

## News and Views

### Sir Norman Lockyer, 1836-1920

No centenary can be mentioned more appropriately in *NATURE* than that of Sir Norman Lockyer, who founded this journal in 1869. Joseph Norman Lockyer was born at Rugby on May 17, 1836, so that the centenary of his birth falls on Sunday next. Throughout his career he worked with unceasing energy for the advancement of natural knowledge, and his spectroscopic researches, as well as his imaginative insight, place him in a high position among pioneers of modern science. The records of his contributions to astrophysics, and the recollection of the stimulating influence he exerted upon the progress of science for so many years, have increased in strength and value since his death on August 16, 1920; and they will command admiration so long as the pursuit of knowledge is regarded as worthy human endeavour. In the issue of *NATURE* of November 6, 1919, published to celebrate the jubilee of the foundation of this journal, Sir Norman Lockyer was the subject of an article in the series of "Scientific Worthies", and Dr. Henri Deslandres then referred to him as "one of the great men of science of England and one of the greatest astronomers of all time". How well he earned this high tribute of praise may be judged from the fine volume recording his "Life and Work" published in 1928.

### Helium

THE discovery of Sir Norman Lockyer's which stands out as one of the most romantic events in the history of science is that of helium. In 1866, Lockyer suggested that, with large enough dispersion, it should be possible to observe solar prominences in full daylight without waiting for the sun to be obscured in a total eclipse. Two years later, he became possessed of a spectroscope of sufficient power to make this observation, and he then noticed a strange yellow line in the spectra of solar prominences. This was at first supposed to be due to hydrogen, but experiments failed to confirm this opinion. After satisfying himself that the line could not be produced by any element then known on the earth, Sir Norman Lockyer called the unknown substance 'helium'. Not until twenty-seven years later was terrestrial helium extracted from cleveite by Sir William Ramsay, and since then it has proved to be one of the most interesting elements in both pure and applied science. For an element first discovered by an astronomer to prove in the course of time to have so many scientific and industrial contacts is a reward which few investigators can hope to obtain, and a tribute to an achievement which occupies a leading position in the archives of science.

### Guthrie Lecture: Prof. F. A. Lindemann, F.R.S.

THE Guthrie Lecture for this year of the Physical Society is being delivered at the Imperial College of

Science and Technology, South Kensington, at 5 p.m. on May 15 by Prof. F. A. Lindemann, professor of experimental philosophy in the University of Oxford, whose subject is "Physical Ultimates". Prof. Lindemann has carried out theoretical and experimental researches in various branches of physics. Before the Great War he was distinguished for his work on the specific heat of solids at low temperatures; the Nernst-Lindemann formula was a pioneer attempt to connect the specific heat of a substance with its characteristic frequencies. During the War he was attached to the Royal Air Force, and the apparatus which he evolved and the experiments he performed himself in actual flight on the causes and elimination of spin were recognised as of the highest importance. In 1919, at a very early age, Prof. Lindemann was appointed to the chair which he now occupies at Oxford. He has written papers on the origin and nature of magnetic storms, and his research work on meteors gave the first indication of the then unsuspected rise of temperature at heights of about 50 km. in the upper atmosphere, which has since been verified in other ways. His development of photo-electric cells and the electrometer which bears his name have been of incalculable service, not only to the solution of the astronomical problems which interested him and his father, who had his own observatory at Sidmouth, but also to physicists in general. Recently he has turned his attention to the more philosophical aspects of physics, and in his book on the "Physical Significance of the Quantum Theory", he has attempted to clear up certain difficulties connected therewith.

### Bicentenary of the Duke of Bridgewater, 1736-1803

ON May 21 the bicentenary occurs of the birth of Francis Egerton, third and last Duke of Bridgewater, who has been called "the Father of British inland navigation", and to whom a monument exists at Ashridge bearing an inscription which says that "by devoting the energies of his mind to the accomplishments of the most splendid works of inland navigation, [he] opened a new field of national industry and rendered the most important services to the commercial interests of this country". A sickly, neglected boy, and an ignorant, awkward and unruly youth, the Duke was only twelve years of age when he succeeded to the title, and there was little promise in his early life that he would become one of the country's benefactors. A disagreement at the age of twenty-two with the widowed Elizabeth, Duchess of Hamilton, led to his leaving London for his home at Worsley near Manchester, and his whole life was henceforth devoted to the management of his collieries and estates. Obtaining an Act of Parliament in 1759 for a canal from Worsley to Manchester, he engaged the services of James Brindley (1716-72), and the next few years saw the construction of the