline{\text{S}}$ GREGORIVS IN EADWARD
 anew from ground to Christ & St. Gregory in Eadward's
 DAGVM CNG 7 IN TOSTI DAGVM EORL + + 7 HAWARTH ME
 days King & in Tosti's days Earl & Hawarth me
 WROHTE 7 BRAND $\overline{\text{P}}\overline{\text{R}}\overline{\text{S}}$.
 wrought & Brand Priests.

Above, and around, the dial—

+ THIS IS DÆGES SOLMERCÆ ÆT ILCVM TIDE
 This is day's sunmarker at each hour.

In the Castlegate inscription two features strike us at once.

1. It is the work of two hands: the first four lines, and the last two, belong to one; the intermediate four to another. In the latter, besides greater regularity in the formation of the letters generally, we remark especially the horizontal crossing of the A, and the diphthong AE, as distinguished from the angular crossing, and the Æ of the latter. It is necessary to bear the characteristics of each hand in mind, whilst we attempt a restoration of the inscription; for what would be probable in the first would not be so in the second.

2. There is a curious mixture of the two languages, English and Latin. In the Kirkdale inscription we observe SANCTVS GREGORIVS doing double duty, first as a genitive, then as a dative; in the latter, coupled with the Old English dative CRISTE, as here SANCTA MARIA is a genitive coupled with CRISTES. The second writer gives us SANCTE twice for SANCTI, and MARTINI and CVTHBERHTI correctly written. But the mixture

of the two languages goes farther than the names of Saints; CONSECRATA EST ANNO and POMÆRIO, (as I restore it), also occurring. In this respect this inscription does not stand alone. At old Byland there is a dial inscribed + SVMERLED AN HVSCARL ME FECIT, where the rank of the writer, “an housecarl,” is in English, but the verb and its object are in Latin. The “Chronicon Scotorum” affords many and very curious examples of mixture of Irish and Latin; I give one for comparison:—

A. D. 714 *Pluit fros meala* *for Otain mhic, fros argid*
 “It rained shower of honey on Othan Bee, shower of silver
for Otain moir, fros fola *supra fosam Lagenorum, et inde vocatur*
 on Othan Mor, shower of blood on foss of Laighen and thence is named
Niall Frosaic mac Fergail ar tunc natus est.
 Neil Frosach son of Fergal for then he was born.”

The stone appears to be entire on the left hand, and there is room, according to the extent of the defacement, for two or three letters in each line, except the last, which is in smaller letters, and more crowded. On the right hand it is broken, but as there can be no doubt as to the restoration of the third, fourth, and sixth lines, the length of the lines is certain.

Of the first word the last two letters are distinct—os. This can only be completed THEOS, THIOS, or THOS, of which the first letter would be the rune *thorn*, which occurs in the ninth line. An indistinct indent after s has been thought to be i. I do not think it is, and I observe that, without it, the distance between s and m is the same as that between m and i.

If the word were *theos* or *thios*, it would be the feminine demonstrative agreeing with MINSTER, which in the inscription is shown to be feminine by the verb CONSECRATA EST in the seventh line, (whilst in the Kirkdale inscription the pronoun HIT shows it to be neuter), and of this verb *minster* would be the subject. We should then read THIOS MINSTER SET BE EFERARD, &c., “This minster set by Eferard,” &c.

If it were *thos*, (although this spelling has not elsewhere occurred), it might represent the accusative feminine *thás*, for the accented *à* had the sound of long *o*; (the masc: is *thisne*, neut: *this*). In this case the reading would be THOS MINSTER SETTON EFRARD, &c. “This minster, Efrard, &c., placed”;

MINSTERSE
ANDTERINRESE
ANDRITNESHE
INSTEISCANNA
EMARTINISSE
TTONNIVMISCOR
ECNVAESTAN
VINIVTAET
VERIOFENI
ESTON

and this, I think, is the better reading, and the dots after *ÆSE* complete the first clause.

Efrard, *Ebrard*, is the only name I can think of, and I have no doubt in supplying it here.

We can now read on without difficulty to the end of the seventh line. The only question arising is, how the second writer would have expressed the name of S. Cuthbert, *CVTHBERTI*, *CVDBERHTI*, or as I have supplied it, with the rune *thorn*. The only dates possible to fill up the lacuna at the end of the seventh and beginning of the eighth lines are *DCCXVI*, *DCCLVI*, *DCCCVI*, or *MLXXVI*. I prefer the second, for reasons to be stated presently. Two dots after *i* complete the second clause, which will stand—*ON NAMAN DRIHTNES HÆLENDES CRISTES AND SANCTA MARIA AND SANCTE MARTINI AND SANCTE CVTHBERHTI AND OMNIVM SANCTORVM CONSECRATA EST ANNO DCCLVI*: “In the name of Lord Jesus Christ, and S. Mary, and S. Martin, and S. Cuthbert, and All Saints, she was consecrated in year 756.”

As in the Kirkdale inscription, so here, the record of the dedication is followed by the subscription of the writer. *SINVIT* is a personal name, of the same class as *Ascuit* (spelled also *Ascoit*, *Hascuith*), and *Stepoit* in the Domesday record, and *Tasuit* on a sword found in Nydam moss, Denmark. The preposition *AET* is followed by the commencement of the letter *v*. After the lacuna comes what I take to be part of a round *m*; (compare round and square *E* in the first line, square and round *c* in the fourth); *VRBIS POMAERIO* exactly fills the space; and, however singular it may seem, I feel satisfied that it is the true restoration. *Aet urbis pomaerio* is the local designation of *Sinuit*, (the first writer), spoken of objectively in the eighth line, but in the ninth he takes up his graver again. *THE* “who,” *ME* “me,” must have been followed by *WRAT* “wrote.” In the tenth line the letters are much smaller and *TE* are united, the space remaining being too confined for all that the writer had to say. We have—*TER*, the conclusion of the word *MINSTER*, then the preposition *ÆT*, and then *SIN*—surely the commencement of *Sinuit*’s name again.

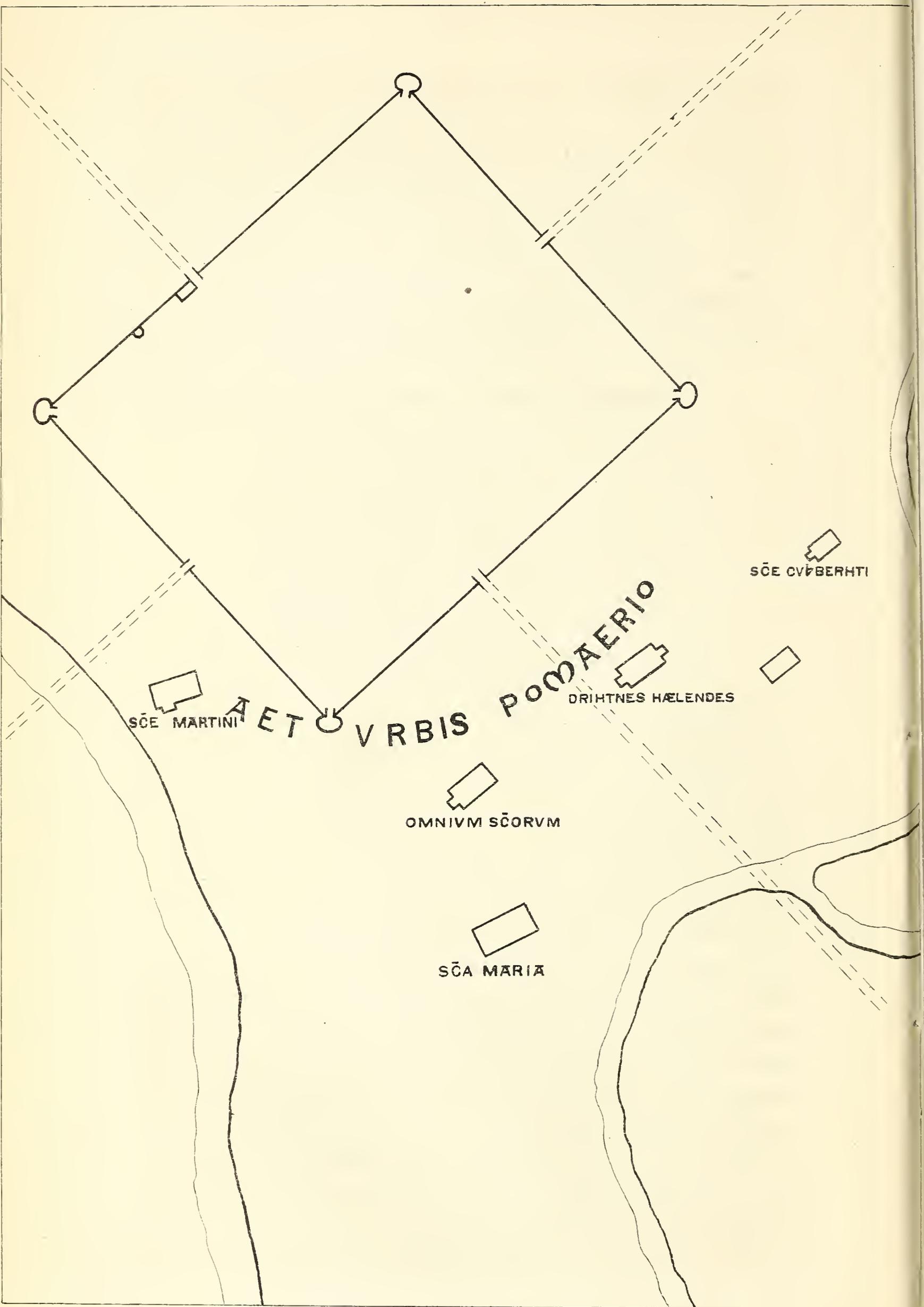
When this inscription was first communicated to me, the

idea forced itself upon my mind, that this line contained a local designation of the *minster* (*monasterium*) in the suburb or *pomærium*, distinguishing it from the *minster* of S. Peter, within the city, and from the *minster* of S. Mary, Bishophill, on the other side of the river; and that this designation was in some way connected with Sinuit's name. *Ethel-eard,—seld,—setl,—stol,—stow*, are words implying "patrimonial" or "inherited dwelling;" HATTE HI MINSTER ÆT SINVITES ETHELSTOWE, "called her 'minster æt Sinvites ethelstow,'" will exactly fill the space.

My restoration, then, of this inscription stands thus:—

+ THOSMINSTERSETTONE
FRARD 7 GRIM 7 ÆSE·ONN
AMANDRIHTNESHÆLEND
ESCRISTES 7 SCĀMARIAT
SCEMARTINI 7 SCĒCVTHBE
RHTI 7 OMNIVMSCORVMC
ONSECRATAESTANNOD
CCLVI·SINVITAETVRBIS
POMAERIOTHEMEWRATHAT
TEHIMINSTERÆTSINVITSETHELSTOWE

The monasteries or minsters of Northumbria in the Anglo-Saxon age, did not consist of one conventual church, with the cells of the brethren, and all other offices attached, like those built after the Norman Conquest. On the contrary they comprized several churches and oratories, sometimes at considerable distances apart; and it is probable that the brethren lived in detached cottages, as do those of Camaldoli to this day. Thus the monastery of S. Benedict Biscop embraced the basilica of S. Peter, the round church of S. Mary, and the oratory of S. Laurence, at Wearmouth, and the basilica of S. Paul, at Jarrow. Indeed the Northumbrian Church, which after the expulsion of S. Paulinus, was for the second time founded by Scottish missionaries, followed in this respect the practice of the Scottish Church, in the Monasteries of which, at Iona, Glendalough, Clonmacnoise, Monasterboice, &c., we still see groups of the ruins of several churches. The inscription before us evidently speaks of a monastery of this kind, consisting of several churches; and churches stand to this day in York,



SĀE MĀRTINI

SĀE CVĀBERHTI

OMNIVM SĀORVM

SĀE MĀRIĀ

DRHTNES HĀLENDES

AET VRBIS POMĀERIO

bearing the several dedications here commemorated, all included in the *pomærium* of the city which the Angles found when they first occupied Northumbria, all within the walls of the later Norman city. The accompanying map shows their position, relatively to the former:—

S. Saviour's in St. Saviourgate,
 S. Mary's in Castlegate,
 S. Martin's in Coney Street,
 S. Cuthbert's in Peasholme Green,
 All Saints' in the Pavement.

If my restoration of this inscription be correct, and I am satisfied that it conveys the purport of what is lost, (whether in the exact words or not), it will appear that Sinuit was the owner of the land set apart for the establishment of this monastery. Efrard, Grim, and Æse may have been the abbot, prior, and subprior, engaged in its establishment, and of all the dates which I have said are possible, that which I have supplied seems to me the most probable, for the seventh and eighth centuries were emphatically the age of the foundation of monasteries in Northumbria, as the ninth was that of their complete destruction by the invading Danes. Had so important a monastery as this been consecrated A.D. 716, I think it would have been recorded in the Ecclesiastical History of Ven. Bæda; as it is not, I prefer A.D. 756. Neither here nor in the dedication record of S. Paul's, Jarrow, is the name of the consecrating prelate mentioned; but as he would be, under ordinary circumstances, the bishop of the see at the time, the date would be considered as sufficient indication.

In the eleventh century the work of re-building churches on the sites of the old monasteries, (not of restoring the monasteries), began; and at Kirkdale we have the record of one such re-building immediately before the Norman Conquest. The earliest restorations of monasteries were those of Whitby and Jarrow after the Conquest. With regard to this, we find all the churches which it had comprized, except that of S. Saviour, named in the Domesday survey, (this apparently had not then been re-built); and besides them we have Holy Trinity, (which I would suppose is the church in King's Court), Holy Cross in

the Pavement, and S. Andrew's, in S. Andrewgate. Possibly these had been additions to the monastery after its foundation; at least it is worthy of remark, that all the churches named in Domesday are in this particular district of York; the churches, (certainly of ante-Norman foundation), of S. Mary on Bishop-hill, being unnoticed because they were in the Archbishop's ward.

Convinced of the soundness of the view I now take, I cannot say I am sorry that I am forced to abandon one which I held until lately, and which seemed to me to identify satisfactorily the three persons who are named in the first and second lines. Finding in Domesday that William de Perci had the church of S. Mary; that one Ebrard, or Evrard, was tenant under him of Leathley and Linton-on-the-Wharfe, and of Hagedenebi (near Healaugh), in Yorkshire, and of Legsby and Holton in Lincolnshire; that one Grim held of Ernegis de Burun, the manors of Acaster, Stillingfleet, and Cottingwith, in Yorkshire, Goxhill, Thornton, Ulceby, and Barnetby, in Lincolnshire; that one Asa held of William de Perci, the manors of Hayton, Burnby and Scarborough in Yorkshire; that Ebrard and his two brothers were owners of Spridlington, (not far from Legsby and Holton), in Lincolnshire, T. R. E.; I thought it very probable that Ebrard and his two brothers were the same as the Ebrard Grim and Æse of our own record, and that they had been lords of an extensive district in the south-west and south-east of Yorkshire, and of other estates in Lincolnshire, before the Conquest. Under this impression I could only supply the date MLXXVI, and this too seemed a probable date for the building of these churches, as it was only seven years after the destruction of all this part of York by fire. All this I must now abandon, and refer this inscription to a period respecting which history is almost entirely silent, rather than to one which is illustrated by a document so important as Domesday. There is nothing in the character of the writing to favour one date rather than the other, and Grim, supposed to be a Danish name, was in use amongst the Angles also.

Mr. NOBLE, the hon. secretary of the society, then made some observations on the approaching Eclipse of the Sun of the 22nd

inst., noticing the amount of the observation at York, the time of its commencement and termination, and its probable effect, where total, in fixing the true nature of the "red flame prominences" seen round the margin of the moon's disc during the time of total obscuration.

The Rev. J. KENRICK said—Some objects of antiquity have been presented to the society of which a short notice is desirable. The fragment of Samian pottery presented by Mr. Ald. Swaine and found in an excavation on his premises in the Crescent, bears the name of *Carus* as the maker, a name not found before on any piece of pottery in York. He has also presented a number of stones apparently forming a series of weights, found in the excavation carrying on in Micklegate opposite St. Martin's church. They are cylinders of stone, perforated in the centre, as if for the purpose of passing a string or rod through them. When found they were piled pyramidically one upon another, and as their weights are respectively 10lb., $4\frac{1}{2}$ lb., 3lb., $1\frac{1}{2}$ lb., and $\frac{1}{2}$ lb., it is probable that they formed part of a set, bearing a ratio to each other. From the depth at which they were found (14 ft.) they are presumably Roman.

The coin given by the Hon. Payan Dawnay, is a copper farthing of James 1st. It is insignificant in its appearance, but a good deal of history is connected with it. It seems strange that England should have been so long without a copper coinage. Edward I. coined silver farthings, which, from their small size, were very inconvenient, and of course contained very little of the precious metal. It was a common practice to remedy the want of small change by cutting a silver penny into four parts. Some of these, which have been found in hoards, are so fresh and unworn that they appear to have been quartered before they left the mint. The consequence was the issue of a great number of local copper tokens. Queen Elizabeth had been frequently urged to issue a copper coinage, but had always refused. James I., in the year 1612, determined on an issue of what were called farthing *tokens*, for they were not regarded as coin of the realm. Hume has praised James for recalling, in the first years of his reign, the patents and monopolies which had been carried to such a length under

Elizabeth, that on a list of them being read out in Parliament a member exclaimed, "Is not bread among them?" Nevertheless, when the farthing coinage was determined upon, a patent was granted to Lord Harrington, and after some bargaining between him and the king about the share of the profit, which was calculated at £25,000, in May, 1613, the farthings were issued, the use of all private tokens being prohibited. The description of the coin in the proclamation corresponds with the device and legend as they appear, though much worn, on this specimen. The farthings got the cant name of *Harringtons*, from the patentee. The author of that odd work "Drunken Barnaby's Journey," describes himself as arriving in the course of his northern expedition at Harrington, in Northamptonshire, and giving a farthing to a beggar in honour of the name :—

Veni Harrington, bonum omen,
 Vere amans illud nomen,
Harringtoni dedi nummum,
 Et fortunæ pene summum,
 Indigenti postulanti,
 Benedictionem danti.

These tokens were refused in some of the counties, and frauds having been practised in regard to them they ceased to be issued in the reign of Charles I. But the inconvenience was so great that about 1648, overseers of the poor, town corporations, and private tradesmen began to issue their copper tokens, whose number increased so much that they have formed a distinct branch of numismatics.

Lord Harrington, whose title has no connection with the family of Stanhope which now bears it, was a favourite of James I. He was raised to the peerage in the first year of his reign. The Princess Elizabeth, the only survivor of James's four daughters, had been committed to his charge on the King's coming to England. He had a seat near Dunchurch, in Warwickshire, where she was residing at the time of the gunpowder plot, and it was part of the conspirators' plan that, on the explosion taking place, three of them should proceed to Dunchurch, and from thence to Lord Harrington's house, and

possess themselves of the person of the Princess. When in the year 1613, Elizabeth was married to the Elector Palatine, the marriage by which she became the grandmother of George I., Lord Harrington was appointed to attend her. The marriage took place on Valentine's day 1613; his patent is dated April 13 of the same year, and no doubt was intended at once to reward his services and bring profit to his Sovereign.

Presented
13 MAR 1886
