

## Early Science at Oxford.

February 29, 1683/4. Dr. Wallis was pleased to inform us, that ye way commonly used in opening frozen pumps, with salt, has been known to make pumpwater, under his house, apt to curdle in boiling, and unfit for washing, which naturally is fit for use, and bears soap very well; but ye water probably will recover itself as soon as ye salt shall be drawn off.

Dr. Pit acquainted ye Society, that sallet oyl cannot be made to boyl over; this has been observed by late experiments, and will give some light to that custom of ye sugar boilers, who used to throw a piece of sewet, candle, etc into their sugar; and by these means keep it from boiling over.

Some Queries concerning the splitting of Trees by ye late great frost, were brought in by Dr. Plot: they are as follows:—Whether any of these trees have split with a noise? Whether they are split quite through, or only on one side? Whether they are all split to ye same point of ye Compass? Whether ye splitting be more common in ye Trunk, or in ye Boughs? Whether any Ice has been found in ye vessels of ye wood? Whether ye trees split be any of them dead? Whether any of ye trees split have closed since ye thaw? Whether ye Bark be loosned by ye splitting, from ye wood?

Dr. Wallis mentioned vast numbers of dead Congers, which were thrown up by ye sea, at Dim-Church wall, along ye coast of Kent, during the late hard frost, as also about eight years ago; the same was observd on ye Severn shore in Somersetshire, about twenty years ago.

March 1, 1686/7. Upon mentioning of Mr. Hooke's Discourse about the changes which he supposes to have been made upon the surface of the Earth, Mr. President observed that the latitude of Oxford is not sensibly altered in these four hundred or five hundred years last past, as appears by the Alphonsine Tables and some MSS. in Oxford, in which though there may be about one minute more, or one minute less than ye present latitude, yet that may well be attributed to the unaccurateness of the observations.—It was stated at this meeting that the age of one Mother George, now living in Oxford, is about one hundred and eleven years.

March 2, 1685/6. Dr. Plot shewed ye Society two Swedish Runestocks or Primestocks, and one book almanack; also severall old English almanacks, of which some were for families, others for private persons; some of brasse, others of wood, all perpetuall.

March 3, 1684/5. Mr. Leigh gave a farther account of ye Balsamic Earth. It will take fire at a candle, and, if tost in ye air, will burn exactly like a torche, an oyl dropping from it scarce distinguishable from ye oyl of amber. Any other earth whatsoever, if put into ye place, where this is dug, will in a year's time be exactly the same with this. 4 drops of this oyl is a present Cure for ye Colic, and may therefore in all probability be proper in those distempers, which affect the nerves.

A letter from Mr. John Aubrey, dated London Feb. 27, mentioned an opinion that some merchants were of; that beasts are generally offended at a Barbary Lion's skin. There being one of these skins in ye Musæum Ashmolianum, he desires, ye truth of this matter may be enquired into, which was ordered to be done.

March 6, 1687/8. An account was delivered of what appeared to Mr. Pit upon the dissection of a dog, that had Mercury injected into one of the jugulars. The mercury was thrown out of the blood into the cavity of the abdomen, as likewise some appearance of it in the other cavities of the body.

## Societies and Academies.

LONDON.

Royal Society, February 19.—O. W. Richardson and A. F. A. Young: The thermionic work-functions and photoelectric thresholds of the alkali metals. The photoelectric threshold for normal potassium is close to 7000 A.U., which agrees with the known wavelength of maximum activity  $\lambda_{max}$  and the equation  $\lambda_0 = \frac{2}{3}\lambda_{max}$ . Uncertain traces of a thermionic threshold agreeing with this have been found at about 200° C. in one experiment, but the thermionic thresholds usually effective at this and lower temperatures are of a much lower magnitude, even under the best vacuum conditions. A common thermionic threshold effective at about 200° C. corresponds to  $\lambda_0 =$  about 10,000 A.U. A photoelectric emission with this infra-red threshold has been got by exposing potassium to a luminous discharge in hydrogen or water vapour. This may be due to the growth of small patches normally present. There is no evidence of photoelectric activity further out in the infra-red, although there is a thermionic threshold which corresponds to  $\lambda_0 = 30,000$  A.U. The glow discharge not only brings out undeveloped thresholds, but it also augments the normal emission.—J. H. Brinkworth: On the measurement of the ratio of the specific heats using small volumes of gas. The quantity actually measured is the cooling effect in adiabatic expansion, *i.e.* the ratio of the drop in temperature to the drop in pressure. These two quantities are measured directly, the former by using a suitable platinum thermometer, and the latter from the readings on an oil gauge. The values of the ratio of the specific heats thus experimentally obtained are used for the calculation of the specific heats of air and of hydrogen. The specific heat of air at constant pressure is practically constant, and equal to 0.2395 cal./gm. °C. over the temperature range 155° to 290° A. The molecular heat of hydrogen falls rapidly from 4.88 at 290° A. to 3.30 at 90° A. None of the theoretical curves representing the variation in the molecular heat of hydrogen agrees with the experimental curve, the divergence, at some temperatures, being certainly five times greater than an outside estimate of the inaccuracy of the experimental results.—F. H. Constable: The catalytic action of copper. Part VI. Chemical reaction occurs only when an alcohol molecule is adsorbed over a characteristic arrangement of copper atoms, called a reaction centre. There is a large variation in the number of atom centres lying beneath one adsorbed alcohol molecule on various crystal faces: thus the reaction centre density varies also. The activity of the surface is controlled by the exponential activation factor, and by the reaction centre density on the surface.—Part VII. The rate of dehydrogenation of ethyl and butyl alcohols has been studied at pressures from 10 cm. of mercury to two atmospheres. The reaction velocity was found to be independent of the pressure.—V. H. Stott, Edith Irvine, and D. Turner: Viscosity measurements with glass. For the range  $10^6$  to  $10^{17}$  poises, the apparatus is a modification of the method of Trouton and Andrews, in which the resistance to torsion of a circular rod is determined. This apparatus may be readily modified so as to extend its applicability down to  $10^4$  poises. Measurements of lower viscosities down to about  $10^2$  poises depend on determinations of the rate of fall through the glass of a partially counterpoised iridio-platinum ball. Temperature uniformity in the latter case has been achieved by the use of an electrically heated "black body" furnace possessing novel features.—W. G. Palmer and F. H.