

Early Science at Oxford.

June 24, 1684. Mr. Musgrave further informed the Society that if ye Jugular veins in men communicate one with ye other, in ye same manner, as they did in his Dog, we may then argue hence, that bleeding in ye jugulars, is more proper in some distempers of ye head, than severall physitions (who suppose no considerable communication between ye brain, and externall jugulars) will allow.

It was ordered, that ye Eclipse of ye Sun, on ye 2nd of July next, be strictly observed, and that all things necessary for that purpose be made ready by that day.

Mr. Walker mentioned a Barometer he has, ye tube of which, at about 27 inches from ye open end, turns in an obtuse angle, for ye better observing ye ascent of ye quicksilver. He was desired to shew it ye Society at ye next meeting.

June 26, 1688. The thanks of the Society are returned to Mr. President, for a letter communicated by him from Mr. Hillyer, being a farther account of customs and religion of ye Indians.

In consideration of the great pains and trouble Dr. Wallis has been at in the care of printing *Aristarchus*, the Society give order that their thanks be returned to the Doctor.

Ordered that an *Aristarchus* be sent to Dr. Garden, one to Dr. Middleton. To the Vniversitys of Aberdeen, and Glasgow, Edinborough and St. Andrews. To Mr. Molineux, and the Provost and Library of Dublin. To Mr. Ash. To Mr. Jessop. To Dr. Lister. To the Secretarys of the Royall Society, and the Library of the Society, and the President of the Royal Society. To Dr. Chamberlain. To Mr. Flamstead. To Dr. Pitt. To the Vice-chancellor and Publick Library. To Mr. Halley. Ordered that Mr. Charlet deliver one from the Society to Mr. President.

The Tutenage of Japan was shewed to the Society, being used for paper to wrap up goods, or make sacks: Of the same sort being thicker are made the tea-pots. It is a metall finer than lead or tin, but neither the one nor the other. The thanks are returned to Dr. Hide for his communication of the heads of some Japan matters he has communicated to ye Society.

June 29, 1686. Mr. Caswell communicated part of a letter from Mr. Halley, wherein he acquaints him that he intends to try some experiments concerning the specific gravity of the air. A discourse of Dr. Lister's read, concerning the improvement of *Agriculture*.

July 1, 1684. Mr. Walker presented his Barometer, mentioned in ye Minutes of ye praceding week, to ye Society; ye tube of it, at ye distance of (about) 27 inches from ye upper end, was bent, in an angle of 108 degrees, for ye better observing ye motion of ye quicksilver, which, in ye sloaping part of this tube, does rise, and fall, 2½ inches, for one inch in a tube exactly perpendicular.

Mr. Bernard was pleased to acquaint ye Society, that a spot in ye Sun was seen by Mr. Caswell on Thursday last, and by himself at ½ hour after 7 in ye morning, at which time it was not far from ye rim of ye Sun: it appeared to be a thick firm spot, and to take ye same course, with that observed, not long since, by Mr. Flamstead, (*vid.* Minutes of May 27, 1684;) for it passed over near ye center of ye Sun. He tells us farther, that he looked after it again on ye Monday following but could not see it; it had made its exit. We are promisd a more full account of this matter.

Dr. Bathurst informed ye Society, of a relation he lately received out Somersetshire, concerning ye great damage done to ye beans in that county, by vast numbers of caterpillars.

Societies and Academies.

LONDON.

Royal Society, June 18.—Lord Rayleigh: Luminous vapour from the mercury arc and the progressive changes in its spectrum. This investigation deals with the luminous stream of vapour observed when mercury distils away from the arc *in vacuo*. The lines of the arc forming known spectrum series are for the most part strongly developed in the vapour stream. An exception is line 1850 *1P*—*1S*, which is strong in arc, but inconspicuous in vapour. Higher members of various series appear in greater relative intensity in vapour than in the arc. The continuous spectrum of mercury, not noticeable when the vapour first emerges, becomes more conspicuous as the vapour matures. In the limit the spectrum tends to consist simply of line 2537 and continuous spectrum. If the vapour is passed through a metal tube maintained at negative potential, the luminosity of the line spectrum in general tapers down to a sharp point, beyond which it disappears. Line 2537 behaves differently. Much of its light tapers down to a point which, however, is beyond the place where the other lines are extinguished, but a residuum is of a different origin and does not admit of extinction. The light of the band spectrum also passes on.—J. C. McLennan and G. M. Shrum: On the origin of the auroral green line 5577 Å and other spectra associated with the aurora borealis. In studying the effect of large admixtures of helium on the spectrum of oxygen, a hitherto unknown line has been photographed. The wave-length of this line has been found to be 5577.35 + 0.15 Å. It is very sharp and is subject to great fluctuations in intensity. Evidence has been produced to prove that this line is identical with the auroral green line $\lambda = 5577.350 + 0.005$ Å. This line must be attributed to some hitherto unknown spectrum of oxygen, and it is not a limiting member of the ordinary band spectrum of oxygen. Helium has been used to bring out the bands of nitrogen, with an intensity distribution similar to that found in the aurora. The possibility of metastable helium acting as the exciting agent in the auroral spectrum has been discussed.—J. C. McLennan and A. B. McLay: On the series spectrum of gold. Absorption spectra of the vapours of gold, silver and copper in the Schumann region have been investigated. The second members of principal series of doublets in the gold arc spectrum are $\lambda = 1646.71$ (I vac.) and $\lambda = 1665.75$ (I vac.). Similarity exists between the term systems gold I, copper I, and zinc II, in respect of their inverted δ terms, and the term systems of gold I and copper I in respect to certain special π terms. The term systems silver I and cadmium II have not been shown to include either inverted δ terms or the special type of π terms mentioned.—W. A. Bone, D. M. Newitt and D. T. A. Townend: Gaseous combustion at high pressures, Pt. V. The authors describe further experiments upon the explosion of hydrogen—air and carbon monoxide—air mixtures at initial pressures up to 175 atmos. It is shown, *inter alia*: That, in general, and except where N_2 -activation intervenes, as in carbon-monoxide-air explosions, time for the attainment of maximum pressure diminishes as initial pressure increases. The "corrected" P_m/P_i ratios for explosion of any and all mixtures investigated increased in notable degree with initial firing pressure, due probably to increasing opacity of the gaseous medium to the radiation emitted during explosions. There were no signs of "after-burning" in any of the explosions when P_i exceeded about 10 atmos., although it could usually