the satellite was glowing a dull orange, but had developed no tail. At latitudes south of 20° N. it had a long tail alive with sparks, "like those thrown off from a grinding wheel". The sparks were often seen to fall away from the tail and then soon ceased to glow. Estimates of the length of the tail vary between 30 and 90 nautical miles, with a mean of about 50 nautical miles. The estimates of the brightness suggest that when the satellite was between latitudes 20° N. and 15° N. its stellar magnitude was roughly -5 at a distance of 100 nautical miles. The satellite seems to have taken on almost every colour of the

spectrum at some time during its descent, and it is only possible to list the colours reported, which were: orange, white, yellow, greenish-blue and red; yellow and orange; orange, silver, blue and green; yellowish-white; blue and red; white to greenish-blue; red and white; green and red; red, orange and white; white; and "a rather sulky crimson".

We wish to thank the captains and crews of the ships from which observations were made. We also thank Mr. D. H. Sadler, superintendent of H.M. Nautical Almanac Office, who arranged for a general call to shipping to be made and sent us the reports received.

OBITUARIES

Dr. W. S. Bauld

THE tragic death of Dr. William St. Clair Bauld, his wife Marion, and two of their children on July 20 in a car accident in Canada profoundly shocked and saddened their many close friends in Great Britain.

Bauld was born at Wolfville, Nova Scotia, in 1919. In 1939 he graduated B.A. with honours in chemistry from Acadia University and then proceeded to Dalhousie University, where he was awarded the degree of M.Sc. in 1941 for research on the oestrogens carried out under the direction of the late Dr. R. D. H. Heard. During 1941-43 Bauld served in the Royal Canadian Artillery and was at first on the teaching staff of the Army Radar School, then becoming overseas liaison officer for the Canadian National Research Council and finally officer-in-charge of inspection of all radar equipment made in Canada. He retired from the Canadian Army with the rank of major.

After the War, Bauld decided to study medicine and enrolled at McGill University. In 1949 he graduated M.D., C.M. I first met Bauld in Montreal a year before his graduation from McGill and was greatly impressed by his personality and by his evident wish to resume research on the oestrogenic hormone. This meeting led to Bauld's appointment to a lectureship in the Department of Biochemistry in the University of Edinburgh in October 1949.

At Edinburgh, Bauld was outstandingly successful both as a teacher and as a research worker. He was a lucid and inspiring lecturer who was very popular with, and respected by, those he taught. His elegant work on the quantitative determination of oestriol, oestrone and oestradiol-17 β in urine gained him international recognition as an authority in the field of the oestrogenic hormone, and in 1953 he was awarded the degree of Ph.D. for a thesis embodying the results of this work. A chance observation made by Bauld in the course of this work led to the subsequent isolation by him and me of 16-*epi*oestriol from the urine of pregnant women.

Bauld's contributions to the Edinburgh Medical School were not merely those of a first-class teacher and research worker. His capacity for working hard and playing hard and his infectious enthusiasm for everything he did acted as a tonic to all who came in contact with him. He was greatly missed when he returned to Montreal in 1954 to join the staff of the Montreal General Hospital as an assistant in the Department of Metabolism and Toxicology.

Bauld's progress after his return to Montreal was spectacular. At the time of his death, less than four years later, he had become associate director of the Department of Metabolism and Toxicology, assistant director of the Montreal General Hospital McGill University Clinic and assistant professor of medicine at McGill University, and had become recognized as a chemical pathologist of the highest rank.

The Baulds' home, whether in Edinburgh or in Montreal, was a particularly happy one where visitors were always warmly welcomed. In both cities the Baulds had many friends who loved and respected them and who will miss them sorely.

G. F. MARRIAN

Prof. G. M. Wishart

PROF. G. M. WISHART died on July 18 in his sixty-third year after a short illness. Since 1947 Wishart had devoted himself to administration, being director of postgraduate medical education and dean of the Medical Faculty of the University of Glasgow. Previously Wishart had held the Gardiner chair of physiological chemistry: the later period, given over to administration, has tended to obscure the merit of the scientific work in the earlier years.

The medical profession of to-day accepts with good grace the importance of the basic sciences in the theory and practice of medicine: it was not always so, and men such as Wishart had more than a little to do with this change of heart.

Wishart was instinctively at home in the physical sciences: his first degree was in science; he qualified afterwards in medicine. In the 1920's, biochemistry was applying accurate chemical techniques to biological problems. Wishart studied in Lund under Thunberg and this gave him an abiding interest in the factors governing enzyme action. Hydrogen ion concentration had to be measured accurately because of its importance in biological systems: Wishart designed a glass electrode to measure pH. He early appreciated the potentialities of the thermionic valve and designed a most sensitive electronic oscillogometer to measure blood pressure in man.

About this same time the application of indirect calorimetry to man had become well established. It was now possible to measure with accuracy the factors, internal and external, influencing the expenditure of energy in human beings. Wishart made a quite exhaustive study of basal metabolism and

published a series of papers with a bearing on the metabolic cost of various types of muscular work. Wishart's familiarity with the physical approach to biological problems found expression in 1931 in the publication of a most useful small book, "Ground-work of Biophysics". Yet he did not abandon his interest in more conventional biochemical studies. He took an active part in the work of the Hannah Dairy Research Institute at Ayr and spent several long vacations working in the laboratories there.

During most of this period of fruitful activity, Wishart was Grieve lecturer in physiological chemistry in Glasgow. In 1935 he was elected to the Gardiner chair, and then teaching and administration began to take their toll of his time. All Wishart's work, scientific, academic and administrative, was characterized by meticulous accuracy and by a scrupulously fair presentation of his views. No one better served his University as research worker, teacher and administrator.

R. C. GARRY

NEWS and VIEWS

International Co-operation and Geophysical Research

At the recent International Geophysical Year meeting in Moscow, the following resolution was accepted: "The C.S.A.G.I. [Comité Spécial de l'Année Géophysique Internationale] endorses the A.C.I.G.Y. [Advisory Council of the International Geophysical Year] recommendation that observational and data-collecting activities in the geophysical and related sciences be conducted during 1959 on the same general plan as in 1957-58 under the direction of the C.S.A.G.I. or the C.U.R.A.G.I. [Comité d'exploitation et utilisation des résultats de l'Année Géophysique Internationale] as far as practicable and at such levels and in such fields as may be determined by each participating committee. The name International Geophysical Co-operation 1959 is suggested for this period". In accordance with earlier decisions, the International Geophysical Year as such will cease at the end of 1958. It was agreed, however, that international co-operation in geophysical research shall continue in so far as each nation finds it practical, and it is left to each nation to decide in which disciplines it shall continue to make observations as during 1957-58 and whether its activity shall be on a higher or lower or at the same level as during 1957-58. The Comité d'exploitation et utilisation des résultats de l'Année Géophysique Internationale is a body which will take over from the Comité Spécial de l'Année Géophysique Internationale the work of ensuring international co-operation, and in particular the utilization of the International Geophysical Year results.

California Institute of Technology:

Prof. Linus Pauling, For.Mem.R.S.

THE resignation of Prof. Linus Pauling as chairman of the Division of Chemistry and Chemical Engineering at the California Institute of Technology is of interest to chemists all over the world. For there can scarcely be any chemist anywhere better known than he. In his books, of which "The Nature of the Chemical Bond" will always remain a classic, and in his 300 research papers, Prof. Pauling has done more than any other person to apply the ideas of the quantum theory to the study of molecular structure. During his tenure of office, the Gates and Crellin Laboratories at 'Caltech' have achieved an almost unique reputation. It was entirely right that he should be elected a Foreign Member of the Royal Society in 1948, and receive the Nobel Prize in 1954.

True to the fate of most pioneers, Prof. Pauling has frequently been at the centre of some kind of controversy. Many people will recall the decision made in the U.S.S.R. some years ago to the effect that his

theory of resonance in molecules should be rejected on political and philosophical grounds. Others will think of his difficulties in obtaining a passport from the United States, as a result of the strong opinions which he has courageously refused to disguise. But everyone will be glad that his resignation as chairman is not to imply any diminution of his research interests, for Prof. Pauling will continue in his post as professor of chemistry at 'Caltech'. During the past few years, Prof. Pauling has undertaken fundamental studies of protein structure which are of the highest importance and merit, and show promise of leading to an understanding of the molecular chemistry of such matters as mental disease. In this field his intimate knowledge of molecular geometry and crystal architecture is already showing its tremendous importance. Physicists, chemists and all those who appreciate his warm humanity will wish him well in his newly acquired freedom.

Prof. E. H. Swift

PROF. ERNEST H. SWIFT, who is to succeed Prof. Pauling as chairman of the Division of Chemistry and Chemical Engineering at the California Institute of Technology, graduated from the University of Virginia in 1918. He joined the staff of the California Institute of Technology in 1920 and was appointed professor of analytical chemistry in 1943. As an official investigator for the U.S. Office of Scientific Research and Development during the Second World War, Prof. Swift worked on problems related to the identification of chemical warfare agents and their detection in the field. More recently he has worked on the development of coulometric analysis and is a recognized authority in this field. Prof. Swift is the author of the well-known text-books, "A System of Chemical Analysis for the Common Elements" and "Introductory Quantitative Analysis", and in 1955 he received the Fisher Award of 1,000 dollars given annually in recognition of "outstanding contributions to the science of analytical chemistry, pure or applied, in the United States or Canada".

Botany at Aberystwyth:

Prof. L. Newton

PROF. LILY NEWTON, who is retiring from the Chair of Botany at the University College of Wales, Aberystwyth, began her career as assistant lecturer in the Botany Department, University of Bristol, and in 1920 became lecturer in botany at Birkbeck College, London, under Dame Helen Gwynne-Vaughan. She afterwards worked at the Imperial College of Science and Technology under Prof. V. H. Blackman and her special interest in algae led her to the position of research worker in the British Museum (Natural History), where she devoted herself to the publication