News and Views

The Nobel Laureates in Medicine

THE Nobel prize for medicine for 1936 is divided between Sir Henry Dale and Prof. Otto Loewi. Sir Henry Dale must have had more influence on medical research than anyone else alive to-day. In the years before the Great War, the Wellcome Physiological Research Laboratories, with him as director, were making discoveries such as had never before been made by a laboratory connected with a pharmaceutical firm. More recently, the National Institute for Medical Research has grown under his guidance until it has become the leading centre for medical research in Great Britain, if not in the world. Sir Henry has been largely responsible for the success of the Commission of the League of Nations on Biological Standards, and it is because of him that a large proportion of the International Biological Standard Preparations are kept in Great Britain. He has been secretary of the Royal Society, and a member of the General Medical Council and numerous committees, but his influence has extended over a much wider field than that covered by these public activities. For many years, he has been consulted, with affectionate respect, by people from all over the world, on questions ranging from general policy to experimental detail. Among all these activities, he has found time to make important discoveries in many fields. He has shown an unusual prescience in working out problems which must have seemed trivial at the time, but have since turned out to be fundamental. Prof. O. Loewi's direct influence has covered a narrower field. Working with simple apparatus, for many years now in Graz, he has shown an uncanny genius for paradoxical discoveries which were not at first believed, but were later confirmed and extended by other, and more elaborate, methods, and formed the basis of one of the most interesting fields of scientific advance. His work has touched many problems, and he is one of the best known and most beloved of German-speaking pharmacologists.

Transmission of Nervous Impulses

THE Nobel prize has been awarded to these two men of science for work on the chemical transmission of nervous impulses. It was known that the effects produced by stimulating sympathetic nerves were also produced by adrenaline, and that the effects of stimulating the vagus were also produced by muscarine and various other drugs. Elliott had hinted, in 1904, at the possibility that sympathetic nerves might produce their effects by actually liberating adrenaline, and Dixon and also Howell had tried to show that some substance was liberated by vagus nerve endings. Dale found that extracts of ergot contained a substance like muscarine, but unstable. This substance turned out to be acetylcholine, and in 1914 Dale, realizing its possible importance in connexion with the vagus, made a detailed study of its effects in the body, in which he showed that it not only reproduced the effects of muscarine, but also those of nicotine. In 1921 Loewi published the first evidence that nerve endings liberate active substances. Under appropriate conditions, the vagus and sympathetic nerves to a frog's heart were shown to liberate two substances, detected by their action on a second heart, and called by Loewi *vagusstoff* and *acceleransstoff*. A dozen papers from Loewi's laboratory answered criticisms of this work and filled in details.

Acetylcholine and Adrenaline

ALL the facts were compatible with the view that the two substances detected in this work were acetylcholine and adrenaline, but Loewi was too cautious to jump to this conclusion. In 1929 Dale and Dudley, working with large-scale apparatus, isolated acetylcholine for the first time from animal tissues, and came to the conclusion that *vagusstoff* could now be definitely identified as acetylcholine. New evidence has justified this conclusion. The pharmacological methods for identifying small quantities of acetylcholine were improved in Dale's laboratory until it was possible to distinguish acetylcholine from such nearly related substances as propionylcholine, and, with these improved methods, it was shown that a substance which could be definitely identified as acetylcholine was liberated, not only by nerves with muscarine-actions, but also by nerves with nicotine-actions. This year, Loewi, working with a method developed in Dale's laboratory, has obtained evidence which enabled him to identify *acceleransstoff* as adrenaline. Though many have worked in this field, these two men have thus obtained all the vital evidence for the modern view that most, if not all, mammalian motor nerves produce their effects by the local liberation of either acetylcholine or adrenaline.

Dr. W. T. Calman, C.B., F.R.S.

THE retirement, at the end of this year, of Dr. W. T. Calman from the keepership of zoology in the British Museum (Natural History) will deprive the Museum and its visitors of the official services of a distinguished carcinologist. Dr. Calman went to the Museum in 1904 from Dundee, where he had graduated and had been assistant lecturer and demonstrator in zoology in the University College. In 1921, he was appointed assistant keeper of zoology at the Museum, and it was in that year that he was elected a fellow of the Royal Society. In 1927, he succeeded Dr. Tate Regan in the keepership. In 1930, he was president of Section D (Zoology) of the British Association, and he is now president of the Linnean Society of London. Dr. Calman's services to carcinology are well known to all zoologists. His morpho-