Sir Patrick Laidlaw, F.R.S.

SIR PATRICK LAIDLAW died on March 19 in his fifty-ninth year. His death is a major loss to medical science and a most grievous blow to all those who were privileged to know him personally.

Patrick Playfair Laidlaw, the son of Dr. R. Laidlaw, who was medical officer in the Seychelles, was born on September 26, 1881. A family removal to Cambridge enabled him to enter the Leys School, and from school he proceeded to St. John's College with a scholarship. He completed his medical course at Guy's Hospital and graduated B.Ch.(Camb.) in 1907.

Whilst still a student at Cambridge, Laidlaw gave evidence of his remarkable gifts for research by the publication of several papers on anatomical subjects and one outstanding piece of work on blood pigments. After a few years as demonstrator of physiology at Guy's, he joined the staff of the Wellcome Physiological Research Laboratories, and there, during the next five years (1909–14), he published, either alone or with his colleagues, more than a score of papers on pharmacological subjects, the best known of which is the classical work on histamine, carried out in collaboration with H. H. Dale. This happy and fruitful association with Dale was temporarily broken in 1914 when Laidlaw returned to Guy's as lecturer in pathology, but was renewed in 1922 when he was invited to rejoin the staff of the National Institute for Medical Research. Although never very happy in his academic teaching posts, Laidlaw's strenuous war years at Guy's had helped to give him the remarkable depth and width of knowledge in several medical sciences, which rapidly bore fruit in the new environment. He collaborated in important protozoological and biochemical investigations, but it is for his pioneer researches on virus diseases that he will be most especially remembered.

Laidlaw's study of canine distemper in collaboration with G. W. Dunkin will long remain a model for those engaged in virus research. In a series of papers they described the pathology of the disease in dogs and ferrets, brought forward irrefutable proof that the disease agent concerned is a filterable virus, and finally reported the successful immunization of dogs and ferrets by means of formolized virus vaccines. The outstanding importance of this work was immediately recognized and their method of prophylaxis adopted in veterinary practice.

His next major research was on influenza. Together with C. H. Andrewes and Wilson Smith he succeeded, in 1933, in isolating a virus from patients. This discovery provided a new basis from which to attack the many problems presented by epidemic influenza, and Laidlaw with his colleagues spent the next three years in laying the foundations of our newer knowledge of the disease. On his appointment as deputy director of the National Institute in 1936, he took a less active share in the influenza work but remained always at the service of those who carried it forward. On the outbreak of the War he turned with fresh enthusiasm to new virus problems, and continued working at them until the day of his death.

Laidlaw's work brought well-deserved recognition in his later years. He was elected a fellow of the Royal Society in 1927, was awarded its Royal Medal in 1933, and was elected F.R.C.P. in 1934. The following year he was honoured with knighthood. Shortly before his death he became an honorary fellow of his old college, St. John's, Cambridge.

It is not, however, as a famous man that Laidlaw will be mourned by those who knew him well, but as a wise and ever-helpful colleague, a generous and most loyal friend. Of a shy and reserved disposition, he shunned the limelight and detested anything which savoured of self-advertisement. His keen critical faculty was at the service of those who sought his advice, but was most constantly directed against himself and his own work. His curiosity had no bounds and urged him to incessant probings in new directions, so that his 'unsuccessful' experiments were a constant stimulus and source of inspiration to those around him. Well might he have said with Leeuwenhoek, "The work which I've done for many a long year was not pursued in order to gain the praise I now enjoy but chiefly from a craving after knowledge." W. S.

Prof. E. Branly

PROF. EDOUARD BRANLY, the inventor of the coherer, which enabled Marconi to develop wireless communication and who is known in France as the 'father of wireless', died on March 25 at the age of ninety-five. He was born at Amiens on October 23, 1844, and after showing great brilliance as a schoolboy entered the École Normale. In 1868 he became a professor at the Lycée of Bourges.

Branly's bent, however, was for research work. He therefore went to the Sorbonne and took up work in the physical laboratory and began his study of electricity and magnetism. He was a poor man, and in order to become self-supporting he qualified as a medical man and practised medicine for about twenty years, spending all his spare time in electromagnetic research, for which he received the degree of doctor of science. In 1873 he went to the Institut Catholique in Paris, where he set up a small laboratory, and it was here that his investigations led to the discovery that the electrical resistance between loose particles of metal, such as iron filings in contact with one another, diminishes under the influence of electric action.

In 1872, Branly published a paper on the "Measurement of the Intensity of Currents by the Electrometer"; in 1892, one on "The Electrical Resistance at the Contact of Two Metals", and in 1893 one on "The Property of Discharging Electrified Bodies Produced in Gases by Incandescent Bodies and by Electric Sparks" and in the same year, one on the "Resistance of Thin Metallic Films". The last four of these papers were published in abstract in the *Journal of the Institution of Electrical Engineers*.

Branly made a series of observations into the variations of conductivity of a large number of materials under varying electrical influences. He found that substances which responded best to the phenomenon

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of sudden increase of conductivity were iron, copper, brass, aluminium, zinc and similar metals. He discovered also that the conductive effect on metallic filings, caused by a nearby electrical discharge, persists for a comparatively long period, but disappears rapidly if subjected to a shock. He obtained the required result by tapping the tube in which the filings are contained. In this way he discovered a principle which was adopted in the original Marconi system. Marconi was very grateful for the help he had received from Branly. He acknowledged this help in his first cross-Channel marconigram in 1899, which was addressed to Branly. It read as follows: "Marconi sends M. Branly his respectful compliments across the Channel this fine achievement being partly due to the remarkable researches of M. Branly."

In 1889 Lodge showed that if two small metal spheres were arranged so that they were nearly touching and separated only by a very minute film of air, the current from a small battery was unable to pass between them. This was proved by the fact that no reading was observable when a sensitive galvanometer was placed in a circuit between them. When, however, a Leyden jar was suddenly discharged in their vicinity, the air film was broken down and they cohered, making electrical contact with one another and allowing a current to pass through the galvanometer. This experiment was described in the year 1890 before the Institution of Electrical Engineers and an account of it appears in the *Journal*. In 1890, Prof. Branly proved the very important fact that filings could be made to cohere by an electric discharge taking place in their vicinity. He described his researches in "La Lumière Électrique" (May and June 1891), and he showed that metal filings could be decohered by a slight concussion. Lodge realized the importance of this fact. He introduced modifications in the Branly coherer and improved its sensitiveness considerably.

Lodge exhibited his apparatus in 1894 before the British Association at Oxford, and received signals at a distance of 150 yards. At the time, the idea did not occur to him that this instrument might be turned to practical use for long-distance radiotelegraphy. In 1902 Branly made another coherer in the form of a tiny tripod, having steel points at the end of each leg. He stood this upon the surface of a flat plate of steel. Under normal conditions no current passed between the tripod and the plate, but in the presence of the Hertzian wave coherence took place. He arranged his recording apparatus in such a way as to jar the plate immediately the wave had passed, thus effecting decoherence.

Throughout the rest of his long life, Branly went steadily on with research work on wireless waves and made a number of discoveries which he communicated at various times to French scientific bodies. He also wrote a number of papers which appeared in the *Comptes rendus* of the Paris Academy of Sciences. Even after the outbreak of War he remained at work in Paris, but in October, yielding to the persuasion of his family, he returned to the country. He was made a Grand Officer of the Legion of Honour and received many foreign distinctions.

Dr. A. G. Jacques

IN the field of experimental cell and general physiology the name of Alfred George Jacques had become increasingly prominent during recent years. *Science* announces that Jacques died by drowning on February 20, 1939—and to many readers of NATURE this news, already a year old, must come with the shock of surprise and it will occasion widespread regret among experimental biologists.

Though A. G. Jacques was born in England at Sutton, Surrey, on April 18, 1896, he was educated mainly in Canada, later obtained the Ph.D. degree at Harvard, and his name rightfully attained prominence from his work at the Rockefeller Institute for Medical Research. In fruitful collaboration with Dr. W. J. V. Osterhout, Jacques' early work was devoted to problems of cell physiology, using the large vesicles of Valonia and Halicystis as experimental material. These fascinating organisms still claimed his attention until his death which, it is learned, occurred at Bermuda, where he had conducted much of his experimental work. Theoretical and experimental works mainly published under his name, in the *Journal of General Physiology*, present an impressive record of a career so prematurely ended.

Jacques investigated the mechanism which regulates the composition of the sap of the large vesicles which he studied—he accepted the challenge which the outstanding accumulation of inorganic salts in plant cells presents—and his name will be identified with theories of salt absorption based on the view that salts enter cells in the form of undissociated molecules. This view arose from an ingenious series of experiments, in which Jacques collaborated, which showed that certain weak electrolytes (H_2CO_3, H_2S, NH_4OH, etc.) penetrate most readily as neutral molecules, and, therefore, their entrance into the sap was controlled by the pH relations of sap and external solution. This novel idea was extended by Jacques in his later work to embrace the entrance of the alkali metals into cells. A steady stream of papers, both theoretical and experimental, appeared under his name. It would be idle in short space to summarize his work; neither should we declare that he had reached his final goal; but the distance he had travelled in a few years of active work is the measure of the loss which science sustains by his untimely death. The challenge of the problem to which Jacques devoted himself still remains—those who take it up where he perforce relinquished it will long recognize his worth and regret his passing.

F. C. STEWARD.

WE regret to announce the following deaths:

Sir James MacKenna, C.I.E., formerly agricultural adviser to the Central Government of India, and director of the Agricultural Research Institute, Pusa, on April 3, aged sixty-seven years.

Dr. Oran Raber, plant physiologist and conservationist to the U.S. Forest Service, on February 29, aged forty-seven years.

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