(hopefully, though not necessarily, with a band pattern like that found in normal chromosomes). Progress in these experiments will be reported in due course.

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OBITUARIES

Prof. Émile Borel

THE rapid progress of mathematical analysis in the early years of the present century was due in considerable measure to the influence of the great French school, of which Émile Borel, whose death occurred on February 3 at the age of eighty-four, was a leading figure. To high creative ability, he added expository skill and unusual powers of organization; his name is known throughout the mathematical world not only for the doctrines to which it is attached—the Heine–Borel theorem, the Borel summation process, Borel sets—but also for the vast co-operative enterprises which he directed.

The theory of sets was more warmly welcomed in France, so Cantor thought, than in its German home; certainly the volumes of Jordan's classic "Cours d'Analyse" suggested that irksome continuity restrictions could only be removed by some method more powerful than that author's theory of content. In 1898, Borel's "Leçons sur la théorie des fonctions" provided a new theory of measure, while Baire's thesis on discontinuous functions appeared in the same year; and thus the way was open for the remarkable advances of the next decade. The booklet of 1898, based on lectures given at the École Normale, was followed by similar volumes—on divergent series, integral functions, meromorphic functions—all of great value to the students of analysis. The success of the series caused its scope to be broadened, and other writers contributed, under Borel's direction, notably Baire, Lindelöf and Lebesgue. The latter's two brilliant tracts, on integration and on trigonometrical series, showed for the first time to a wide public the full precision and power of the new theory of measure and of the new integral of Lebesgue. Borel never lost interest in the series of monographs; he constantly revised his own earlier volumes and prepared new ones, the latest appearing in 1952. This bore on the constructive definition and effective calculation of numbers, a topic on which he had always held strong views—strong enough at one time to carry him into a heated controversy with Lebesgue. To-day a mathematical library without the Borel monographs is unthinkable.

Shortly after the First World War, Borel, whose chair in the Faculty of Sciences at Paris was that of probability and mathematical physics, undertook the direction of another large co-operative enterprise, the famous "Traité du calcul des probabilités", in four volumes, each of five or six parts; and this itself was supplemented by a further series of monographs on probability, one of which was Borel's own work on the mathematical theory of bridge.

Borel's considerable powers of exposition were not confined to these two famous undertakings; his writings range from school geometry to relativity, all with a sureness of touch and an almost deceptive ease of manner. His triple claim to high rank in the hierarchy of mathematicians, as creative thinker, illuminating writer and powerful organizer, will cause his name long to be remembered.

T. A. A. BROADBENT

Dr. W. L. H. Duckworth

THE death, on February 14, of Dr. W. L. H. Duckworth, at the age of eighty-five, has removed from the Cambridge scene a scholar and a teacher of great distinction. Born in Liverpool in 1870, he was educated in Birkenhead and in France before going to Jesus College, Cambridge, in 1889. His associations with this College, of which he was elected a Fellow in 1893, were to be most intimate for the remainder of his long life, and culminated in his election to the mastership in 1940. At the age of seventy-five he retired from the mastership but continued to live in Jesus College until his final illness. He was president of the Anatomical Society during 1943–45.

Duckworth had very wide interests in anatomy, teratology, primatology, anthropology, archaeology and general natural history. He commenced work in the Anatomy School under Alexander Macalister shortly after obtaining a double first in the Natural Sciences Tripos. This connexion with anatomy he maintained during his clinical studies at St. Bartholomew's Hospital, London, and in 1899 a University lectureship in Cambridge in physical anthropology was established for him. In 1919 he was elected to a readership in human anatomy—a post which he held until 1940. After his retirement he maintained his interest in the collections in the Anatomy School and, in spite of physical disability, did some College and University teaching well into his ninth decade. In his maturity Duckworth's formal teaching was most impressive; complete command of the facts, great blackboard artistry, an almost pedantic accuracy in description ("it is not so much a whorl as a convolution") and an eighteenth-century aristocratic manner combined to give a character to his lectures which was much appreciated by students of all levels of ability and assiduity.

During the early years of the century, Duckworth travelled widely on archaeological and anthropological expeditions, and on visits to departments of anatomy on the Continent. At the same time he pursued the study of human skulls and of recent primates with a

complete devotion. Some of his many studies were summarized in his book "Morphology and Anthropology", published in 1904. This volume is still a mine of recorded facts on man and his closer relations, and it is a great pity that only the first volume of a second edition ever appeared. His work was highly individual in approach and presentation, and he inclined to put off publication in the hope that another specimen would turn up. As a result, much of his investigations was never published. His knowledge of the non-metrical features of the primate skull was unique, and his experience had given him a redoubtable sense of the appropriate in reconstructions. Consequently, he was always critical of the association of the Piltdown jaw with the cranium, and if he had been listened to in the earlier discussions on that material, several reputations in human palaeontology might be a little less tarnished than they now are.

Duckworth was an insatiable collector with deep cultural and historical interests. A long life-time devoted to the gathering of material and the reading of all the related information in a number of languages gave him an impressive, almost an encyclopaedic, knowledge. He was learned in half a dozen fields, and his long list of publications covers only a tithe of his life's work. He is already commemorated in Cambridge in the Laboratory of Physical Anthropology, which bears his name; this is most appropriate, for his prime interest was always the history of the human body.

J. D. BOYD

Prof. S. F. Nadel

THE Australian National University has suffered a great blow by the death in Canberra on January 14 of Prof. S. F. Nadel, professor of anthropology and dean of the Research School of Pacific Studies at the University. He leaves a widow and one daughter.

Siegfried Frederick Stephen Nadel was born in Vienna on April 24, 1903, the son of Dr. Maurice Nadel, a medical practitioner. Of Austrian nationality in his earlier years, he later became a naturalized British subject. He was educated first in Vienna, where he graduated D.Phil. in psychology. After a short period at Cambridge, he went with a Rockefeller fellowship to the University of London, where he took his Ph.D. in anthropology, studying under the late Prof. Bronislaw Malinowski at the London School of Economics. His first anthropological field-

research was undertaken during the years 1934-37 in the Nupe Kingdom of Nigeria. From this work he published two books: "A Black Byzantium" (1942) and "Nupe Religion" (1954). The former has become a standard work in the West African field, and the latter is recognized as a very substantial contribution to the theory of primitive religion. As Government anthropologist in the Anglo-Egyptian Sudan during 1938-41, Nadel carried out research among the remote tribes of the Nuba Mountains. His book "The Nuba" (1947) is one of the most solid and extensive comparative studies in modern social anthropology; it examines the social institutions of ten different hill peoples.

During the Second World War, Nadel was appointed a political officer in Eritrea, and in 1945-46 he became deputy chief secretary in the British Military Administration in Tripolitania, with the rank of lieutenant-colonel. In 1946 he was awarded the Wellcome Medal for his anthropological writings based on his war-time experiences, and in 1950 he was given the Rivers Memorial Medal of the Royal Anthropological Institute for his field-research in Nigeria and the Sudan.

His rise in the academic field was rapid. He became lecturer in anthropology at the London School of Economics in 1946-47, reader in anthropology in the University of Durham 1948-50, and held the chair in anthropology at the Australian National University from 1950 until his death.

Nadel was one of the most significant figures in contemporary British social anthropology. His publications, which were numerous apart from his books, were noted for their theoretical stimulus as well as for the soundness of their ethnography. His general treatise, "The Foundations of Social Anthropology" (1951), was an attempt, on the whole successful, to explore the basic assumptions and methods of his science. It illustrated also his wide and informed interests in other social sciences and in philosophy. Only a week before his death he had completed a second general book, on the theory of social structure, based on lectures given in 1955 at the London School of Economics. This, too, is likely to become a standard work. Nadel was a fine scholar and a fine teacher. The Department of Anthropology and Sociology which he established and led at the Australian National University has already begun to make its mark through the quality of the work produced there.

RAYMOND FIRTH

NEWS and VIEWS

Royal Society of Edinburgh: New Fellows

THE following have been elected Fellows of the Royal Society of Edinburgh: Prof. D. H. R. Barton, regius professor of chemistry, University of Glasgow; Dr. J. Bell, senior lecturer in chemistry and assistant director of the chemical laboratories, University of Glasgow; the Hon. Lord Blades, senator of the College of Justice in Scotland and Lord of Session; Prof. J. H. F. Brotherston, professor of public health and social medicine, University of Edinburgh; Prof. G. M. Burnett, professor of chemistry, University of Aberdeen; Dr. J. G. Campbell, research officer (British Empire Cancer Campaign), Poultry Research Centre, Edinburgh; Dr. T. C. Carter, of the Institute of Animal Genetics, University of Edinburgh; Dr.

C. B. Childs, senior lecturer in natural philosophy, University of Edinburgh; Prof. M. McG. Cooper, professor of agriculture, King's College, Newcastle upon Tyne, and dean of agriculture, University of Durham; Dr. H. K. Cowan, chief medical officer, Department of Health for Scotland; Prof. K. G. Denbigh, professor of chemical technology, University of Edinburgh; Dr. G. R. Evans, senior lecturer in natural philosophy, University of Edinburgh; Dr. D. T. Gibson, senior lecturer in charge of medical chemistry, University of Glasgow; Prof. W. G. Green, professor of mechanical engineering, Heriot-Watt College, Edinburgh; Prof. James Greig, professor of electrical engineering, King's College, University of London; Dr. D. C. Martin, assistant secretary, Royal Society of London; Dr. R. H. Millar, zoologist