Appendix.

APPENDIX.

Appendix A.

[*For the following Notice of George Scott, of whom no biographical notice could be given in the 'Memorials' (p. 5), the Editor is indebted to Edw. Forster, Esq., Vice-President of the Linnæan Society.*]

George Scott, Esq., F.R.S., the Editor of his uncle Derham's 'Select Remains of the Learned John Ray,' was Lord of the Manor of Woolston Hall, in the parish of Chigwell, in the county of Essex. This manor and seat had been in the family many generations, of which he was the twelfth and last of the name; from him it was inherited by Robert Bodle, Esq., descended from the daughter and only child of his great grandfather's second and youngest son George, Mr. Scott being the grandson of William, the eldest.

This manor was granted, about the beginning of King Henry the Seventh's reign, to William Scott, of Stapleford Tawney, in the same county, who was lineally descended from Sir William Scott, Lord Chief Justice of England, and Justice of the Forests in the reign of King Edward the Third, whose papers and silver drinking-cup were in the possession of George Scott, the subject of this memoir, who was born in Watling street, London, on the 29th December, 1719, and was educated at St. John's College, Oxford, where he took the degree of Master of Arts in 1743, and an honorary degree of Doctor of Common Laws was conferred on him in 1763. He was married on the 13th of May, 1746, in the Chapel Royal, St. James's, to Jane, daughter of Dr. Edmund Gibson, Bishop of Lincoln, and afterwards London, the intimate friend of Ray, who communicated the County Lists of Rare Plants in the Bishop's edition of Camden's Britannia, with the exception of Middlesex, which was furnished by Petiver. George Scott gave some assistance in family history, in a subsequent edition. His aunt Anne, daughter of William Scott, married Dr. William Derham, rector of Upminster, the author of the 'Select Remains.' George Scott died a widower, without children, on the 26th August, 1780, and was buried in the parish church of Chigwell, on the 5th of September in that year. His wife died on the 5th of January, 1770, and was buried on the 21st, in the Bishop's vault at Fulham. There is no monument or inscription for him among those of his ancestors in what is called the Scott chapel in the parish church. The only memorials of him and his wife are their achievements against the walls. It is rather remarkable that, among those of the Scott family, there is an achievement for Bishop Gibson, and another for Dr. William Scott, President of St. John's College, Oxford, son of the rector of Upminster, and therefore Scott's cousin, neither of whom dwelt in Chigwell.

This zealous antiquary resided some time in Sackville street, Piccadilly, which house he disposed of on the death of his wife, which happened in 1770, and also gave up a residence at Bath, and from that time lived entirely at the family seat, Woolston Hall, perhaps rather recluse, as the Rev. Michael Tyson, rector of Lamborn, the adjoining parish to Chigwell, in a familiar

letter to the celebrated antiquary Richard Gough, calls him "the Hermit of Woolston," not meaning certainly that he avoided all company, for Tyson, himself fond of antiquarian pursuits, on becoming incumbent of Lamborn, was soon in habits of social intercourse with him, dining at his table. His not mixing more with the world arose from the pain he suffered from a dangerous complaint which hastened his end, and he was excused serving the office of sheriff of the county, for which his name was three times put on the list, on account of extreme ill health, which rendered him incapable of any exertion. He was remarkable for his great knowledge and goodness of heart, a diligent inquirer after antiquities, freely imparting his discoveries to his friends. The late Mr. Da Costa describes him as a very humane, friendly, and communicative gentleman; and Morant, author of the 'History of Essex,' in acknowledging the assistance he had received from him, by the communication of several curious particulars relating to the part of the county in which he resided, notices him as "this good man." A plate of the monumental brass of Archbishop Harsnet in the work alluded to was supplied by Scott. There is no record or tradition of his having a knowledge of botany, to which his neighbour Tyson was much attached, but he left a collection of minerals, still preserved in Woolston Hall. He appears by Da Costa to have been a collector of all sorts of antiquities, charters, leaves, records, coins, abbey-seals, Roman lamps, Etruscan ware, swords, daggers, pistols, helmets, saws, and other ancient instruments, regalia, watches, sarcophagi, bronzes, idols, apparel, pictures, miniatures, and prints. A part of his collection was sold in July 1782, and about the same time, his extensive and valuable library. The mansion, now the residence of Robert Bodle, Esq., son of Robert above mentioned, still retains its venerable character, the walls hung with portraits of the family, two or three of Scott himself, one of Derham (our author), and one of his son, the President of St. John's, Oxford, in which college is another portrait of George Scott. Among the numerous antiquities, there is the little brass Mercury figured in Morant's 'History of Colchester,' also other Roman remains from that town. In the hall is a handsome carved oaken chair, the principal part of which is known to be five hundred years old.

Appendix B.

Edward Lhwyd, whose letters to John Ray, in this work, are reprinted from the 'Philosophical Letters,' was born in South Wales about 1670, and was the son of Charles Lhwyd, Esq., of Lhanvorde. He is best known as an antiquary, but he deserves more notice than he has received as a naturalist. Although many of his works are still well known, the materials for his biography seem never to have been collected together. He appears to have received his early education in Wales, and in 1687 was entered at Jesus College, Oxford. In 1701 he was created M.A. He studied natural history with great diligence as a pupil of the celebrated Dr. Plot, and, in 1690, he succeeded his master in Oxford as keeper of the Ashmolean Museum. In 1699 he published the work on fossils which gives him a claim to regard as a naturalist, and which must for ever connect him with the history of the science of palæontology. This work was entitled 'Lithophylacii Britannici Iconographia,' and consisted of a systematic catalogue of the fossils in the Ashmolean Museum, and was illustrated by a large number

of wood engravings. It was printed at the expense of Sir Isaac Newton, Sir Hans Sloane, and some of his other scientific friends. Only one hundred and twenty copies of the first edition were printed. Subsequently a new edition was published under the care of Mr. Huddesford, and to which several of Lhwyd's other contributions to palæontology were annexed. This work contains a systematic arrangement of fossils, which, whatever may be its defects, possesses the merit of being the first attempt that was made to connect the study of fossils with other branches of natural history.

The following is a list of his published works and papers from the 'Bibliotheca Britannica:

1. 'Lithophylacii Britannici Iconographia,' London, 1699. 8vo. New edition, by W. Huddesford, 1760.

2. 'Archæologia Britannica,' Oxford, 1707. Folio.

3. 'Adversaria de Fluviorum Montium, Urbium,' &c., 'in Britannia Nominibus,' 1719, London. 8vo.

4. 'Letter to the Scots and Irish.' Translated by W. Malcolm. Edinburgh, 1739. 5. Some account of a fiery exhalation in Merionethshire. 'Phil. Trans.,' Ab. iii, 671. 6. A note concerning an extraordinary hail in Monmouthshire. Ibid., 1697. 7. Concerning some regularly figured stones lately found, and observations on ancient languages. Ibid., 1698. 8. On a figured stone found in Wales. Ibid., 1699. 9. Account of some fossils. Ibid., 1704. 10. Account of very large stones voided by the urethra. Ibid., 1704. 11. Observations in natural history, made in travels through Wales. Ibid. 12. Account of some uncommon plants growing about Penzance and St. Ives, in Cornwall. Ibid. 13. On the natural history and antiquities of Wales. Ibid., Ab. vi, 19, 1713. 14. On an undescribed plant [*Tubularia indivisa*, Linn.], Ibid.

In the 'Gentleman's Magazine' (vol. lxxvii, p. 419) there is an account of the sale of Mr. Lhwyd's library, which consisted chiefly of works of antiquarian interest. Many of his letters to Dr. Martin Lister, and other distinguished naturalists, were presented by Dr. Fothergill to the Ashmolean Museum, Oxford, where they still exist.

He died in July, 1709, and his death is said to have been hastened by immoderate application to his antiquarian studies. The immediate cause was sleeping in a damp and close room in the museum at Oxford, which he chose to sleep in, for the convenience of pursuing his studies.

The following extract, giving an account of the church in the parish in which Lhwyd was born, and some account of his family, is from the MS. of the late Mr. John Dovaston, and has been kindly communicated by his son, F. M. Dovaston, Esq. A.M., of Westfelton, near Shrewsbury:

"The old church of Oswestry stood near to Llwynymaen, in a field there called to this day Caeyr Eglwys, or the Church Leasow. It was called the church of Llanforda, from its vicinity to River Morda, and was dedicated to the Holy Trinity. Near to the spot was a well of fine water, to which the vulgar do yearly resort on Trinity Sunday, where they hold a kind of wake, and drink the water of the said well, with sugar in it. No remains of this church are to be seen. Llwynymaen house is very near to where the church once stood; and I cannot pass this place without very strongly supposing that hereabouts was a Druid's place of worship; for the word Llan, or Llwyn (which is the same thing), does not signify a church. And yet we always find churches in those places so bearing the name of Llan; but it signifies a grove, or place of Druid worship, which always was in woods of oak; and Llwyn y Maen signifies 'the grove of stone;' and probably there

were formerly stone pillars erected, such as Orsedd or Meine Gwyr, or Cronlech, for the performance of their religious rites. Amongst the old names given to Oswestry, not one of them has the word Llan to them; and possibly this may be the reason, because there was no Llan or grove there, nor any church in former days, but a monastery; for the church which belonged to the town was built at Llwynymaen, where the Llwyn originally was, and was called Llanforda church, or *alonn*, a grove of trees for patriarchal worship, whence proceeds the Welsh word Llan, which, although it doth not signify a church, although at such places there generally is a church, because it was formerly a grove, or Druid place of worship; and the first preachers of Christianity to their followers, did in general erect their churches near to these groves, in order, by this means, and slow innovations of the patriarchal into that of the Christian, to convert them, which at length was accomplished; for there are many places where now there are no churches that are called Llan, from there having been groves there. * * * Llwynymaen, now mostly taken down, was an ancient stone edifice, in form of a castle, built very strong, with a square high tower at each end of it; had a gateway before the entrance, and strong doors thereto, and had once been walled round. All the demesne of Llanforda once belonged to it. It hath been for nearly 200 years past in the family of Llwhyd, the last whereof was Edward Lloyd, who died about 1557. Llanforda was given to a branch of that family, who were Lloyds of Llanforda for many years, until by marriage it came into the family of Williams. Edward Llwhyd, the antiquary, who published the 'Archæologia Britannica' in 1707, was born there. His father, Edward Llwhyd, lived there; and during his life he kept a small light carriage, with four wheels, which was drawn by dogs; and he frequently used to ride in it, and drove his dogs to Oswestry, on which account the public-house now called 'The Coach and Dogs,' which was then his property, had the sign of the Coach and Dogs."

Mr. Dovaston has in his possession a curious ancient stone sun-dial, found, in 1819, among some ruins at Llwynymaen, having on it the initials and arms of Edward Llwyd, without gnomon, showing the hour on five surfaces, the edges of the curved hollows acting as gnomons, and casting their shadows on the hours.

Appendix C.

The following notices, extracted from the volumes of the 'Philosophical Magazine' for 1828 and 1829, of the commemoration of the second centenary of the birthday of Ray, would have been more appropriately published with the 'Memorials,' but the Editor was not at that time aware of their existence.

COMMEMORATION OF THE SECOND CENTENARY OF THE BIRTHDAY OF RAY.

A meeting is about to take place in London, which, to judge from the name of the gentleman who has consented to take the chair, and from the stewards who have undertaken to act on the occasion, may be regarded as a national festival in honour of our distinguished naturalist Ray. Throughout the whole of a long and industrious life, that enlightened observer and sys-

tematist devoted himself unceasingly to the study of the works of the Creator, whom in those works he learned devoutly to adore. His researches extended into every branch of natural history, and in each of these he excelled. His labours were deservedly esteemed by his contemporaries, and continued to receive from succeeding writers the attention to which their intrinsic value entitled them. To them Linnæus himself was deeply indebted; and Cuvier, the first of the zoologists of the nineteenth century, does not hesitate to avow his obligations to our illustrious countryman, who laboured in the same vineyard during the seventeenth. The admiration and gratitude of every naturalist, to what branch soever of the science his attention may be more particularly directed, are justly due to Ray, and are indeed on all occasions most freely tendered. How well he merited them will readily be illustrated by even a brief enumeration of a few only of those numerous and valuable productions which we owe to his observation, his study, and his research.

Ray has been pronounced by Cuvier to be the first true systematist of the animal kingdom, and the principal guide of Linnæus in this department of nature. To him chiefly the zoologist is indebted for the excellent 'Ornithology' and 'Ichthyology' which pass under the name of Willughby. The notes collected by both were, after the decease of the latter, digested and arranged by Ray, who revised and methodised the whole, and gave to the works the form in which they were presented to the world. Both these productions are well known, and are still justly esteemed; the 'Ichthyology' especially, the principles first applied in which have been adopted by Cuvier in his primary divisions of the fishes in that great work for which he has been collecting materials during nearly the whole of his life, and of which the first *livraison* has just appeared. The posthumous publications of Ray, the 'Synopsis Methodica Avium,' and the 'Synopsis Methodica Piscium,' afford abridgments of the 'Ornithology' and the 'Ichthyology,' with numerous additions. His 'Synopsis Methodica Quadrupedum et Serpentini generis' was published during his life, and very shortly after his decease appeared his 'Methodus Insectorum.' The 'Historia Insectorum,' a work of real value, was printed some years after his death, at the expense of the Royal Society.

By Haller, Ray was designated as the greatest botanist in the memory of man. Still more emphatic is the character of him given by the late revered President of the Linnæan Society—"The most accurate in observation, the most philosophical in contemplation, and the most faithful in description, amongst all the botanists of his own, or perhaps any other time." To Ray the British botanist is indebted for the first good Flora of his native land. At an early period of his life he gave to the world his 'Catalogus Plantarum circa Cantabrigiam nascentium,' which was followed in a few years by his 'Catalogus Plantarum Angliæ et Insularum adjacentium.' The third edition of the latter work was entitled 'Synopsis Methodica Stirpium Britannicarum,' and is still universally known. This also passed through three editions, the last of which was considerably enlarged and improved by the celebrated Dillenius. His earliest attempt as a general systematist was the 'Methodus Plantarum nova,' in which, availing himself of the labours of former writers, corrected by his own philosophical genius, he produced an outline in several respects superior to those of his predecessors. His later 'Methodus Plantarum emendata et aucta' adopts many of the views advanced by his generous rival and contemporary, Tournefort. These systems, modified from time to time according to his continually increasing knowledge, had

been employed in his 'Synopsis,' and in conformity with them he digested his 'Historia Plantarum generalis,' a work of immense labour and research, which contains descriptions of nearly 20,000 species of plants, arranged in a systematic order, many of the groups of which are purely natural, and agree perfectly with those admitted by the best informed of modern botanists. In the first book of this history, entitled De Plantis in genere, Ray fully established his rank as a physiological botanist. His detached remarks on the motion of the sap in plants, and on other points of vegetable physiology, are there embodied with the principal discoveries made by previous or contemporary writers, so as to form, according to Du Petit Thouars, the most complete treatise which yet exists on vegetation taken as a whole. "To isolate this book, and to reprint it in a separate form," continues that distinguished botanist, "would constitute the most noble monument that could be erected to the memory of Ray."

As a geologist, the fame of Ray must rest on his three physico-theological discourses concerning the primitive Chaos and Creation, the General Deluge, and the Dissolution of the World, a highly popular work, which was frequently reprinted, and which proposes a theory at least as plausible as any which had then appeared, or was advanced until long after its publication. A portion of his Collection of Unusual or Local English Words, with the Preparation of Metals and Minerals in England, &c. proves also that he was by no means neglectful of this interesting branch of natural science so often as he possessed opportunities of attending to it.

The preceding list, copious as it appears, contains only the more important works of Ray as a naturalist, without including his Appendices, his Supplements, his Catalogues, his detached papers, &c., and without adverting to his various publications on philology, his travels, his philosophical treatises and letters, and his theological productions. Of the latter, one, however, cannot be passed by without notice. Few works have been more frequently reprinted than 'The Wisdom of God manifested in the Works of the Creation,' and none have better deserved the popularity they have enjoyed. On the character of its author, whether as a naturalist or a divine, that lasting monument of his knowledge and his piety confers equal and immortal honour.

Ray was born on the 29th of November, 1628. The two hundredth anniversary of his birthday is now rapidly approaching. It will be celebrated in a manner worthy of the man and of the occasion. The cultivators of natural science, in each of its various branches, are anxious to take a share in the commemoration of the event.

The President of the Royal Society, Davies Gilbert, Esq. M.P., has consented to act as chairman at the proposed dinner, and the following gentlemen have already accepted the office of stewards:

P. M. Roget, M.D. Sec. R.S.
E. Forster, Esq. V.P. and Treas. L.S.
J. Sabine, Esq. Sec. Hort. Soc.
Rev. W. Kirby, F.R.S. &c.
J. E. Bicheno, Esq. Sec. Linn. Soc.
R. Taylor, Esq. Assistant-Sec. Linn. Soc.
W. J. Broderip, Esq. Sec. Geol. Soc.
N. A. Vigors, Esq. Sec. Zool. Soc.
E. T. Bennett, Esq. Vice-Sec. Zool. Soc.
T. Bell, Esq. F.R.S. &c.
J. Brookes, Esq. F.R.S. &c.

Rev. W. Buckland, D.D. F.R.S. Prof. Min. and Geol., Oxford.
J. G. Children, Esq. F.R.S. &c.
Rev. J. Goodall, D.D.
R. E. Grant, M.D. Prof. Zool. Univ., London.
G. B. Greenough, Esq. F.R.S. &c.
Major-General Hardwicke, F.R.S. &c.
Rev. J. S. Henslow, F.L.S. Reg. Prof. Bot., Cambridge.
A. B. Lambert, Esq. V.P.L S.
J. Lindley, Esq. F.R.S. Prof. Bot. Univ., London.
J. Morgan, Esq. F.L.S.
J. F. Stephens, Esq. F.L.S.
N. Wallich, M.D. F.R.S. Ed. Cur. Bot. Gard., Calcutta.
W. Yarrell, Esq. F.L.S.

To this list additions are still making daily.

COMMEMORATION OF RAY.

The proposal for employing the occasion of the second centenary of the birthday of the illustrious John Ray, which happened on the 29th of November last, for the purpose of a public expression of the high estimation in which he is held at this day by the lovers of every branch of natural history, was eagerly adopted, and the public dinner at Freemasons' Hall was attended by about 130 of the most distinguished cultivators and patrons of science, including most of the officers of the Royal, Linnæan, Geological, Horticultural, and Zoological Societies, the Rev. the Provost of Eton, and several of the professors of the Universities of Oxford, Cambridge, and London.

Davies Gilbert, Esq. M.P., the much-respected President of the Royal Society, took the chair, supported by His Grace the Duke of Somerset, President of the Royal Institution, Lord Astley, and other persons of distinction.

In proposing "The Memory of Ray," the chairman said that he felt it to be his duty to express his sincere acknowledgments to the company for the high honour they had done him in calling him to the station he then so unworthily filled. He was aware that so gratifying a compliment had been paid to him solely on account of his occupying the chair in which the too great kindness of the Fellows of the Royal Society had placed him; but he valued it the more from that reflection. That society had been greatly honoured by having such a distinction conferred upon it; and he spoke the sentiments of every member of the Royal Society when he returned to the company his sincere thanks on their behalf for this distinction. To take an active part on such an occasion must be gratifying to every friend of science and of virtue; but, however much pleasure might be felt in participating in the proceedings of that day, and doing honour to the memory of a truly great man, still far more satisfaction must be derived from a consideration of the good effects which such a meeting must produce. Men who had done good service to their country, whether in the field of science or elsewhere, were entitled to its grateful remembrance. The display of that remembrance was calculated to incite others to an honorable struggle for similar distinction; and he was sure that when these proceedings should become known, they would tend greatly to promote the cultivation of the science of natural history. On the merits of the illustrious man whose birth they had met to commemorate, although any remark from him must be unnecessary, he could not avoid saying a few words. The state of science at the period in which

Ray lived must be so well known to those present, that it must be useless for him to refer to it, except to remind them of the difficulties with which he had to contend. To show the extent and importance of the labours of Ray, he would mention some of the principal works which he had produced. Among them were—'Historia Plantarum Generalis;' 'Catalogus Plantarum circa Cantabrigiam, &c. with Appendices;' 'Methodus Plantarum circa Cantabrigiam,' &c.; 'Catalogus Plantarum Angliæ et Insularum adjacentium;' 'Catalogus Stirpium in exteris regionibus observatorum;' 'Synopsis Methodica Animalium Quadrupedum, &c.;' 'Synopsis Methodica Avium et Piscium;' 'Methodus Insectorum;' 'Observations made in a Journey through part of the Low Countries, Germany, Italy, and France, with a Catalogue of Plants, not natives of England;' to which is added, 'An Account of the Travels of F. Willughby through Spain, and a Collection of Travels into the Eastern Countries;' 'A Collection of English Proverbs and unusual Provincial Words;' 'Dictionarium Trilingue;' 'An Itinerary through England;' 'Translation of Bishop Wilkins's real Character;' various sermons and theological works. The work published by Mr. F. Willughby, under the title of 'Ornithologiæ libri tres,' &c. was known to be principally by Ray. In the 'Philosophical Transactions' were printed, among other papers, On the manner in which Spiders project their Threads; On the Dissection of a Porpoise; On the Swimming-bladders of Fish; On the Effects of Poisonous Roots, and the Virtues of the Leaves of Hemlock; and Observations (1699) made on the Comet that appeared at Rome; and the last of his works which he should mention was 'The Wisdom of God manifested in the Creation.' This had been very frequently reprinted, and was clearly the prototype of a late celebrated book on the same subject. He had read the work of Ray with infinite delight, and it was alike an honour to his head and to his heart. But although his productions were so numerous, it was by their excellence that they commanded attention. Ray was the first who reduced natural history to a system, and prepared the way for those more perfect arrangements which have since had so salutary an influence on its cultivation. It was to his penetrating genius and indefatigable exertions that the civilized world was indebted for many most important discoveries. If he did not himself always arrive at the goal, he pointed out the road; and it was to his pursuing the course he had commenced that we owed our present advanced state in many particulars of natural history. Haller felt how much he owed to Ray, and he termed him "the greatest botanist in the memory of man." Ray very early distinguished himself. While at college he acquired a high fame, and some of the exercises he performed there have been found to be worthy of preservation even to this period. They formed the foundation of some of his late and important works.

"Of this inestimable writer," says Stillingfleet, in his 'Calendar of Flora,' "whose works do honour to our nation, as a late disciple of the great Swedish naturalist justly observes, I cannot help saying further, that no writer till his time ever advanced all the branches of natural history so much as that sagacious, diligent, English observer, whose systematical spirit threw a light on everything he undertook, and contributed not a little to those great and wonderful improvements which have since been introduced."

He was invited to become a member of the Royal Society in 1667; and he happily lived in amity with some of the most able and most virtuous men of his age. It was to do justice to the memory of such a man that they were then assembled, and he would not longer detain them from drinking

with gratitude and veneration to the memory of the disciple of Bacon and friend of Locke, the intimate friend and contemporary of Willughby, and the precursor of Haller and Linnæus.

After toasts to "The Memory of Linnæus," and "The Improvement of Natural History,"—

Mr. Bicheno (Secretary to the Linnæan Society) proposed, "Prosperity to the Royal Society." In giving such a toast, and in such a company, all remark must be unnecessary; still he might be allowed to say, that he proposed it from his heart, and that he did so principally from having, in an official situation in another society, experienced the good effects which proceeded from its fostering care, its kindly protection, and the powerful assistance it extended to other societies, especially to that to which he belonged, when they had arrived at maturity. He then pronounced a warm eulogy on Ray, whom Cuvier had justly called *un Méthodiste*, and whose works he had studied, still with fresh advantage, for the last twenty years. Ray was indeed a methodist: he was the first who arranged the grand outlines of natural history, and enabled every one to become acquainted with the groups, the grand formations of nature. With the minute particulars of his subject, Ray had not much interfered; but he had originated that system of arrangement which gave perspicuity to the labours of others, and had accurately described the character of nature's grand operations. No doubt he had gathered much from Grynæus; but still, even in the application of what he had gathered, he had done a vast deal. Most ages were proud of the advances they had made in science. While, however, we boasted o. systematic arrangement, it should be remembered that, although the natural method was too much overlooked during the latter part of the last century, Ray first discovered its value. As a zoologist, he was not prepared to speak of that great man; but in that branch of natural history with which he might pretend to some acquaintance, he felt an admiration for his genius beyond the power of language to express.

The Chairman, on proposing "Prosperity to the Linnæan Society," gave a sketch of its origin. It was, in truth, a branch of the Royal Society. It had been formed on the suggestion of the late Sir Joseph Banks, in consequence of the multiplicity of business the Royal Society had been called upon to attend to. How well it had discharged its duties the scientific world well knew.

Mr. Lambert, Vice-President of the Linnæan Society, returned thanks; and

Mr. E. Forster, Vice-President and Treasurer, said, that born and educated in the same county with Ray, he had been taught from his infancy to admire that great man; and his admiration soon became veneration, from a study of his writings. Nearly forty years ago he had first visited his tomb, before it had long since undergone a repair at the expense of a gentleman present (Sir Thomas Gery Cullum). In his pilgrimages to Ray's tomb,* he had felt

* It has lately been repaired again by Mr. Walker, the rector of Black Notley. Mr. Tyson, in a letter to Mr. Cole, 1779, says, "One part of my ramble was to visit the last residence of that pious philosopher, Mr. Ray, Black Notley, *con amore*. I made a drawing of the church, and of his monument in the churchyard. The parish clerk had such remembrance of him from others, that he related various incidents. The clerk pointed out to me the farm-house which was once his dwelling. I there saw his library (that is, the room which once contained his books), and his garden below it,—about an acre of ground. Here the father of English naturalists lived employed and happy."

great delight in seeing also the place of his birth, the church in which he had been baptised; and in entering the house in which this good man had lived and died, it was pleasing to reflect that he was treading the very boards which Ray had trodden, and that he was looking, perhaps, on trees and plants which Ray had admired. The Linnæan Society was proud of being thought so nearly connected with the chief labours of Ray; but that great philosopher ought not to be considered merely as a botanist, we must look on his character as a man. "His religion was pure and free from cant; his piety sincere, and without affectation; his morality consistent, and his manners gentle, affable and kind to those around him." One proof only of his integrity need be mentioned, his having resigned his fellowship; and, though reduced to poverty, refused all further preferment in the Church, because he would not declare that those who had sworn the solemn league and covenant might break their oaths; not that he had himself signed it, for he thought it an unlawful oath;—yet he could not conscientiously make the declaration required.

"Prosperity to the Geological Society" having been given, the President (Dr. Fitton), in returning thanks, stated his concurrence in all that had been said respecting the great merit of Ray as a naturalist, and the excellence of his private character. Ray was in fact, he said, an honest man;—he gave up station and emolument rather than swear to what he did not believe;—and if such examples of integrity were not found amongst those who devote themselves to the pursuit of truth, where else, he would ask, should they be looked for? In geology, Ray made many sagacious observations, and entertained some opinions much beyond the state of the subject in his own time. But our chairman had justly stated, that geology, as a distinct branch of knowledge, had not then obtained a name; and in fact it supposes such an advanced state of scientific inquiry, that it scarcely could have existed till a much later period. The geologist, it is true, is in a great measure nothing more than a physical geographer,—and all that constitutes his exclusive business lies within a very narrow compass; but he requires a high degree of cultivation in several other departments of inquiry with which his own is allied, especially in chemistry, zoology, and botany; for what without these would be geology at the present day? Instead of regretting this state of dependence, he was rather disposed to rejoice at it, since it tended to produce more frequent intercourse with those who are engaged in the pursuit of other branches of natural science; so that when he looked about him in such an assembly as the present one, he felt that he was surrounded with benefactors; and great as the merit of Ray unquestionably was, as an original observer of the earth's structure, he was disposed to rate still more highly the services he had rendered to geology, by contributing to the perfection of those other departments of natural history, to which his attention was principally devoted. But there were more general views, which made him rejoice that a meeting like this had been brought together. It proved, and must if possible contribute to increase, the cordiality of intercourse and feeling that distinguish, so very creditably, the naturalists of this country; and it tended also to increase their power and resources. It had been said, perhaps with too much truth, that England, notwithstanding the number and wide distribution of its colonies, has done much less to advance the natural history of foreign countries than might have been expected: occasional meetings like the present must facilitate the inquiries of our naturalists, not only by enabling them to combine their own exertions, but by impressing upon the government of the country the importance and value of the researches in which they are engaged. In a country like ours, the government itself could

not, perhaps, be expected to originate measures for the improvement of natural knowledge; it is for you, therefore, to suggest them; the government can have no other wish than to give effect to the suggestions of disinterested and well-informed men. On every ground, therefore, both of general feeling, and as a member of a society, to the success of which the progress of the other departments of natural history is almost essential, he was happy that this meeting had been held, and had peculiar pleasure in being present upon such an occasion.

Mr. Greenough passed a high eulogy on the character of Ray; and said that the meeting gave a strong proof that honorable exertions were never thrown away. Independent of the inward pleasure they gave, they were sure of receiving the admiration of the good and the informed. After some remarks upon the rapid spread of the study of geology, he concluded by expressing his hope that that science would daily become more general.

"The Zoological Society" was then given; and Mr. Vigors, in returning thanks, spoke of the high sense now entertained of Ray's merits as a philosophical zoologist, and alluded to the advantages which were to be expected from the establishment of the Zoological Society.

On the healths of the naturalists of Great Britain and Ireland being drunk, coupled with the name of Mr. Kirby, the rev. gentleman said that he had never before addressed a public assembly of a festive character; but he felt it right to take that opportunity of testifying his admiration of the great and good Ray. He was great as a natural philosopher, and great also as a moral philosopher. He penetrated the world of science further than any of his contemporaries, and by his exertions formed a bright constellation of information, whose beams had served as a guide and beacon to more modern labourers. In entomology, the branch of science to which he himself was devoted, the naturalist of the present time was indeed deeply indebted to Ray, who had combined the system of Aristotle with that of Swammerdam, and cleared the way for Linnæus. Much had been done to unveil nature, but still much remained to be done; and he hoped that a course of perseverance would be pursued until all was accomplished.

The healths of Cuvier and Jussieu, and the naturalists of Europe, were drunk with much approbation.

Dr. Buckland's health, and "Prosperity to the University of Oxford," having been most cordially received; the learned professor addressed the meeting as follows:

"The President of the Royal Society has already informed you, by a detailed examination of his extensive works, how great are the advantages which natural history has derived from the labours and the genius of Ray; and in the presence of so many illustrious botanists as I now see assembled in this place, it would be highly presumptuous in me to say one word on the benefits, the inestimable benefits, which he has conferred on the science of botany. My excellent friend and colleague, Professor Sedgwick, were he now present (and I regret that severe illness alone has caused his absence), would tell you how extensively the influence of his exertions and his example have operated to excite a taste for natural knowledge in the University of Cambridge,—a taste which he, a member of the same college, and animated with the same spirit as the immortal Ray, maintains and keeps alive in the present generation with a zeal and talent worthy to follow his great predecessor in the field of natural science.

"As a member of the University of Oxford, I rejoice to bear most ample testimony to the lasting benefits which the exertions of the age and friends of Ray have transmitted to that seat of learning, to which it is my happiness

to belong. The labours of Lister, Plot, and Ashmole, of Lloyd, and of Robert Boyle, and the establishment of the Botanic Garden and of the Ashmolean Museum, mark in our University the burst of a kindred flame to that which Ray had excited in the sister University, and laid in Oxford the foundation of that right method of investigation, and of making collections in natural history, which have been transmitted to our own time. In the department of science to which my own attention is peculiarly directed, the genius of Ray had made advances that would do honour to the present day. In his 'Treatise on the Wisdom of God in the Creation,' he points out examples of design and utility in the form and structure and composition of our planet, founded on extensive and accurate observation of facts, and illustrated with sound argument, mixed with much good feeling and good sense. And in his 'Discourses on Chaos, Creation, and Deluge,' there is a knowledge of many phenomena of the earth's surface, the discovery of which the present generation are too apt to consider as exclusively their own: that important and leading doctrine of the Huttonian theory, which attributes the elevation of islands, mountains, and continents to the force of vapour acting from below, is set forth in words that form almost an exact parallel to the statements of the same theory in Playfair's 'Illustrations;' the theory in neither case was new; it was, indeed, handed down from high antiquity, but it is illustrated by Ray with such abundant arguments and examples, derived from the effects of earthquakes and volcanoes which in his time raged so terribly in Jamaica, and with such copious and judicious references to the authentic records of the elevation of Thera, Therasia, and other volcanic islands, that the essence and leading features of much that has been written since, on the theory of elevation and disturbance by subterranean vapours, have been anticipated by Ray. His remarks on the 'Structure of Mountains,' as containing and affording access to metallic veins, their influence on climate, and use in collecting clouds for the formation of rain and production of rivers; his observations also on the general diffusion of springs, and their never-failing supply of water, as derived from rains and dews, show much accurate observation, and point out correct conclusions which have been often repeated, but rarely surpassed, by his followers on these subjects.

"In another curious and extensive branch of geological inquiry which relates to the history of fossil shells, he contended (in opposition to the prevailing theories of his predecessors and of many of his contemporaries) that they were not accidental results of the plastic power and the sport of nature, but the real and true exuviæ of animals that formerly inhabited them. He contended further, that these shells for the most part belong to species unknown in our existing waters, but recommends caution in pronouncing them to be absolutely extinct until we know the contents of the bottoms of all our deepest seas. Can it be said that modern geology has advanced on this point much further than Ray?

"Again, with respect to the prevailing taste and studies of his time, he complains that men are too much occupied in the study of words, and too regardless of the study of things; exclusively absorbed in attending to the works of the creature, and regardless of the works of the Creator; admiring and collecting carved ivory and curious instruments of human invention, but insensible of the exquisite and ten thousand times more admirable mechanism that pervades the animal and vegetable worlds.

"He complains further, that men are too much disposed to rely on the authority of others, and too little willing to undertake the labour of investigating nature for themselves; he stimulates them to exertion by the hope of useful discoveries, any one of which may amply reward the labours of a life.

"Such were the feelings and such the principles by which his energetic soul was ever actuated; such the exertions to which he called on his contemporaries;—constant and strenuous exertions to extend the sphere of human knowledge and useful discovery, and thereby advance the welfare of mankind. And surrounded as I now am by a host of individuals, the most illustrious members of the numerous learned and philosophical societies which in our day have arisen to adorn and benefit our country, I feel that you all not only sympathise with me in admiration of the great example he has set us, but yourselves rejoice to follow in those paths of useful labour which Ray not only pointed out, but was himself indefatigable to pursue. To do just honour to the memory of so great and good a man is the object of this day: a man whom as an individual we must ever esteem, love, and venerate, and whose name the annals of philosophy will never cease to record among the first founders and benefactors of natural science."

On giving "The University of Cambridge," the Chairman took notice of the expulsion of Ray from that University, which harsh act he was disposed to attribute to the persecuting spirit which raged without the walls of that learned seminary. He could say of many of the present members of Trinity College, that they regret that the violence of the times had compelled their predecessors to acquiesce in the retirement of Mr. Ray from his fellowship, for refusing to subscribe a declaration altogether unwarrantable. Oxford had as much to answer for in regard to her treatment of Mr. Locke.

The Rev. Professor Henslow returned thanks. He remarked that the University of Cambridge had, so far as the marble or the canvas could make amends, endeavoured to atone for the little, or, he should rather say, the great, injustice which Mr. Ray had sustained. The bust of that great man was ranged by the side of those of Newton, Boyle, Barrow, Dryden, and Willughby; and his portrait was considered to confer honour on the place in which it was. But Cambridge might with justice boast of possessing a far more powerful proof than those of the estimation in which it held the genius and conduct of Ray. His spirit still lived there: and although the study of natural history had not yet been brought to that degree of perfection there which it might be, he hoped the day was not far off when it would command general attention: such pursuits he considered the best correctives of fanaticism and bigotry.

"The Universities of Edinburgh, Glasgow, and London," and the healths of Baron Humboldt and Dr. Wollaston having been severally drunk, the Chairman retired, amidst the applauses of the company.

The health of Mr. Children, who suggested the commemoration, was then given with hearty approbation, and the company separated, after having spent a day which they will long remember with delight.