Contemporary Birthdays.

February 19, 1858. The Duke of Bedford, K.G., F.R.S.
February 19, 1859. Prof. S. Arrhenius, For.Mem.R.S.
February 19, 1871. Dr. W. Diller Matthew, F.R.S.
February 19, 1865. Sir Sven Anders Hedin, Hon. K.C.I.E.
February 22, 1856. Prof. M. J. M. Hill, F.R.S.
February 23, 1856. Viscount Cave, G.C.M.G.
February 25, 1869. Prof. Arthur W. Crossley, F.R.S.
February 26, 1864. Mr. John Evershed, F.R.S.

The DUKE OF BEDFORD, who was born in London, graduated at Balliol College. His Grace is a trustee of the British Museum and president of the Zoological Society of London.

Prof. ARRHENIUS was born at Wiljk, near Upsala. He is the originator of the theory of electrolytic dissociation, and was Nobel laureate in 1903. In the previous year he was awarded the Davy medal of the Royal Society for his application of the theory of dissociation to the explanation of chemical phenomena. In 1914 the Chemical Society allotted him its Faraday medal, and Prof. Arrhenius received it in person. On that occasion Sir William Crookes said, "The world is deeply in need of researchers both of the type of those whose genius is characterised by that fertility of resource in experimental investigation exhibited by Faraday and the type of Arrhenius. Both are revolutionaries and founders of new kingdoms. The world's debt to them is incalculable."

Dr. MATTHEW, palæontologist, was born at St. John, New Brunswick. He is curator of fossil vertebrates in the American Museum of Natural History, New York.

Sir SVEN ANDERS HEDIN, explorer and geographer, was born at Stockholm and educated there and in various foreign cities. In 1902 he was ennobled by the King of Sweden. He is Hon. D.Sc. (Oxon., Camb.). The Founder's medal of the Royal Geographical Society was awarded him in 1902. Sir Sven published "My Life as an Explorer" in 1925.

Dr. M. J. M. HILL, formerly professor of mathematics in the University of London, was born at Berhampore, Bengal. Educated at Blackheath, University College, London, and Peterhouse, Cambridge, he was 4th wrangler and Smith's prizeman (1879).

Viscount CAVE was born in London. Educated at Merchant Taylors' School, he graduated at St. John's College, Cambridge. Lord Cave is chairman of the Grand Council of the British Empire Cancer Campaign.

Prof. CROSSLEY is a Lancashire man. He went to Mill Hill School, and afterwards he graduated at the University of Manchester. He is also Ph.D. (Würzburg). Formerly Daniell professor of chemistry in the University of London (King's College), he is now director of the Cotton Industry Research Association, Didsbury. Prof. Crossley is an Officer of the Legion of Honour.

Mr. EVERSHED, until lately director of the Kodaikanal and Madras Observatories, is distinguished for his work in astrophysics. In 1918 he was awarded the gold medal of the Royal Astronomical Society for his investigations of the radial motion in sunspots, and more recently he has detected the shift of the lines of the solar spectrum required by the theory of relativity.

Societies and Academies.

LONDON.

Royal Society, February 11.—H. G. **Thornton** and N. **Gangulee**: The life-cycle of the nodule organism *Bacillus Radicicola* (Beij.) in soil, and its relation to the infection of the host plant. A regular cycle of changes was found, unbanded rods, cocci, and banded rods successively predominating in the soil. Increase in the percentage of cocci was associated with increased bacterial numbers and with the appearance of motile forms. When soil and sand is inoculated with a suspension of the bacteria, the latter commence, after a lag period, to spread radially at an approximate rate of 1 inch in 24 hours. The lag is apparently related to the time taken for cocci to predominate in the soil, and is decreased by using milk and 0·1 per cent. of calcium phosphate as the inoculating fluid. The bacteria multiply rapidly in the soil into which they have recently spread. Lucerne plants grown from seed inoculated with a suspension of bacteria in milk + 0·1 per cent. calcium phosphate showed a considerable increase in nodule numbers and in yield compared with plants from seed inoculated with a suspension in milk alone.—C. E. **Walker**: The meiotic phase in certain mammals. The daughter chromosomes of the last somatic division before the first meiotic split longitudinally. The semivalent half-chromosomes lengthen out, until the whole nucleus is filled with fine semivalent threads. This is the end of the telophase. These semivalent threads join together again in pairs to form univalent filaments, which join laterally in pairs to form bivalent loops. The filaments, after forming these loops, separate except at their ends. These are the meiotic bivalent chromosomes. At the first meiotic division, the pairs of whole somatic chromosomes, joined by their ends, separate and are distributed, half to each daughter cell. The longitudinal split in the daughter chromosomes of the somatic division which reappears in the telophase of the first meiotic division, is not consummated until the second meiotic division. The term "exeilesis" is suggested for the process by which each of the daughter chromosomes becomes converted into two semivalent threads.—J. **Needham** and Dorothy **Needham**: Further micro-injection studies on the oxidation-reduction potential of the cell interior. The results of the micro-injection of *p*H and *r*H indicators into living cells have been investigated. Oxidation-reduction potential indicators exhibit no anomalies when injected into *Amœba proteus*. It appears, therefore, that all the dyes on the scale may be used with biological material. The amœba is capable of oxidising the leucoform of indicators of lower oxidation-reduction potential, and the latter is probably independent of the percentage of oxygen in the external atmosphere. *Nyctotherus cordiformis* (an anaerobic protozoon) possesses an internal *p*H of 7·1 and an internal *r*H of 19·0-20·0 under aerobic conditions, while under anaerobic conditions, the latter changes to 9·5-10·5.—J. W. H. **Harrison** and F. C. **Garrett**: The induction of melanism in the Lepidoptera and its subsequent inheritance. Both in the British Isles and on the Continent in large manufacturing and urban areas, melanic forms have arisen. The conditions point immediately to the smoke in the atmosphere of large towns as responsible for the melanism and, moreover, indicate that it influences insects in the larval state by means of their food-plants. Thus it should be possible to induce melanism by (1) feeding up non-melanic strains of Lepidoptera in melanic districts, and (2) feeding them in non-melanic areas on food-plants artificially charged with impurities known to exist in