only did he clean the fossils and photograph them himself, but also he made the excellent casts which have enabled workers in Europe, who could not see the fossils themselves, to form a very exact idea of their nature. The attainment of these successful results implied a very happy spirit of friendship in the team of workers who undertook the various tasks, and called for all the unselfishness and spirit of conciliation which were so conspicuous in Dr. Davidson Black, and without which the spirit of harmonious co-operation would have been impossible. He was always very jealous of the honour of his collaborators, especially of the Chinese geologists. When, in 1929, the Geological Society of China created the Grabau Gold Medal to be awarded for distinguished work, and recommended him for the first award, he protested that it should go to Dr. Grabau's pupil Pei, who had made the great discoveries. Greatly as he appreciated the distinction, which was made doubly attractive by being associated with his old friend and master Grabau, he felt very strongly that the leader of the field work who had found the fossils would be the more appropriate recipient. The Society, however, wisely thought better, and solved the difficulty by awarding another gold medal to Mr. Pei. This incident, however, was typical of his attitude towards all his Chinese colleagues, and explains a great deal of the conspicuous success of the Cenozoic Laboratory.

Dr. Davidson Black's genius for friendship really lies at the back of the great work he has been carrying on. He was a man of charming personality, of great generosity and modesty. He was as enterprising and resourceful in superintending a children's party as he was in directing the excavations at Chou Kou Tien. It was a source of intense satisfaction to him when he was invited by the Royal Society to deliver the Croonian Lecture in 1932. It was not so much any pride in receiving this high distinction, as the opportunity it gave him to describe the work in Peking in his own restrained and careful way, and particularly the opportunity it offered of making adequate acknowledgment of the help he had received from others, in particular his colleagues in Peking; and when in the following year he was elected to the fellowship of the Royal Society, he received this distinction with the same modesty. These genial qualities earned him the friendship of a wide circle of people of all nationalities in Peking, who are now mourning their great loss.

Prof. Davidson Black's methods of work were peculiar in many respects. All his serious work was done at night-time for the sake of the quiet and the freedom from disturbance which it brought. He was fortunate in having the complete confidence and support of the Rockefeller Foundation of New York, which fully realised its great good fortune in having in its service so conspicuously competent a man. With its backing, Davidson Black was looking forward to a long life-time of investigation. On his way to England two years ago to deliver his Croonian lecture, he made an extended recon-

naissance in India, Persia, Western Asia and Egypt to discover likely sites on which to carry out excavations for fossils of men and apes; and for several years he has lived in the hope of exploring the Sinkiang Province of Chinese Turkestan, in the conviction that he would there find fossil apes more nearly akin to man than anything that is yet known. In fact his life was devoted to the study of Central Asia, in the hope that the geographical knowledge he acquired would prove of use to him for realising his hopes. He always kept by his bedside the lives of Genghis Khan and Tamerlane written a few years ago by Harold Lamb. By saturating himself with these works he felt he was becoming acquainted with the part of the world in which his chief hopes were centred.

In taking farewell of Davidson Black one regrets not only the loss of a friend of particular charm and generosity, but also the cutting short of the brilliant work in which he was engaged, and which there is no one else competent to complete.

G. ELLIOT SMITH.

PROF. D. M. Y. SOMMERVILLE

DUNCAN McLAREN YOUNG SOMMERVILLE was born in 1879 in Rajputana, and died on January 31, 1934, in New Zealand. After receiving an early education at Perth Academy he went to the University of St. Andrews, where his mathematical and scientific ability soon became apparent. In 1905 he was appointed lecturer in the Mathematics Department at St. Andrews, a post which he filled until 1915, when he became professor of pure and applied mathematics in Victoria University College, Wellington, New Zealand.

While Sommerville was essentially a geometer he had considerable interests in other sciences; and it is noteworthy that the classes which he chose to attend in his fourth year of study at St. Andrews had been in anatomy and chemistry. Crystallography in particular appealed to him; and doubtless these possible outlets influenced his geometrical concepts and led Sommerville to ponder over space-filling figures, and gave an early impetus to thoughts in a field which he made peculiarly his own. Beneath his outward shyness considerable talents lay concealed: his intellectual grasp of geometry was balanced by a deftness in making models, and on the æsthetic side by an undoubted talent with the brush. In the course of years he produced a pleasing collection of water colour sketches of New Zealand scenery.

Sommerville's mathematical work falls naturally into two parts: that of the teacher and that of the original investigator. His textbooks, which have appeared at regular intervals, are a valuable link between the old and the new era in the teaching of geometry at college. They are the "Elements of Non-Euclidean Geometry" (1914), "Analytical Conics" (1924), "Introduction to the Geometry of n Dimensions" (1929), and the recent "Three Dimensional Geometry" (1934), the appearance of which he did not live to see. All

are characterised by a variety of algebraic treatment and a wealth of illustrations and examples, but nowhere does technical manipulation outrun the geometry. The first of these, a provocative little book, appeared at a time when metrical systems alternative to that of Euclid were known only to the few. It is not surprising that such a teacher carried throughout his life the esteem and appreciation of his students. One of his most distinguished pupils, A. C. Aitken, writes of the critical time in his own student days when the University of Otago was temporarily without a professor of mathematics, and how willingly Sommerville filled the gap by weekly correspondence. The written solutions and comments went far beyond what was necessary for mere elucidation.

Beginning in 1905, Sommerville wrote more than thirty original papers and notes which have been published in well-known journals at home and abroad. The first, entitled "Networks of the Plane in Absolute Geometry" (*Proc. Roy. Soc. Edinburgh*, 25) is typical of the sequel. The main theme is that of combinatory geometry, exemplified by a systematic investigation of "The Division of Space by Congruent Triangles and Tetrahedra" (1923) in the same journal, and extended to n dimensions (Palermo, 48, 9-22; 1924). Out of this grew the work upon the relations connecting angle sum and the volume of a polytope in space of n dimensions (*Proc. Roy. Soc. London*, 1927).

Sommerville was ever ready to apply his special gifts to unusual examples, as in his analysis of preferential voting and a highly original treatment of the musical scale. He was also much interested in astronomy, and was one of the founders of the New Zealand Astronomical Society and its first secretary. At the Adelaide meeting of the Australasian Association for the Advancement of Science held in 1924 he was president of Section A. His was a life of unsparing activity, and the fruits of his work will abide. There has passed from Scotland one who had already become her leading geometer of the present century.

H. W. TURNBULL.

WE regret to announce the following deaths:

Dr. James Mackintosh Bell, O.B.E., formerly of the Canadian Geological Survey, and in 1905-1911 director of the Geological Survey of New Zealand, on March 31, aged fifty-six years.

Dr. James Munsie Bell, dean of the School of Applied Science in the University of North Carolina, who has carried out important researches in physical chemistry, on March 3, aged fifty-three years.

Prof. Arthur Ranum, professor of mathematics at Cornell University, on February 28, aged sixty-three years.

News and Views

Caleb Whitefoord, F.R.S. (1734-1810)

CALEB WHITEFOORD, friend of Benjamin Franklin in the hey-day of the latter's fame, was born in 1734, at Edinburgh (the exact date would seem to be unrecorded). Whitefoord was the natural son of Col. Charles Whitefoord, himself the third son of Sir Adam Whitefoord, Bt., of the shire of Ayr. He died on February 4, 1810, at his home in Argyle Street, in the vicinity of Soho, and was buried in Paddington Churchyard. Graduating at the University of Edinburgh, Whitefoord sought London as the best field for the exercise of his varied gifts, chief among these being a faculty for satirical journalism. Eventually there were few literary, scientific and political celebrities of his period outside his circle. Intimacy with Franklin (they were then neighbours in Craven Street, Strand) led to the opinion that Whitefoord would make an eligible diplomatic agent for the purpose of assisting in the restoration of peace with America. Accordingly, he became secretary to the Commission which concluded peace with the United States at Paris, in 1782. He was elected a fellow of the Royal Society on June 24, 1784, when Sir Joseph Banks was president. A fellow of the Royal Society of Edinburgh, and of the Society of Antiquaries, London, he was a vice-president of the Society of Arts, and a member of the Philosophical Society of Philadelphia. Whitefoord's portrait was painted by Sir Joshua Reynolds in the eventful year 1782, and

hangs in the National Portrait Gallery; a mezzotint of this by S. W. Reynolds is prized. A pleasing drawing (head and bust), by R. Cosway, is reproduced in the *European Magazine* for 1810. In 1790 Whitefoord presented a fine portrait of Benjamin Franklin, by Joseph Wright, to the Royal Society. Such interesting connexion with the Society is further emphasised by the circumstance that Whitefoord, with Count Rumford, signed, in 1801, the certificate of recommendation for the election of Warren Hastings.

Industrial Research and the State

MR. STANLEY BALDWIN, as Lord President of the Council, may be regarded as a Minister of Research, since he is responsible to Parliament for the Committee of the Privy Council for Scientific and Industrial Research. He is keenly alive to the possibilities of scientific and industrial research, and this attitude marks the message he sent recently to the conference of industrial research associations, reference to which was made in *NATURE* of March 31, p. 504. Mr. Baldwin confirmed his promise on behalf of the Government in replying to a question in the House of Commons on March 27, when he said:

"ABOUT two years ago, steps were taken by the Department of Scientific and Industrial Research to ascertain the views of the Councils of Research Associations connected with the Department on a