

attack, but also there is an almost infinite number of stereo-chemical isomers due to the presence of cyclohexane rings. It occurred to Ruzicka that the ring system of the sterols might provide the basis for the synthesis of hormones, and he therefore chose a sterol with a suitable stereo-chemical configuration for the ring system and removed the side chain by oxidation. This provided a most important basis for the synthesis of the hormones, and by suitable manipulation of double bonds, conversion of hydroxyl groups to keto groups, and so on, it was possible to produce from a neutral sterol such as cholesterol the highly potent hormone testosterone. It can be said that the recognition of this principle has solved the problem of hormone production, quite apart from its great theoretical interest. Prof. Ruzicka has been a frequent visitor to Great Britain; his addresses are noted for their clarity and for their wit.

#### Prof. E. O. Lawrence

THE announcement of the award of the Nobel Prize for physics for 1939 to Prof. E. O. Lawrence, professor of physics in the University of California, Berkeley, will be received by physicists everywhere with approbation. Lawrence's early researches were concerned with photo-electric effects but, in 1930, he became interested in the possibilities of using the method of resonance acceleration in order to obtain positive ions of very high energies, by means of a number of consecutive accelerations through relatively low differences of potential. The method of linear resonance acceleration was pushed to its practical limit in Lawrence's laboratory when, in 1934, mercury ions were obtained having energies equivalent to accelerations through a potential difference of nearly three million volts, using, however, applied potential differences having a peak value of only 70,000 volts. The limitations of the method of linear resonance acceleration in its application to the acceleration of ions of small atomic mass had, however, been recognized by Lawrence in 1930, in which year he proposed a modification of the method for such ions. This consisted in accelerating the ions back and forth between two semi-cylindrical hollow conductors, the paths of the

ions being rendered circular by means of an intense magnetic field. Thus was conceived the magnetic resonance accelerator, or cyclotron as it is now more generally called.

At that time, it was somewhat generally considered that the practical difficulties involved in the cyclotron were of a magnitude likely to preclude the translation of this conception into terms of practical physics. All the greater then, was the tribute to be paid to the experimental genius of Lawrence when, little more than a year later, he announced the success of the method in obtaining light ions of high energy. His success was acclaimed on both sides of the Atlantic, by the awards of the Comstock Prize of the National Academy of Sciences in 1937 and, in the following year, of the Hughes Medal of the Royal Society, the latter being given for "the most important instrument of physical research since the C. T. R. Wilson expansion chamber". Later, however, Lawrence's interest turned rather towards the vast field of physiological research to which the cyclotron, with its prolific output of radioactive indicators, had opened up a new approach. Important results in nuclear physics continued to pour from the Radiation Laboratory at Berkeley, but at the same time a new side was being developed, and the physiological effects of neutrons and the metabolism of phosphorus and iron, and of like elements which could be obtained in a radioactive form, were being exhaustively studied. Not to Lawrence's laboratory alone was this work confined, his generosity providing for scientific workers in many places in America and in Europe as much radioactive material as they could conveniently use. Lawrence is not only a respected director of a research laboratory but, above all, a valued friend of those who have worked with him.

THE 1939 Nobel Prize for literature has been awarded to N. Frans E. Sillanpää, the Finnish novelist. His novels are based chiefly on the peasant life of Finland. The Nobel Prize for Physiology and Medicine for 1938 was awarded to Prof. C. Heymans, and that for 1939 to Prof. G. Domagk (*NATURE*, November 4, p. 777).

## NEWS AND VIEWS

#### Royal Medals of the Royal Society

HIS MAJESTY THE KING has been graciously pleased to approve the recommendations made by the Council of the Royal Society for the award of the two Royal Medals for the current year as follows: Prof. P. A. M. Dirac, F.R.S., Lucasian professor of mathematics in the University of Cambridge, for the leading part he has taken in the development of the new quantum mechanics; Prof. D. Keilin, F.R.S., Quick professor of biology and director of the Moltano Institute in the University of Cambridge, for his con-

tributions to biochemistry and entomology, in particular for his demonstration of the part played by cytochrome in the oxidation reduction mechanisms of the living cell, and for his studies of the higher Diptera.

#### Centenary Celebrations in New Zealand

IN December 1642, Europeans first discovered New Zealand, although they mistook its general character. A century and a half later their mistake was rectified by Captain Cook. His reports attracted