

Early Science at the Royal Society.

March 9, 1663. Sir Robert Moray mentioned, that his majesty had the curiosity of weighing himself very frequently, in order to observe the several emanations of his body before and after sleep, tennis, riding abroad, dinner and supper; and that he had found, that he weighed less after tennis by two pounds three ounces (but his majesty drinking two draughts of liquor after play, made up his weight) after dinner, more by four pounds and an half.

March 10, 1669. An experiment was made in the artificial tin-arm of Dr. Goddard's contrivance, to find whether pulsation was made by an intumescence of the artery, or not? And it was found by several trials, that as the pulse beat, so the water rose in the glass-cane adapted to the said tin-arm: And this was found to hold in many pulsations, even to forty strokes; but the water was observed to ascend unequally in the glass.

March 11, 1668. There were dissected some oysters; and because the function of many parts of them were not yet known, Dr. King was desired to produce at his first conveniency a live oyster, and lay open all the parts thereof, to the end that those, that are well known, might give light to those that are not so.

1674. The person, who should have made a discourse this day, being by urgent occasions detained from the Society, there was read out of the Register a discourse formerly given in by Mr. Boyle, about shining flesh.—This gave occasion to some hints for a general hypothesis for explaining the nature of light.

March 12, 1672. There was read a Latin letter of Dr. John Baptista Gornia, physician to the grand duke of Tuscany, dated at Florence, containing the writer's opinion concerning the disease, of which Dr. Wilkins, bishop of Chester, died.

1673. Dr. Grew produced two intire microscopical observations, about the texture of a piece of a trunk of a walnut-tree, and of one of the trunks of a hazel-nut.

March 14, 1665. Mr. Daniel Cox gave some account how he was employed in examining the nature and figure of all sorts of salts, intimating that he conceived, that the origin of all salts was sea-salt. It being demanded, how then, and by what he distinguished salt? it was answered, by the alteration of the figure caused by the addition or mixture of something else.—He was urged to go on vigorously on so noble a subject.

1666. Sir Theodore de Vaux produced a paper containing a description of the tallow-chandlers' trade, and the ways of making candles with the pith of rushes, and of making candles in moulds, and cheap candles for poor men to burn.

1682. An account being given of Dr. Plot's having examined some earths sent by Mr. Flamstead, which the Dr. found to be different marls, Sir William Petty took occasion from hence to move, that the *criteria* or distinguishing qualities of several natural things might be so agreed on, that there might be no ambiguity in the terms. He enquired particularly what was the notion of marl, fullers-earth, clay, etc.? The words *considerably bigger* having been used in some things, Sir William Petty cautioned that no word might be used but what marks either number, weight, or measure.

March 15, 1676. Mr. Oldenburg produced a letter sent to him by an anonymous member, concerning Mr. Henry Bond's book "Longitude found," which, being read, it was ordered that Mr. Colwell should be desired to ask Mr. Bond, how he came to know the difference of longitude between London and Waygatz to be fifty-eight degrees.

Societies and Academies.

LONDON.

Royal Society, March 6.—E. D. Adrian and Sybil Cooper: The electric response in reflex contractions of spinal and decerebrate preparations. Records have been made of the reflex action currents in the tibialis anticus and vasto-crureus of spinal and decerebrate animals. The reflex contractions were produced by electric stimuli applied to the popliteal nerve. In the flexion reflex of the spinal preparation the electric response consists of a regular series of "primary" waves having the same frequency as the stimuli. If the stimuli are very strong and their frequency below 50 a second, small "secondary" waves may appear. In the decerebrate flexion reflex the secondary waves are usually present so long as the frequency of stimulation is low. In the decerebrate crossed extension reflex the secondary waves are still more conspicuous, and may be completely absent. These results agree with the observations of Liddell and Sherrington on the reflex mechanical response. The secondary waves are not due to proprioceptor impulses from the contracting muscle, for they persist after injections of novocain into the muscle.—A. Fleming: A comparison of the activities of anti-septics on bacteria and on leucocytes. Leucocytes which have been allowed to emigrate from a blood clot on to the walls of a capillary tube, or defibrinated blood containing its full quantum of leucocytes, exercise a powerful bactericidal action on staphylococci. When antiseptic solutions are brought into contact with such leucocytes or blood, the destructive action of the antiseptic on the leucocytes is much more marked than it is on the bacteria. When added to infected blood in certain concentrations, most of the antiseptics permit the development of almost all the bacteria implanted, although the blood without any antiseptic will destroy from 90 to 100 per cent. of the added cocci.

Faraday Society, February 18.—Sir Robert Robertson, president, in the chair.—A. P. Laurie: Suggestions for a magnetic theory of valency. If we assume an atom of the Langmuir type and also assume that the electrons themselves can be regarded as small electro-magnetic units produced by movement in an orbit much smaller than the diameter of the atom, a magnetic field is produced which would result, on the approach of two atoms, in the moving out of the two units so as to take up a position combining the two atoms together. The figure thus produced is really a section through a molecule in which the atoms have combined according to one of the suggestions made by Bohr. This method is, therefore, a simple one for dealing statically with a molecule of the Bohr type. The method of combination can be applied to the problem of the formation of water polymeres and hydration of ions.—T. Martin Lowry: The electronic theory of valency. Pt. IV. The origin of acidity. The increasing acidity of the hydrides from CH₄ to FH or from SiH₄ to ClH is attributed to a progressive diminution in the size of the orbits of the electrons by which the protons are linked to the central nucleus. Acylous atoms such as chlorine tend to diminish the size of the orbits of electrons which they share with another atom, and this effect can be transmitted to other orbits of the same quantum-number in the latter atom. In this way the transmission of acidity through a chain of atoms can be interpreted by means of a dynamic, instead of a static, model. Conversely, basylous groups must expand the orbits of electrons which