data are beginning to take form. In this discussion an effort has been made to point out the trends, to interpret their possibilities on the basis of the mechanisms involved, and to give some intimation as to their relative applicabilities and limitations. It is clear that certain of them offer reasonable promise of exerting a real effect in the prevention of influenza; it remains only to prove them.

OBITUARY

FRANK DAWSON ADAMS

ON December 29, 1942, Dr. Frank Dawson Adams died at his home, 1173 Mountain Street, Montreal. Dr. Adams was one of Canada's foremost men of science and one of her most distinguished citizens.

Born in Montreal, in September, 1859, he was educated at the Montreal High School and McGill University. Choosing geology as his major subject of study, a science then just coming into its own in Canada, he graduated with first rank honors in natural science in 1878, when only nineteen years of age. He subsequently studied at Yale University, Johns Hopkins and finally at Heidelberg. From the latter university he received his Ph.D. degree "summa cum laude" in 1892. From McGill he received the doctor of science degree in 1902 for distinction in science and later the LL.D. degree for distinguished public service.

His first appointment was in 1880 to the staff of the Canadian Geological Survey. He was appointed lecturer in geology at McGill in 1889 and Logan professor of geology in 1893. He was last but one of those who, receiving their inspiration from the late Sir William Dawson, by far the greatest principal McGill has had, was appointed to the staff of McGill by Sir William, whom he ultimately succeeded as head of the department of geology. During the succeeding years he arose step by step to merit almost every distinction which a man of science can hope to attain.

In Canada, Toronto, Queen's, Bishop's and Mount Allison Universities similarly honored him with the LL.D. He was early elected fellow of the Royal Society of Canada and later became its president. In Britain he was elected a fellow of the Royal Society of London and also of the Geological Society of London. By the latter society he was awarded the Wollaston Gold Medal, the greatest distinction the society has to offer. It was characteristic of him that when he received the cable telling him of the award, he first thought it was a mistake and that it must be meant for some one who happened to have the same name as himself.

He was equally recognized outside of Canada and the British Empire. He received honorary degrees from a number of American universities and had the unique distinction of being the only Canadian foreign associate member of the American Academy of Science. He was also elected foreign member of the Swedish Academy of Science, honorary member of the Mineralogical Society of Russia, of the Geological Society of Belgium and of many other scientific societies of equal distinction in other foreign countries. The International Geological Society elected him its president in 1913. The Geological Society of America elected him to a similar honor in 1918.

In Canada every effort to utilize more fully our economic resources received his loyal and hearty support. He was an active member of the Canadian Conservation Commission in the days when it was an active force in Canada and before political manipulation put it out of business. From the foundation of the National Research Council until his retirement from the university he was an active and distinguished member of that body and for a short time its executive chairman.

As a geologist he ranked first among his profession in Canada. For years a constant stream of papers came from his pen, covering almost every phase of Canadian geology. These appeared in the publications of the leading scientific journals in America and Britain, dealing with natural science problems. Altogether approximately ninety papers so appeared. From this long list it is difficult to select what might be considered most important. Perhaps the papers which gave him the greatest satisfaction were: "The Transfusion of Matter from one Solid to Another under the Influence of Heat"; "An Experimental Investigation in the Flow of Marble" (with J. T. Nicolson); "Experimental Investigation of the Compressibility and Plastic Deformation of Certain Rocks" (with Ernest C. Coker); "Experimental Work on the Flow of Rocks"; "An Experimental Contribution to the Question of the Depth of the Zone of Flow in the Earth's Crust"; "On the Origin and Nature of Ore Deposits—an Historical Study"; "On the Amount of Internal Friction Developed in Rocks during Deformation, and of the Relative Plasticity of Different Types of Rocks" (with J. A. Bancroft).

These researches, extending over a number of years, dealing with the flow of rocks under changing conditions of temperature and pressure, carried on with the support of the Carnegie Foundation, remain a permanent contribution to our knowledge of the manner in which internal changes in the structure of the earth were brought about in geological time. They were

remarkable both because of the mechanical ingenuity involved in the study and for the results obtained.

His last contribution to science, "The Birth and Development of the Geological Sciences," is the one in which he doubtless took the greatest pride. It will without question remain a standard work on the subject for many generations. To find the material he visited all the great libraries of Europe and America where information was to be found. For this purpose he collected a splendid library on the history of the physical sciences. Just a few weeks before his death he completed the cataloguing of this library and handed it to McGill University, a splendid gift, in some ways unique, which cost many thousands of dollars.

His studies, however, had a much wider range than Canada. He traveled widely. Everywhere he went geology was his major interest. For example, after his retirement, on a trip around the world he visited Ceylon, and his study of "The Geology of Ceylon," published in the *Canadian Journal of Research,* is a major contribution to that subject and was an important factor in stimulating the Geological Survey of India to intensify its activities.

Just a word about the man—modest but not retiring he had a zeal for knowledge that was unremitting; kindly and considerate in his relation with others, he was nevertheless firm in his purpose to accomplish the task in hand. Because of these qualities and his strong sense of justice and fair play he won the respect and good will and confidence of both the students of his faculty and the professors and instructors. He was one of a small group responsible for the establishment of a graduate faculty at McGill and was its first chairman. As dean of the faculty of applied science and later as vice-principal and for a time acting principal, he showed the same qualities in administration as he had shown in his scientific work.

It was my good fortune to be associated with him in various ways for the past fifty years. Although the activities of my life led me far afield we always maintained a close and affectionate friendship. I worked with him on the Conservation Commission, on the National Research Council and in many religious and social activities. He was with me as assistant director of the Khaki University overseas during World War I. In my fifty years of association with university work I know of no one who seemed so completely to have found and maintained that balance of kindness of heart and firmness of purpose which was especially characteristic of him. He had a great gift of friendship—the value of which I richly experienced. He had a deep sense of the value of the religious life. While holding firmly to his own views, he was broad-minded and tolerant of those who differed from him. He lived the doctrine of human brotherhood.

H. M. TORY

AMIN FAHD MALUF PASHA

MAJOR-GENERAL AMIN FAHD MALUF PASHA, B.A., M.D. (American University of Beirût), formerly principal medical officer of the Iraq Army, died at his home in Heliopolis, Egypt, on January 21, in his seventy-first year, after a prolonged illness. He began his career in military medicine as an officer in the Egyptian Army and served a few years in the Sudan. Upon the Arabian Revolt in the last war, he resigned his position in the Egyptian Army and joined King Feisal's troops as a surgeon. He was decorated ten times. Toward the end of the war he nearly succumbed to an attack of typhus. He was elevated from colonelcy and created a Pasha on his retirement about fifteen years ago. He was much interested in the structure and habits of animals. His latest works are "An Arabic Zoological Dictionary" (Cairo: Al-Muktataf Press, 1932, 271 pp.) and "An Astronomical Glossary" (Cairo: Egyptian Library Press, 1935, 142 pp.). He was held in high regard by his colleagues and acquaintances notwithstanding the reserve and forthrightness which so often characterizes a soldier who cheats death several times and who dedicates his bachelor life to the state.

N. S. R. MALUF

RECENT DEATHS

DR. EDWIN B. TWITMYER, professor of psychology at the University of Pennsylvania, director of the Psychological Laboratory and Clinic, died on March 3 at the age of sixty-nine years. He had been a member of the faculty of the university for forty-six years.

DR. FRANK STURDY SINNATT, director of the Fuel Research Station of the British Department of Scientific and Industrial Research, died on January 27 at the age of sixty-two years.

THE death is announced in Indo-China of Dr. Alexandre Emile John Yersin, a director of the Pasteur Institute in Paris. He was sixty years old. Dr. Yersin established the first colonial Pasteur Institute at Nha Nang, Annam, and later was appointed inspector general of all four institutes in that area. The other three institutes are in Saigon, Hanoi and Dalat. He also founded a branch institute under the auspices of the Chinese government at Canton.

PROFESSOR A. K. CAJANDER, three times Prime Minister of Finland, died on January 21 at the age of sixty-four years. He was the leading Finnish forestry expert. From 1904 to 1911 he was lecturer in botany at Helsinki University, and in 1911 he became professor of forestry. He was also director-general of the State Board of Forestry.