Contemporary Birthdays.

July 25, 1848. The Earl of Balfour, K.G., O.M., F.R.S.
July 26, 1872. Prof. Joseph Barcroft, C.B.E., F.R.S.
July 27, 1857. Sir E. Wallis Budge, D.Litt. (Oxon.).
July 27, 1857. Dr. John William Evans, F.R.S.
July 28, 1843. Sir W. T. Thiselton-Dyer, K.C.M.G.
July 28, 1844. Sir Howard Grubb, F.R.S.

The EARL OF BALFOUR, Chancellor of the University of Cambridge, and also of the University of Edinburgh, was born in Scotland. He was educated at Eton and Trinity College, Cambridge. Always deeply interested in the advancement of science, he is a past-president of the British Association, and has, at two separate periods, served on the council of the Royal Society.

Prof. JOSEPH BARCROFT was educated at Bootham School, York, and King's College, Cambridge. He succeeded the late Prof. J. N. Langley as professor of physiology in the University of Cambridge, and is also Fullerian professor of physiology in the Royal Institution. His researches on the respiratory function of the blood and its relation to the activity of the tissues form but one department of many physiological inquiries. He has explored the conditions of life at high altitudes with persistency and acumen, undertaking the leadership of two expeditions for that purpose, one to Monte Rosa, and another to the High Andes. Prof. Barcroft was awarded a Royal medal by the Royal Society in 1922.

Sir WALLIS BUDGE, Oriental scholar, formerly keeper of Egyptian and Assyrian antiquities in the British Museum, is a graduate of Christ's College, Cambridge. He has conducted excavations at Assuan, Nineveh, in the Sudan, and elsewhere.

Dr. JOHN W. EVANS, lately president of the Geological Society of London, was educated at University College School. He has rendered much service to geological science by initiating, extending, and guiding the conduct of geological investigations in the colonies and dependencies of the British Empire. In western and southern India and in South America he has led official exploring expeditions. The Geological Society recognised the high value of his work by awarding him, in 1922, its Murchison medal. Dr. Evans is the author of a useful pamphlet of 20 pp. issued by the Colonial Office in 1914, on "Directions for the Collection of Geological Specimens."

Sir W. T. THISELTON-DYER, who was born at Westminster, attended King's College School, graduating afterwards at Christ Church, Oxford. In 1875 he became assistant director of the Royal Botanic Gardens, Kew, and he was director from 1885 until 1905. The "Flora Capensis," recently completed, and the "Flora of Tropical Africa," which will run to eleven or twelve volumes, will always be associated with his many years at Kew, where he also started the *Kew Bulletin*. He has contributed notably to the economic and systematic botany of the British Empire.

Sir HOWARD GRUBB, to whom our hearty congratulations are extended on the occasion of his eighty-second birthday, was educated privately and at Trinity College, Dublin. The practical outcome of his skill and labours in the production of objectives and instruments of precision is known wherever there are observatories. Early this year Sir Howard was the recipient of a congratulatory address signed by the leading astronomers and astrophysicists of Great Britain, referring to his resourcefulness and ingenuity in the development of the instrumental equipment of astronomers through more than sixty years.

Societies and Academies.

LONDON.

Optical Society, June 24.—M. von **Rohr**: Joseph Fraunhofer and the development of optical instruments. The position of high-grade optical work at the beginning of the nineteenth century was discussed. The chief cause of the transference from England to Germany of supremacy in telescope construction at that time was the appreciation in the latter country of the importance of fundamental research to the industry. The developments which took place in Munich and later at Benediktbeurn due to Fraunhofer's activities were detailed and some of the more important instruments produced under his direction were described.—T. **Smith**: (1) Reflection as a special case of refraction. Some difficulties which arise in applying the formulæ for refraction to reflection, and particularly the sign conventions which should be adopted for reflection, were discussed. (2) On the light transmitted and reflected by a pile of plates. The properties of a series of media or of a pile of plates which absorb and scatter light, and the interfaces of which may also absorb and scatter as well as transmit and reflect light, were investigated. In general, the ratio of the transmissive factors of a pile of plates in the two directions is independent of all reflective properties of the surfaces, and the factors are equal if the individual transmissive and absorptive factors are the same for the two beams. The ratios of the light transmitted without reflection to the total light transmitted are equal in both directions. The reflective properties of the pile depend upon all the factors of the system, and the ratio of the two reflective factors is not independent of the order in which the plates are placed. In non-absorbing systems, the sum of the intensities of the reflected and transmitted beams is equal to the intensity of the incident beam, and the ratio of the intensity of the reflected to that of the transmitted beam is equal to the sum of the corresponding ratios for the component plates or surfaces of the pile. Such a pile forms an exception to the rule that the reflective coefficients depend on the order in which the plates are arranged.—D. S. **Perfect**: Note on the immutability of transmissive factors with reversal of light. Direct experimental evidence has been obtained that the transmissive factor of the surface separating two media is unaltered if the direction in which the light travels is reversed.

DUBLIN.

Royal Dublin Society, June 22.—P. A. **Murphy**: The downy mildew of onions (*Peronospora Schleideni*), with particular reference to the hibernation of the parasite.—W. R. G. **Atkins** and H. H. **Poole**: Photo-electric measurements of illumination in relation to plant distribution (Part 1). Measurements of the illumination in shaded and open sites have been made by means of two photo-electric photometers and an apparatus already described, the readings being nearly simultaneous. The ratio of the illumination at a shaded site to the illumination due to diffused light in the open forms a useful index for comparing different sites. This ratio is conveniently expressed as a percentage which is called the daylight factor. It is usually found with both the photometers horizontal (so as to measure the vertical illumination), but a useful value near the edge of a wood is that found by tilting the photometer so as to receive the maximum illumination. There is a marked correlation between the flora and the daylight factors of the sites examined.—J. **Reilly** and G. T. **Pyne**: Studies in peat (Part 1). The thermal decomposition of peat under reduced pressure. Distillations of dried peat