behaviour: on some favourable transits it has remained obstinately invisible; at other times it has unexpectedly declared itself with flashes of stellar magnitude 1. It has not been necessary to rely entirely on optical observations, however, since the satellite has been transmitting radio signals on 20.005 Mc./sec., and these have, so far, continued with little diminution in strength.

Tables 1 and 2 give information on the orbits of *Sputnik 3* and its rocket. The orbital inclination,

like that⁴ of *Sputnik 2*, has been decreasing slightly, probably as a result of lateral aerodynamic forces created by rotation of the atmosphere.

I wish to thank all those who have sent us observations of *Sputnik 3* and its rocket, and Mrs. D. M. C. Walker, who has analysed the observations.

¹ King-Hele, D. G., and Walker, D. M. C., *Nature*, **182**, 860 (1958).

² King-Hele, D. G., and Leslie, D. C. M., *Nature*, **181**, 1761 (1958).

³ Nonweiler, T. R., *Nature*, **182**, 468 (1958).

⁴ Merson, R. H., and King-Hele, D. G., *Nature*, **182**, 640 (1958).

OBITUARIES

Prof. J. A. Gunn, C.B.E.

News of the death on October 21 of J. A. Gunn in his seventy-seventh year will have been received with sorrow by a wide circle of friends and by all pharmacologists who knew him.

Gunn was a true pharmacologist, not a physiologist in disguise; that is to say, his primary interest was in the physiological effects which chemical substances foreign to the animal economy, whether synthetic or of plant origin, produce in animals. This interest led him to ponder deeply upon some of the problems presented by what we now call the structure-action relationships of drugs. In this he was probably influenced by his teacher, Sir Thomas Fraser, who, with his chemical colleague Crum Brown, had made the first systematic attempt to study the structure-action relationships of drugs. It was with Fraser that one of Gunn's earliest papers on "Venoms" was published. At the same time, in the true Scottish tradition, Gunn never forgot the therapeutic possibilities of the substances which he happened to investigate.

Gunn's general point of view was clearly stated in a short review, published in 1935, of his work on the alkaloids of *Peganum harmala*; this paper not only reveals his philosophy as a pharmacologist but is also an excellent example of his lucid and elegant prose style. He was the acknowledged authority on the pharmacology of the harmine alkaloids, on the study of which he was engaged intermittently for twenty-five years. When he began this work the structures of these alkaloids were unknown, but the brilliant investigations of W. H. Perkin, jun., and of Sir Robert Robinson eventually solved the structural problems, and Gunn profited from this work by receiving from Sir Robert Robinson several new and interesting derivatives of the natural alkaloids.

Gunn was the first professor of pharmacology to be appointed in the University of Oxford, and later became the first director of the Nuffield Institute for Medical Research. It is of some interest that he was convinced that every department of pharmacology ought to have a chemist on its staff. For a few years he was fortunate in having an able young chemist, Dr. C. J. Virden, in his Department, and the result of their collaboration was a series of papers on sympathomimetic amines. Gunn was the first to study the pharmacological effects of alkylating the phenolic groups of *para*- and *meta*-hydroxy- and 3:4-dihydroxy-phenylalkylamines. Even more interesting was his observation that the replacement of the β -methylene group of phenyl-ethylamine and *isopropylamine* by an ethylene unit of structure scarcely altered, either qualitatively or quantitatively, the pharmacology of these bases.

Apart from his teaching and research activities, Gunn edited several editions of Cushny's great monograph on pharmacology after the latter author's death; he also wrote an admirable short book on pharmacology from which many generations of medical students have profited; the last edition, in which J. D. P. Graham collaborated, appeared shortly before his death. He was also for many years a member, and later chairman, of the Pharmacopœia Revision Commission, an arduous duty which he took very seriously. British pharmacology owes him a debt of gratitude, not least because the young, but flourishing, British Pharmacological Society owes its origin to his suggestion. Finally, his unselfish nature led him to take a great interest in the careers of young men, and there must be many well-established pharmacologists to-day who owe much to his encouragement and help, and who will remember him with affection and respect.

H. R. ING

Prof. Stanisław Loria

THE death on August 8 of Stanisław Loria is a great loss to Polish physics. He was one of the older generation of physicists, who knew well almost all the great men of the first half of our century. He knew Lorentz and Ehrenfest, and studied with Born and Ladenburg in Breslau. (Usually Prof. Born's first words to me, whenever we met, were: "How is Loria?") He worked in Manchester under Lord Rutherford, and during 1923-26 was a research associate in Pasadena, where he had been invited by Prof. R. A. Millikan. He was well acquainted with the old centres of research. It was a delight to hear him talking about his great teacher Witkowski, about Smoluchowski and Natanson, professors of physics in the old Jagellonian University of Cracow, about Madame Skłodowska Curie, about all the great physicists whom he knew personally and whom the present generation know only from the literature.

Stanisław Loria was born in 1883 in Warsaw. He went to high school and took his university degree in Cracow. In this former Polish capital, then a part of the Austrian Empire, the Polish language was not banned either from the high schools or from the University. There he received his Ph.D. and went for further studies to Wrocław (then Breslau), Göttingen and Berlin, where he spent the years 1907-10. At this time, with Ladenburg, he discovered the phenomenon of anomalous dispersion in hydrogen; the first note on this important effect appeared in *Nature* in 1908.

In 1910 he became a reader (*docent*) in physics in the University of Cracow and in 1919 a professor of physics in the University of Lwów. There he remained until the Second World War—with long

intervals devoted to research in laboratories abroad. Even through the War he was in Lwów—up to 1941, when the Germans occupied the town. His last work before the War concerned the problem of diffraction of electrons with energies between 18,000 and 4,500 volts. Unfortunately, it was only partially published, since the apparatus and notes were taken away or destroyed by the Nazis. Prof. Loria had to hide during the German occupation. In free Poland he was a professor in Wrocław and later in Poznań. He died in a London hospital, where he had undergone an operation.

During his life Prof. Loria was very much interested in theoretical physics; he was one of the first physicists who studied Einstein's paper of 1905 and, some years later, wrote in his vivid style a book on relativity theory, the first that appeared on this subject in Poland.

Prof. Loria will be remembered by many Polish physicists. Some of them, including the present writer, owe to his encouragement and help the beginning of their academic careers.

LEOPOLD INFELD

Mr. E. W. Swanton, O.B.E.

MR. ERNEST WILLIAM SWANTON died at Twickenham on October 21 at the age of eighty-eight. After spending his early years as a schoolmaster and private tutor, Swanton was in 1897 appointed the first curator of the Educational Museum at Haslemere, which had been established in 1888 by Mr. (later Sir) Jonathan Hutchinson, a well-known London surgeon. Hutchinson had many novel ideas on the value and arrangement of museums for educational purposes, particularly in the use of living material, the open display of specimens so that they could be handled and in making objective teaching "within the easy ken of all ordinary minds". It was Swanton who was mainly responsible for putting Hutchinson's ideas into practice, and so successfully did he build up the educational work that S. F. Markham, in his "Report on the Public Museums of the British Isles", was able to say in 1938: "At Haslemere possibly more educational

work of this kind is done than in any comparable museum centre in the country".

In 1898, a few months after his appointment as curator, Swanton began to give regular series of lessons in natural history to children from the local elementary schools, illustrating his lectures by handing around specimens from the Museum collections—an early, if not the earliest, use of museums by organized parties of school-children in this way, and a tradition that has been continued at Haslemere to the present time. In 1899, Swanton organized another feature originated by the founder, which he continued throughout his curatorship: a museum examination for individual local children in which, after several months preparation in the museum galleries in their own time, they were called upon to answer an examination paper covering the whole scope of natural and human history. This was widely hailed as a new contribution to museum teaching techniques.

Swanton had wide antiquarian and natural history interests, but he will be remembered chiefly as a field mycologist. In 1898 he was a foundation member of the British Mycological Society and became its president in 1916. The Society had many notable forays in the Haslemere district with Mr. and Mrs. Swanton as genial hosts. In 1909 he published a useful popular handbook, "Fungi and how to Know Them", which had a second edition in 1922. Among his other publications were "A Pocket Guide to the British Non-Marine Mollusca" (1906), "British Plant Galls" (1912), "A Country Museum" (1947) and, jointly with P. Woods, "Bygone Haslemere" (1914). In the last year of his life he wrote and had privately printed three small books, "A Brief Autobiography", "The Yew Trees of England" and "Memories and Notes".

Swanton was elected an associate of the Linnean Society in 1920, and in 1936 his work at the Museum was recognized by his appointment as M.B.E.; he was advanced to O.B.E. in 1948, the year when he retired. In 1949 he was granted a Civil List pension. His wife, whose help in the work of the Museum he frequently acknowledged, died in 1957.

JOHN CLEGG

NEWS and VIEWS

Royal Medals of the Royal Society

H.M. THE QUEEN 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 1958 as follows: to Prof. H. S. W. Massey, Quain professor of physics at University College in the University of London, for his distinguished contributions to physics, and particularly for his experimental and theoretical studies of collision phenomena in gases; to Prof. A. L. Hodgkin, Royal Society research professor, for his distinguished work on the mechanism of excitation and conduction in nerve and muscle.

Directorship of Dunsink Observatory:

Dr. M. A. Ellison

DR. MERVYN A. ELLISON, principal scientific officer at the Royal Observatory, Blackford Hill, Edinburgh, since 1947, has been appointed senior

professor of astronomy at the Dublin Institute of Advanced Studies and director of the Dunsink Observatory, situated a few miles from Dublin. Dr. Ellison spent his early years in Ireland, first in the south where he was born in 1909, and later at Armagh Observatory, where his father, Canon W. F. A. Ellison, well known for his astronomical optical work, was director during 1918–36. After graduating at Trinity College, Dublin, in 1932, he taught for some years at Sherborne and successfully pursued his study of solar phenomena in his leisure time, until his appointment at Edinburgh enabled him to devote himself completely to this work. He has published a series of papers on solar flares and their terrestrial effects and on stellar scintillation, which have brought him international recognition, and is the author of a well-known book on "The Sun and Its Influence", which has been translated into several languages, including Russian. He is popular as a lecturer and broadcaster and is president of the Astronomical