as long as the stretch was applied. This local potential is probably the immediate cause of the impulse. The mechanism by which the mechanical stimulus produces the local potential is not known, but it seems likely that the mechanical stimulus allows the electrical energy stored in the nerve cell to be released. Stretching a single node of Ranvier does not produce changes comparable to stimulating a sensory receptor. However, a suggestion that there may be specialization of the membrane of sensory terminals comes from evidence that acetylcholine may stimulate sense endings, though this substance seems to play no part in their normal function.

In the discussion that followed, Prof. Adrian was asked whether the adaptation to a smell that is commonly experienced is due to fatigue of the receptor. He replied that an impulse discharge can be recorded for long periods and that the adaptation is presumably central. Dr. Detlev W. Bronk referred to the importance of the chemical environment of nerves and the oscillatory phenomena seen with lack of calcium. Under these conditions impulses occur at intervals which are multiples of a fundamental interval; he said that Dr. Scott had observed similar rhythmical discharges from Pacinian corpuscles. Prof. W. Burns asked Dr. Davis whether the threshold of the auditory receptors could be altered by polarizing currents, to which the latter replied that they can be either raised or lowered according to the polarity of the current. J. A. B. GRAY

OBITUARIES

Dr. W. E. Gye, F.R.S.

W. E. GYE, internationally known as an exponent of the virus hypothesis of cancer, died in Perth, Western Australia, on October 13.

W. E. Bullock, who later changed his name to Gye, was born in the Derbyshire village of Beaston on August 11, 1884. The son of a railway signalman, he tried a number of occupations before becoming a 'pupil teacher'. Later, he obtained a scholarship tenable at University College, Nottingham, and gained the London B.Sc. in chemistry. After spending a year teaching in Birmingham, he began the study of medicine with the financial aid of a friend. During his student days Gye lived simply, found gainful employment during the vacations and repaid the assistance which he had insisted on regarding as a loan. He graduated in Edinburgh in 1913 (Gold Medal) and joined the staff of the Imperial Cancer Research Fund under Bashford and Murray. He served in the R.A.M.C. in charge of a field ambulance in France and Italy during the First World War, and on his return carried out investigations on anaerobic infections with W. Cramer.

Gye and Cramer studied the influences of chemical substances, calcium salts and silica, for example, in producing 'defence rupture' in wounds infected with spores of anaerobic bacteria. Shortly afterwards, Gye collaborated with E. H. Kettle in an investigation of silicosis and miner's phthisis. He then joined the staff of the National Institute for Medical Research with the intention of participating in the experimental studies of dog distemper which were then being planned. Before this work could proceed, a stock of virus-free dogs had to be bred and Gye, in order to obtain some virus experience, commenced work with the Rous sarcoma.

This work on fowl tumours was continued by Gye, and in 1925 he published a paper on the "Ætiology of Malignant New Growths" which attracted widespread attention. He attributed the specificity of various growths, not to a corresponding multiplicity of viruses but to 'specific factors' derived from the host. This thesis was further elaborated and presented together with many experimental observations on fowl tumours in a book with W. J. Purdy, "The Cause of Cancer", published in 1931.

Gye succeeded Murray as director of the Imperial Cancer Research Fund in 1936. The virus hypothesis continued to be one of his main interests, and the problem of obtaining direct and convincing experimental evidence of a causal virus in transplantable mammalian tumours occupied much of his attention. Because of his own negative results with tumour desiccates over a long period, it is perhaps not surprising that in 1949 he interpreted the successful transmission of such tumours in the Fund's laboratory by means of freeze-dried material as evidence of the existence of such a virus.

A gift of lucid exposition was one of Gye's characteristics. He undoubtedly rendered a great service to oncology by undertaking the study of the fowl tumours described by Rous before the First World War. These had been largely ignored because they could be induced *de novo* by virus obtained from them, and therefore could not be reconciled with other ideas on the genesis of cancer in general. Gye's attempts to extend the hypothesis of virus as a continuing cause to all kinds of cancer were highly ingenious, and it is largely due to him that this alternative to other concepts holds the position it does to-day. He believed fervently in his ideas, and in this controversial subject evoked reactions ranging from great admiration to pungent criticism.

Gye was a man of much personal charm. His post-war years were burdened by an increasing disability due to a heart condition, and on retirement from the directorship of the Imperial Cancer Research Fund in 1949 he went to Perth, Australia. He was elected a Fellow of the Royal Society in 1938 and in 1947 was appointed professor of experimental pathology in the Royal College of Surgeons. Gye was twice married, in 1913 to Miss Elsa Gye, who died in 1943 and by whom he had three sons; and in 1945 to Miss Ida Mann, professor of ophthalmology at Oxford. Miss Mann later retired and assisted Gye in his experimental work in London and in Australia.

J. CRAIGIE

Miss K. C. Boswell

MISS KATHARINE CUMMING BOSWELL, born in October 1889, died on September 19, of heat stroke, at Beni Abbes, deep in the Sahara. During her adult life she had a very close connexion with the (then) University College, Southampton. She was a student before and after the First World War; in 1926 she became a lecturer in the Department of Geography; she resigned her lectureship in 1944, and went as co-principal to the Friends' College, Jamaica, in 1945; she returned in 1949 and resumed close relations with the College and Department at Southampton.

Miss Boswell's main interest was in geomorphology, her studies in which were supported by her thorough learning in geography and by her early studies in geology and biology. Her constant aim was to understand, and to help others to do the same. Her students