## Early Science at Oxford.

**September 9, 1684.** A letter from Mr. Creech, dated from Worcester, September the 4th, was read; it gave an account of a Woman in Worcester, who, for these twenty years last past, has every Sunday had a Convulsion Fit, and at no time else, unless she puts both her feet over her threshold; which if she does, a fit certainly seizes her; the case of this woman is drawn up by ye learned Dr. Cole, Physitian at Worcester, and was comunicated to severall of the physitians in Oxford about a year and a half since.

Mr. Francis Davenport's account of the Tides at Tunquin and Mr. Halley's Theory of those Tides, were read, and will be printed very suddenly.

Dr. Plot communicated an Instrument made by Mr. Bard of Fretwell, for ye better æstimating ye increase, and decrease, of ye weight of oil of vitriol exposed to ye open air: ye Doctor promises us to make use of it, and give ye Society an account of ye success.

Dr. Plot also communicated an account of ye weather here at Oxon: during ye last month; and an abstract of a letter from the Reverend Dr. Thomas Smith, now at London, who says, that a Naturall History of Scotland is lately printed at Edinborough by Sir Robert Sibbald.

The Doctor further communicated to the Society that, in a visit made by himself to ye men of Siam lately come into England, he received from them a present of a black lead pen of their country, and a nut whose kernell is call'd Areka, which has a smart aromatick tast, and is said to be purgative.

He understood from them, that their alphabet, and numerall figures, were ye same with those of ye Indians.

Dr. Smith shewing himself very ready to oblidge ye Society, by proposing to those men of Siam any quæries which shall be sent him hence, it was offered by Mr. Bernard, that ye Doctor be desired to discourse with them on ye severall heads of Dr. Plot's sheet of enquiryes.

There being some discourse concerning Barometers, particularly it being affirmed, That a candle placed near ye upper and empty part of ye Tube will make ye quicksilver descend; it was proposed by Mr. Bernard, that tryall be made, whither spirit of hartshorn, applied to the top of ye Tube, will cause ye quicksilver to ascend?

Mr. Præsident proposed that enquiry be made whether the quicksilver arises and falls in old barometers, to as many degrees, as it did in ye same barometers, when they were new? In one, which he for many years made use of, he has found it does not.

Dr. Plot presented ye Society with a peice of heavy wood from Jamaica, called *Kicongo*; 'tis of a smell like *Enula Campana*. Some Experiments will be tried on it very suddenly; and an account of them brought in to the Society.

The Doctor, haveing finished his discourse *de Origine Fontium*, was, at this meeting, desired by ye Society, to communicate it to them, and begin reading it the next week.

The Society then tooke into consideration the enlarging of their Correspondence; for ye effecting of which, they concluded, that some attempts be made for ye settling a Correspondence in Scotland, in like manner, as it is now carried on between ye Royall Society, and that of Dublin, and this of Oxford; in order whereunto, it was ye most humble request of this Society to Mr. President to take on him ye trouble of writing to the Heads of ye Universitys in Scotland, concerning this affair.

## Societies and Academies.

LONDON.

**Institute of Metals** (Autumn Meeting, Glasgow), September 2.—J. H. **Andrew** and Robert **Hay**: Colloidal separations in alloys. The $\beta$ constituent may break down into colloidal $\alpha$ and colloidal $\gamma$, and upon submitting these to an electrical current, the colloid is destroyed and the crystalline phase begins to make its appearance. The ageing of duralumin may be due to the deposition of the magnesium compound in the colloidal form, when the increase in hardness would be due rather to the fineness of state of division of the separating phase than to its specific properties. —John S. **Brown**: The influence of the time factor on tensile tests conducted at elevated temperatures. With non-ferrous alloys there is a critical temperature condition, above which the rate of application of the load has an important influence on the observed strength. This time factor tends to lose its effect when the rate of loading is kept below 1 ton per sq. in. per day, and this value is consequently put forward as of basic importance in such investigations. —R. B. **Deeley**: Zinc-cadmium alloys. A note on their shear strengths as solders. A substitute for brazing spelter was required for the motor-cycle industry. The working temperature of the substitute solder had to be below that likely to promote coarse crystallisation of the hard-drawn steel tubing of the frame, and the melting point had to be sufficiently above the enamel stoving temperature (about 180° C.) for joints made with the alloy not to fail during enamelling. Zinc-cadmium alloys in pure shear show the strongest alloy to be near the eutectic composition. This alloy is considerably stronger than tinman's solder, 8 tons/sq. in. compared with 4 tons/sq. in.— J. W. **Donaldson**: Thermal conductivities of industrial non-ferrous alloys. The thermal conductivities of 70 : 30 brass, high tensile brass or manganese bronze, Admiralty gunmetal, ordinary gunmetal, bearing phosphor bronze, white bearing metal, and monel metal are low, ranging from 0·067 for monel metal to 0·242 for 70 : 30 brass. Increasing the temperature increases the conductivities. The alloys of tin and copper have a lower conductivity than those of zinc and copper, while nickel lowers considerably the conductivity of an alloy containing it.—Marie L. V. **Gayler**: On the constitution of zinc-copper alloys containing 45 to 65 per cent. of copper. In an equilibrium diagram, no change in microstructure of alloys consisting wholly of the $\beta$ constituent could be detected. —J. L. **Haughton** and W. T. **Griffiths**: The $\beta$ transformations in copper-zinc alloys. The change of resistivity with temperature was determined for some alloys containing from 46 to 63 per cent. copper. Above 55 per cent. copper the $\beta$-transformation temperature is 453° C.; between 55 per cent. and 51 per cent. copper it takes place at temperatures rising from 453° C. to 470° C.; with less than 51 per cent. copper the transformation temperature is 470° C. These data are opposed to the theory that this is a eutectoid transformation. The specific resistances at room temperatures were also measured after annealing just above the transformation point. The resistance falls rapidly as the copper decreases from 61 per cent. to 53·5 per cent., and less rapidly to about the 50 per cent. copper alloy; it rises steeply from this point with further decrease of copper content. Thus the two boundaries of the field at room temperature occur at 50·0 and 53·5 per cent. of copper.—C. H. M. **Jenkins**: The physical properties of the copper-cadmium alloys rich in cadmium. Alloys containing up to 5 per cent. of copper in the