

## Early Science at Oxford.

April 20, 1686. Dr. Plot read an account of making brasse, as it is practised in Holland.

April 22, 1684. Dr. Smith communicated some abstracts of letters, he lately received from beyond Sea.

From Paris: Monsieur Auzout affirms, that no great Loadstone, tho capped, will take up above 12, or 15, times its weight, but, he says, that in Italy he has seen little Loadstones, which have rais'd 80 times their weight, and some 140 times their weight.

In a certain province of Nova Francia, there is so great a quantity of salt peter in ye feilds, that ye oxen there are so salt that they cannot eat their flesh, for 3 or 4 months in ye year, ye steams of salt peter falling in that abundance upon ye grass.

Sheep in Affrick, that have teeth with *aurea armatura*.

Bees in ye West Indies which have no sting; which place ye young ones in their honey; and their faeces in separte cells: their honey is as clear as water.

From Liège: On ye 4th of February S.N. severall Colliers were imprisoned in a Colepit at Herstol, half a league from Liège through a vein of water gushing in very violently upon them. Twenty four days were spent in drawing off ye water, and upon ye 25th, they were taken up all alive, not haveing had one morsell of bread during all that space; and subsisting onely upon a spring that flowed near them: a great quantity of this water was evaporated, to try, if they could discover any thing of nourishment in it, more than in common water, but they found nothing but a scarce perceptible calx remaining.

From Paris: A New Mathematicall Instrument lately invented at Paris, made very comodious for travelling, and so light, that it may be carried in one's pocket; it serves for a semicircle, sector, square, measuring all sorts of angles whatsoever, takeing ye weight of bullets, ye declination from ye North, ye inclination, or reclination, of any wall, or whatever it be, and many other uses it hath, which seem to be demonstrable.

Dr. Plott brought in an account of ye effects of ye late hard frost on ye vegetable kingdom, drawn up by Mr. Bobart, Gardiner to ye University. Capt. Ralph Sneyd of Bradwell in Staffordshire, sais that a great oak at Chebsey in that County, vallued at 12d. ye last Autumn, was splitt quite thro by ye frost this Winter. Dr. Plot also informed ye Society, that both resinous and gummy, trees have suffered very much by ye last Frost; but ye latter much more than ye former: likewise he shewed ye Society a lamp, whose wick was made of Salamander's wool, in order to a Discourse of sepulchrall lamps now under his hands. A letter was lately received from Mr. King of Ingestre, in Staffordshire, concerning an equinoctiall Diall in that Country, representing a booke opened, ye edges of ye booke were Gnomons, casting a shade on ye opposite side, where ye hours were express by parallel lines.

April 23, 1686. Being St. George his Day, ye day of Election, Dr. Wallis was chosen President, Dr. Plott Director of Experiments, Mr. Caswell Treasurer, Mr. Bainbrig and Mr. Walker Secretaries.—Ordered that ye payments be sunk down to 2s. 6d. a quarter, for ye year ensuing.

1690. Ordered by the Society, that all members of the Society who have paid their arrears on Lady Day, 1688, are to receive six books of Aristarchus, printed at the charge of the Society.

Officers for the ensuing yeare: Dr. Bathurst President, Mr. Pit and Mr. Hans Secretaries, Dr. Musgrave, Director of Experiments, Mr. Pullen, Treasurer.

## Societies and Academies.

LONDON.

**Physical Society**, March 13.—Jas. P. Andrews: The variation of Young's modulus at high temperatures. The variation is found for zinc, silver, phosphor-bronze, lead, and soda glass by a static method, to within about 150° of the melting-point. It varies exponentially with temperature, so that  $q$  (Young's Modulus) =  $q_1 e^{-b_1 t}$  (where  $q_1$  and  $b_1$  are constants) up to a temperature roughly half-way from absolute zero to the melting-point, and  $q = q_2 e^{-b_2 t}$  for the remainder.—E. G. Richardson: The critical velocity of flow past objects of aerofoil section. By observations of the "Æolian tones" of vibrators of aerofoil section, critical values for flow past an object of aerofoil section have been obtained of a fluid incident at various angles. The minimum value of  $VL/v$  for unsteady flow falls from 60 at 0 incidence to 45 at 20, and then more rapidly.—J. Brentano: A focussing method of crystal powder analysis by X-rays. For any given angle of reflection, a surface of double curvature can be found, such that it will reflect X-rays coming from one point, to any other definite point. For an element of this surface, situated so as to be distant from the two points by lengths  $a$  and  $b$  respectively, the relation  $\sin \alpha / \sin \beta = a/b$  must be satisfied, where  $\alpha$  and  $\beta$  are the glancing angles of incidence and of emergence of the X-rays with respect to the surface. An arrangement for crystal analysis based on this relation is discussed.

DUBLIN.

**Royal Irish Academy**, March 16.—J. J. Nolan, R. K. Boylan, and G. P. de Lachy: The equilibrium of ionisation in the atmosphere. The large ions in the atmosphere carry single electronic charges. They constitute a constant fraction of the nuclei of the atmosphere, and the ratio of the uncharged nuclei to the large ions of one sign is approximately 1.28. The equilibrium between small ions ( $n$ ) and large ions ( $N$ ) is determined by the equation  $q = an^2 + 2\eta_2 Nn$ ,  $\eta_2$  being the recombination coefficient between small ions and large ions of the opposite sign. Where large ions are plentiful,  $q = 2\eta_2 Nn$ . The value of  $\eta_2$  is  $9.7 \times 10^{-6}$ . The large ions exert a marked effect on the atmospheric potential gradient.

PARIS.

**Academy of Sciences**, March 2.—G. Koenigs: The differential equations of movements with two doubly decomposable parameters.—Maurice Hamy: The photography of the stars in full daylight. A modified Lindemann method is described which permits of the determination of the magnitude of the stars photographed.—Roland Thaxter was elected corresponding member for the section of botany in succession to the late M. De Toni.—R. H. Germaÿ: A method of integrating by successive approximations of systems of partial differential equations of fixed form.—Mandelbroit: The analytical prolongation of monogen functions in the sense of Cauchy into isogen functions in the sense of Volterra.—René Lagrange: The quadratic integrals of the equations of mechanics.—St. Kempisty: Approximative (asymptotic) limits.—Harald Bohr: Nearly periodic functions with one complex variable.—Salet: The independence of the velocity of light and of that of the source of light.—E. Delcambre, Ph. Wehrlé, and L. Gouton: The variability of true astronomical refractions. A description of an experiment from which it is concluded that on a single angular measurement of isolated stars, the approximation to 0.01" is illusory,