

and their functions, and in Roy F. Nichol's paper on "War and Research in Social Science", Prof. R. L. Schuyler's paper on "War and Historiography" and Marjorie Nicholson's paper, there are stimulating comments and contributions to the fundamental thinking and philosophy on which alone the wise organization and direction of scientific research can be based.

OBITUARIES

Prof. W. E. H. Berwick

WILLIAM EDWARD HODGSON BERWICK, who died at Bangor on May 13, 1944, was professor of mathematics in the University College of North Wales from 1926 until his retirement, due to ill-health, in 1941. The title of emeritus professor was then conferred upon him by the University of Wales.

Berwick was born at Bradford on March 11, 1888, and was educated at Bradford Grammar School and at Clare College, Cambridge, of which he was a scholar from 1906 until 1910. He was bracketed Fourth Wrangler with C. G. Darwin and G. H. Livens in the Tripos of 1909 (the last year of the order of merit). In 1910 he was placed in the first class of Part II of the Tripos, and he was a Smith's Prizeman in 1911. His mathematical distinction was later recognized by a fellowship at his old College (1921-24) and by a Cambridge Sc.D. in 1925.

After two years as assistant lecturer at Bristol, Berwick went to Bangor as assistant lecturer and afterwards lecturer. Here he remained until 1920, except for two years spent in the anti-aircraft experimental section of the Munitions Inventions Department. At Bangor he had a congenial colleague in G. B. Mathews, who for many years had been almost the only worker on number-theory in England. From Bangor, Berwick went to Leeds, as lecturer and afterwards reader in mathematical analysis.

He was appointed to the chair at Bangor in 1926. Shortly after this, his health began to deteriorate, but he struggled with great courage and fortitude, against increasing disabilities, to continue his teaching work and research.

Berwick's mathematical activity was concerned entirely with number-theory, the theory of equations, and topics arising out of them. His main publication was a Cambridge tract, "Integral Bases", in which he developed methods for determining an integral basis for any algebraic number-field. In particular, such a basis is determined for the field defined by $\sqrt[n]{a}$. This required the discussion of twenty-three separate cases, depending on the nature of the common factors of n and a . The tract is a substantial contribution to algebraic number-theory, and it exhibits Berwick's interest in, and remarkable talent for, difficult enumerations and calculations. This talent was also shown in his calculations dealing with the complex multiplication of the elliptic functions.

Berwick also edited a second edition of Mathews' tract on "Algebraic Equations", to which he added appreciably. He published a number of original papers on complex multiplication and on the resolvents of quintic and sextic equations. He gave a good exposition of the latter subject in a lecture to the London Mathematical Society (printed in the *Journal*, 3; 1928).

Prof. Berwick leaves a widow, to whom all sympathy is due. H. DAVENPORT.

We regret to announce the following deaths:

Lieut.-Colonel L. F. Goodwin, professor of industrial chemistry and chemical engineering in the Queen's University, Kingston, Ontario, on August 15.

Prof. G. F. Stout, during 1903-36 professor of logic and metaphysics in the University of St. Andrews, on August 18, aged eighty-four.

NEWS and VIEWS

Mathematics at Bedford College, London:

Retirement of Prof. Harold Simpson

PROF. HAROLD SIMPSON retires from the chair of mathematics at Bedford College, University of London, at the end of the present session. After a distinguished career at Oxford and a short period at Bangor, North Wales, he became head of the Mathematics Department at Bedford College in 1907 and was appointed professor there in 1912. Prof. Simpson has contributed many important articles on various topics to mathematical and scientific periodicals; in addition, he has written four valuable books. (These have appeared under the name Hilton, which Prof. Simpson gave up in 1939.) The first of these, on "Mathematical Crystallography", appeared in 1903, and his interest in this application of mathematics continues; he has served on the council of the Mineralogical Society on various occasions since 1908 and often attended the meetings of the Geology Section of the British Association. His next books, on "Finite Groups" (1907) and "Homogeneous Linear Substitutions" (1914), are in certain respects an almost essential complement to his first, having regard to the state of algebraic knowledge in Britain at the time. His other book, "Algebraic Plane Curves" (1920, 1932), is well known both to teachers and to

students. Prof. Simpson has served on the council of the London Mathematical Society since 1915 and has been librarian since 1925.

Prof. Simpson played a very active and useful part in the affairs of the University of London. In particular, his colleagues will remember the skill and patience which he exercised in dealing with the business of the various committees with which he was concerned. Many hundreds of students of Bedford College will remember with gratitude his exceptional ability as a teacher; his sympathetic and understanding nature was particularly apparent to those students not so gifted in his subject, but all regard him with affection. Outside his own subject and in addition to his interest in geology, Prof. Simpson was deeply interested in architecture and in music. Students at Bedford College will remember the excursions he organized for them to various centres of architectural interest and his activities with them in the College Musical Society.

Appointment of Dr. W. N. Bailey

DR. W. N. BAILEY, Richardson lecturer in pure mathematics in the University of Manchester, has been appointed to the University chair of mathematics at Bedford College, London. He is perhaps

best known for his work on the theory of generalized hypergeometric series; much of this was incorporated in his Cambridge 'tract' on this subject, an excellent booklet which makes pleasant reading. To him are due two new methods of obtaining transformations of such series; one is algebraic and the other uses contour integrals of Barnes' type. These methods led to various generalizations in the theory, and applications were made to Bessel functions and Legendre functions. Some of his most important work in this field concerned infinite integrals in which the integrand involved the product of three Bessel functions. The argument used an earlier result of his, that Appell's hypergeometric function of two variables could in a particular case be expressed as a product of two ordinary hypergeometric functions. This case has since been of use to other writers and has led to new researches. His most recent work, which is in process of publication, is on the problem of finding transformations of hypergeometric series of both the ordinary and the basic type. Previously, no general method of obtaining transformations of basic series had been given. His new point of view has led to new transformations of basic series, thrown further light upon them and has also led to numerous identities of the Rogers-Ramanujan type.

Science and Industry at Manchester

THE Manchester Chamber of Commerce has done well to issue in pamphlet form (Pp. 63. 1s. 6d.) the addresses given at the four meetings on "Science and Industry" in March and April last. The pamphlet contains not only the addresses of Lord Riverdale, Dr. A. P. M. Fleming, Dr. Andrew McCance and Sir Edward Appleton, which have already been noted in these columns, but also other addresses given at the meetings, such as those of Sir Raymond Streat, Mr. A. H. S. Hincheliffe, announcing the formation of a Joint Standing Council of the Chamber and of the University of Manchester, Mr. C. C. Renold and Mr. R. H. Dobson. Mr. C. C. Renold, following Dr. Fleming's address on "Research Workers: their Education and their Place in Industry", referred particularly to the traditional industries where the application of science should involve challenging the traditions themselves, not merely tuning them up or their further evolution. The emphasis should be on the application of what is already known rather than the extension of the boundaries of knowledge, and Mr. Renold suggested that for the medium-sized traditional concern the key move is the appointment of a scientific liaison officer with broad and general rather than specialized scientific qualifications. His job should be to recognize the problems and indicate lines worthy of investigation, and to help the practical men to apply the answers. With this fairly high-ranking appointment in the management, a re-casting of management structure might also be necessary to separate those functions of management which lend themselves to contact with the scientific liaison officer and thereby provide a convenient channel for his influence to become effective. Some re-casting of the accepted curricula of teaching may be required to provide men of the necessary breadth of scientific appreciation. Mr. R. H. Dobson, following Dr. McCance's paper on the application of research, referred to the bearing of fundamental research on the export trade of Britain, and to the necessity of creating a liaison and a free interchange of ideas and work between technical assistants and the people on the shop floors.

Looting of Simeis Observatory

A TELEGRAM received at the Royal Observatory, Greenwich, from G. A. Shajn, member of the Academy of Sciences of the U.S.S.R., gives an account of the fate suffered at the hands of the enemy by the Simeis Observatory in the Crimea. A week or two before the Germans occupied the southern part of the Crimea, the staff of the Observatory was evacuated, the workers taking with them the object glasses of the two astrographs and part of the laboratory equipment. In May 1944, after the Crimea had been liberated by the Red Army, the Academy of Sciences sent Dr. Shajn to inspect the remains of the Observatory. He established the following facts. During September and October 1943 German specialists dismantled all the Observatory's instruments and moved them in thirty or more trucks to Simferopol, whence they were dispatched to Germany. The equipment stolen was the 40-in. reflecting telescope, the double astrograph, a new astrograph for zonal observations, a photoheliograph, three stellar spectrographs, a large coelostat, a long-screw measuring machine, a Repsold machine, a microphotometer and two astronomical clocks.

In addition to this, much other laboratory equipment and the whole library collection of more than nine thousand negatives, and the equipment of the power station and workshop were all taken away. The wooden parts of three observatory domes were destroyed, and one of them was used as a stable. The wooden building which housed the spectroheliograph was also destroyed, as were a number of other pavilions. On January 18, 1944, the main building of the Observatory, where a Rumanian army unit was quartered, caught fire. It continued to burn for two days, but the commander of the unit did not call out the fire brigade nor did he take any steps to extinguish the flames. British men of science will sympathize with Russian astronomers in the looting and wanton destruction of this famous Observatory.

Tropical Diseases Investigation in New York

A RECENT article in *Nature* (May 9, 1944, p. 625) referred to the part played by parasitic diseases in war and to the realization by American physicians that these diseases constitute a grave danger to their troops overseas. Prof. H. W. Stunkard (*Ann. New York Acad. Sci.*, 44, Art. 3, 189; 1943) has referred to the absence of adequate instruction in tropical medicine or of any institution devoted primarily to work on parasitic diseases in the United States. Nuttall, Brumpt and Fülleborn, he states, thought that New York should provide the financial support for such an institution, because it is the principal shipping and commercial centre in the United States. In time of war, Prof. Stunkard points out, it is one of the chief ports of embarkation and disembarkation, so that there is acute need there for diagnostic, therapeutic and research work. The Columbia University Department of Public Information now announces that plans are being formulated which will, if they are carried out, make New York City a world centre of teaching and research in tropical medicine. Dr. H. S. Mustard, director of the DeLamar Institute of Public Health, Columbia University School of Medicine, states that a substantial beginning has been made, thanks to a temporary grant from the Macy Foundation. An additional grant from the John and Mary H. Markle