

Birthdays and Research Centres.

Feb. 3, 1872.—Prof. F. J. COLE, F.R.S., professor of zoology, University of Reading.

My chief studies at present are concerned with the history of zoological discovery.

Feb. 4, 1875.—Dr. LUDWIG PRANDTL, For.Mem.R.S., director of the Kaiser Wilhelm Institute for Research on Fluid Flow at Göttingen.

In the Wilbur Wright Lecture before the Royal Aeronautical Society in May 1927, I pointed out that after the very satisfactory explanation of the lift on aerofoils and of all similar related problems, it is necessary to investigate the problem of resistance more closely, and that turbulence is an important factor in connexion with this latter question. Turbulence is that internal unrest in fluid motion which produces a continual mingling of fluid particles from the neighbourhood of the wall with those somewhat farther away, and as a result, frictional forces are increased, but the stream-line pattern approximates more closely to the form calculated for ideal fluids.

During the last few years, the investigations in my Göttingen Laboratory have gone into the properties of turbulent flow in great detail, and have, in fact, produced several important explanations. But much remains to be done, and much more work is necessary before the experimental results can be explained with the desired clarity.

Feb. 5, 1866.—Sir ARTHUR KEITH, F.R.S., Hunterian professor and Conservator of the Museum of the Royal College of Surgeons.

I am continuing my lifelong search for evidence bearing on the origin of man and of anthropoid apes. Especially am I concerned with factors which regulate or influence development and growth.

Feb. 6, 1852.—Dr. CONWY LLOYD MORGAN, F.R.S., emeritus professor of psychology in the University of Bristol.

One who enters on his eightieth year is not likely to be able to furnish an interim report of any new investigation now in progress. More probably he asks himself: What should I do were I near the start of my life-work instead of fast approaching its close?

Realising that comparative psychology is still in its infancy, I should concentrate attention for another lifetime on the earlier stages in the evolutionary genesis of mind in its natural process of concrescence. I should still urge that, since maturity is, in each individual, a novelty emergent on infancy, it does not accord with sound method in science to account for infantile (and even embryonic) occurrences in terms of mature processes if, on the available evidence, such processes are not as yet emergent in that instance of concrescent advance which is under scientific consideration.

Feb. 6, 1871.—Lieut.-Col. J. STEPHENSON, F.R.S., Indian Medical Service (retd.), formerly lecturer in zoology in the University of Edinburgh.

The main objects of my anatomical and systematic work on the Oligochæta are: (1) the tracing out of the course of evolution within the group—certain families, for example, the Megascolecidae, allow lines of descent to be traced within them with more and more certainty as our knowledge of the anatomy and distribution of their members increases; (2) to contribute to the science of palæogeography by means of an increasingly accurate knowledge of the earthworm faunas of the several regions of the globe. Since earth-

worms for the most part spread only by their own slow progression in the ground, to a life in which they are absolutely confined, a knowledge of the distribution of the various genera affords valuable material for determining the configuration of the land in former epochs.

Societies and Academies.

LONDON.

Royal Society, Jan. 22.—P. M. S. Blackett and F. C. Champion: The scattering of slow α -particles in helium. Mott has calculated the scattering of α -particles by helium atoms on the assumption that the particles interact according to the inverse square law, that they have no nuclear spin, and that they obey the Einstein-Bose statistics. It is found that the scattering should vary periodically with changing angle and velocity; in fact, an interference pattern should be obtained the scale of which depends on the velocity. This theory has been tested by photographing the collisions between slow α -particles and helium atoms in a Wilson chamber. The results are in complete agreement with Mott's theory.—W. A. Bone, R. P. Fraser, and F. Lake: Explosions of mixtures of acetylene and electrolytic gas. The disturbing influence of successive additions of acetylene upon the uniformity of the initial flame movement in an explosion of electrolytic gas attains a maximum when 20 per cent of acetylene is present in the medium, thereafter declining, and eventually disappearing when 30 per cent of acetylene is present. There is a primary selective partial combustion of acetylene, $C_2H_2 + O_2 = 2CO + H_2$, in the flame front, followed, behind the flame front, by either (i), when sufficient oxygen is present, a highly luminous combustion of the nascent carbon monoxide, or (ii) otherwise, by a thermal decomposition of any unburnt acetylene. The explosion of a $C_2H_2 + O_2 + 2H_2$ mixture is differently affected by an equal dilution with argon or nitrogen.—W. A. Bone and R. P. Fraser: Flame speeds in the inflammation and detonation of $CO-O_2$ mixtures. In the initial phase of 'inflammation', and in the final stage of 'detonation', the maximum flame speed for moist mixtures at atmospheric pressure is obtained with a *circa* $3CO + O_2$, instead of a theoretical $2CO + O_2$ mixture. Dilution of the medium with either argon, helium, or nitrogen does not materially alter the proportions of carbonic oxide and oxygen in the maximum-speed mixture. Hence the point of maximum flame speed is principally determined by the concentration of carbon monoxide, and the combustion of moist carbonic oxide is conditioned by a prior 'excitation' of its molecules, which are then rendered combustible.—C. V. Jackson: Interferometric measurements in the arc spectrum of iron. Ten lines in the spectrum of the iron arc in air, between $\lambda 4000$ and $\lambda 4400$, have been measured by interferometric comparison with the red line of cadmium or with the secondary standards of neon. Sixty-eight lines in the spectrum of the iron arc in air between $\lambda 2300$ and $\lambda 3100$ have also been measured interferometrically. The results are in good accord with the wave-lengths recommended by the International Astronomical Union in 1928.

EDINBURGH.

Royal Society, Jan. 12.—J. W. Gregory: The Dalradian rocks of Scotland and the structure of the Southern Highlands. The Dalradian rocks can be traced across the Southern Highlands of Scotland from Argyll to the Moray Firth and the coast south of Aberdeen. The author in 1910 rejected the