

The office of foreign secretary was created in 1723. Of the eight appointed down to 1772, four were doctors of medicine, and they were selected possibly for the same reason as their colleagues among the secretaries. Maty, who was elected in 1772, was the assistant librarian in the British Museum.

The enormously wide area of knowledge from which the officers of the Society were drawn during the first century is in sharp antithesis to the narrow ground of award of the Copley medal, which was first conferred in 1731. The grant of this medal is limited to the author of the most important discovery or contribution to science by experiment or otherwise; and the greater the divergence between the officers' and Copley medallists' lists, the less, naturally, was the limitation of the Fellowship to those interested alone in experiment or observation.

We next come to the Fellows of the Society. The following lists are based upon a rapid reconnaissance of those who occur early in the alphabetical order, using Hole's "Brief Biographical Dictionary" as a means of determining their identity. The names of many Fellows are absent from Hole, and there are some incertitudes, besides which Hole's definitions are very terse. The lists, however, are given for what they are worth; and there can be little doubt that they will soon be replaced by complete and authoritative lists officially compiled. It is important that the Lords of the Privy Council should possess such documents to assist them in the important inquiry with which they are charged; and we may hope that this eagerness to possess is only equalled by the anxiety of the Royal Society to provide them if their compilation be in the interests of truth:—

<i>Archaeologists and Anti- quarians.</i>		<i>Historians.</i>	
Ames, Josh. ....	1743	Abel, Clarke .....	1819
Amyot, Thos. ....	1824	Barnes, Joshua .....	1710
Ashmole, Elias .....	1663	Bates, G. ....	1663
Astle, T. ....	1766	Beaufort, Louis de .....	1740
Ayloff, J. ....	1731	Bernard, C. ....	1696
Baker, G. ....	1762	Birch, T. ....	1734
Brander, G. ....	1754	Clarke, J. G. ....	1792
Bridges, J. ....	1708	Coxe, W. ....	1782
Churchill, Winston .....	1664	Duclos, C. ....	1764
Gale, R. ....	1718	Edwards, B. ....	1794
Gale, T. ....	1677	Ellis, G. A. ....	1816
		Gillies, J. ....	1789
		<i>Philologists.</i>	
		Colebrooke, H. T. ....	1816
		Dickenson, E. ....	1677
<i>Writers.</i>		<i>Poets.</i>	
Askew, Ant. ....	1749	Akenside, Mark. ....	1753
Barrington, Daines. ....	1767	Browne, J. H. ....	1749
Bathurst, Ralph .....	1663	Byron, Lord .....	1816
Becket, Wm. ....	1718	Denham .....	1663
Bentley, R. ....	1695	Dryden, J. ....	1663
Birkenhead, J. ....	1663	Ellis, G. ....	1797
Bowlden, T. ....	1781		
Brocklesby, R. ....	1746	<i>Travellers.</i>	
Brown, R. ....	1811	Bruce, James .....	1776
Bruce, J. ....	1791	Brydone, P. ....	1773
Burnet, T. ....	1748	Carteret, P. ....	1664
Burney, C. (Music) ..	1773	Chardin, J. ....	1682
Cadogan, W. ....	1752		
Chandler, J. ....	1734	<i>Lawyers.</i>	
Edgeworth, R. L. ....	1781	Adair, James .....	1788
Egerton, F. H. ....	1781	Aland, J. F. ....	1711
Farmer, R. ....	1791	Arden, R. P. ....	1788
Green, T. ....	1798	Dalrymple, J. ....	1796

Although the matter has not as yet been inquired into, there is already ample evidence that the foreign members were selected with the same catholicity as the ordinary Fellows. Thus Sorbière, an eminent French *littérateur*, was elected in 1663 (the first year); the Italian historian Gregorio Leti was elected in 1681; and the French historian Michael Le Vassor in 1701.

It does not seem possible that any unprejudiced mind,

NO. 1691, VOL. 65]

after a perusal of the above statements, limited though they are to a point of time, and, in the case of the Fellows, to a few letters of the alphabet, and inaccurate as they may well be here and there, can deny that the reconnaissance affords valuable evidence that the action of the Royal Society for the first century after it had received its charters was as broad as the charters themselves. The Society tried to do, and succeeded in doing, the duty which the charters imposed upon it.

We learn from the above statements that for the period over which my hasty inquiry has gone, Britain possessed a general organisation of learning as complete, though not so detailed, as that of the Institute of France or any other foreign academy to-day. King Charles II. had, in fact, in his charters, and the Royal Society had, in fact, in its action upon them, anticipated the work of Napoleon by very nearly a century and a half; the portals of the Royal Society and of the Institute of France were equally wide; and wide enough to admit the most illustrious men produced in each country.

If I have erred in any way in reading the facts or in drawing conclusions from them, I sincerely trust that someone with more leisure and knowledge than I will discover where I have gone wrong and at once put the matter right. I am the more anxious that this should be done because I gather from the petition of the Royal Society's Council to King Edward VII., which was printed in the *Times* of February 27, that the condition of things which the facts reveal is either unknown to the Council or regarded by them as a matter not worth mentioning.

In that petition His Majesty is informed that the President and Council are of opinion that the studies which it has been shown were fully provided for by King Charles II.'s charters to the Royal Society, and "taken care of" for, at all events, the first century to which my inquiry was limited, "ought to be taken care of by some academic organisation, and that this should be effected, not by the Royal Society taking charge of these studies, but by the establishment of some other body."

I submit, Sir, that the view that a complete inquiry should be made before any step be taken towards creating a new body to do what the charters of King Charles II. enjoined and empowered the Royal Society to undertake is vastly strengthened by the facts now brought to light, which show us what the Royal Society actually did.

This inquiry was thus referred to in the petition to the King, dated February 14, which was signed by many eminent representatives of the intellectual, industrial and other forces of the Kingdom:—

We Your Petitioners humbly pray that Your Majesty may be graciously pleased to cause an inquiry to be made with a view of instituting a general and formal organisation of all the studies depending upon scientific method now carried on similar to that inaugurated for the philosophical studies of the seventeenth century by the charters of His Majesty King Charles II.

I, am, Sir,

Your obedient servant,

NORMAN LOCKYER.

Athenæum Club, March 11.

#### ANNOUNCEMENT OF NEW MAMMALIAN REMAINS FROM EGYPT.

THE discovery of ancestral Proboscidean and other remarkable mammalian forms in the Egyptian desert has already been noticed in *NATURE* (vol. lxiv. p. 582). Dr. C. W. Andrews's preliminary descriptions of the remains show that the deposits are of deep interest to palæontologists and other students of mammalian morphology and distribution. Mr. H. J. L. Beadnell now announces, in a pamphlet of two pages of text, illustrated by six plates, that explorations of the desert bounding the

Fayum depression have led to the discovery of several new creatures. "The most important of these," he says,

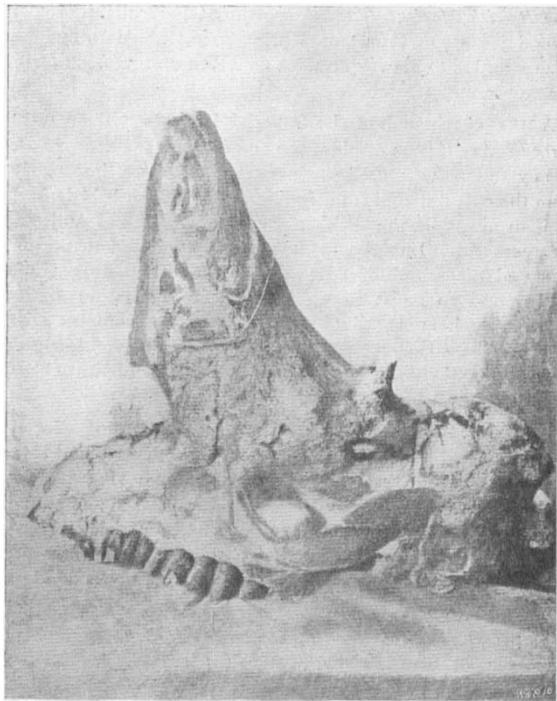


FIG. 1.—*Arsinoitherium Zitteli*, Beadn. Side View.

"is a large, heavily built, ungulate, about the size of a rhinoceros, and for which the writer proposes the generic



FIG. 2.—*Arsinoitherium Zitteli*, Beadn. Back View.

name *Arsinoitherium*, from Queen Arsinoe, after whom the Fayum was called in Ptolemaic times, the species

NO. 1691, VOL. 65]

being *A. Zitteli*, in honour of the eminent geologist, who may be regarded as the pioneer of geology in Egypt, and whose work when attached to the Rohlfs Expedition of 1873-74 is well known to all geologists." The accompanying illustrations, reproduced from the paper, show a side view (Fig. 1) and a back view (Fig. 2) of the type specimen.

#### BRYAN DONKIN.

BY the death of Mr. Bryan Donkin at Brussels on March 4 the engineering profession has lost one of its members who devoted himself with more than ordinary assiduity to the scientific side of his calling. The name of Bryan Donkin was eminent in the world of mechanical engineering for the whole of the last century. The late Mr. Donkin succeeded, in due course, to the management of the business which his grandfather, the first Bryan Donkin, had founded in 1803 for the manufacture of paper-making machinery; a new process for producing continuous rolls having been then recently introduced. Bryan Donkin, jun., as the subject of our memoir was known until quite recent times, was born in 1835, and was educated at University College, London, and at the École Centrale des Arts et Métiers in Paris, where he was for two years. After that he was apprenticed to his uncle at the Bermondsey works, his father, John Donkin, having died at a comparatively early age. In 1859 he went to St. Petersburg to superintend the erection of a large paper mill which was being established under the Imperial Russian Government for the manufacture of bank notes and State papers. He returned to this country and in 1868 became a partner in the Bermondsey firm. In 1889 the business was turned into a limited company, of which Mr. Donkin was chairman.

It was not, however, as the head of a manufacturing business that Mr. Bryan Donkin was best known in engineering circles, but as an experimenter and a student in thermodynamics and a reader of papers before technical societies. His first important work was undertaken in conjunction with Mr. Farey, who was also a partner in the Bermondsey firm. The latter had invented a steam-engine, which was known by his name, and it was determined that a complete test should be made to ascertain its efficiency. One of these engines had been erected to drive a paper mill in Devonshire, and the method of testing by measuring the heat discharged with the condensing water was adopted. The principles then followed are now well known, but thirty years ago scientific testing was a very rare thing among engine makers. The temperature of the water was naturally not difficult to ascertain, but to measure the volume with accuracy was a formidable task. How this was done by means of the notched weir and the application of a simple hydraulic law is too familiar to all engineers to need describing afresh.

Mr. Donkin carried on an extensive correspondence with continental engineers; probably he was more closely in touch with foreign scientific experts in the field of steam engineering than any of his compatriots. He devoted a great deal of attention to the use of superheated steam, and in the course of some experiments he devised an instrument he designated the "steam revealer." It consisted essentially of a glass vessel into which steam from the engine cylinder was admitted. By observing whether the steam was transparent or was clouded by the presence of watery vapour, it was possible to estimate if the steam were either superheated or saturated, or whether liquefaction had set in. A paper on this subject was read by its inventor before the Institution of Mechanical Engineers in October, 1900. Of late years Mr. Donkin devoted a good deal of attention to internal combustion motors. A book on "The Gas