

visionally made by the founder as regards library buildings and church organs; but while they are fulfilling these they are starting on their own initiative inquiries and operations in other directions that are likely to bear good fruit. The elaborate investigations and reports they have subsidised and published on the library system, urban and rural, on plans for the physical well-being of mothers and children, on public play-centres and playgrounds, on municipal baths and wash-houses, etc., have been real contributions to knowledge. During this time of reconstruction a Trust that is thus accurately informed as to public needs, and able to aid in meeting them, is bound to render valuable service to the community. In this country already something like 700 Carnegie libraries, costing some 2½ millions, have been provided.

In the United States and Canada Mr. Carnegie's benefactions have been even more generous and more wide-reaching. Altogether they are more than 60,000,000*l.* One endowment provides pensions and retiring allowances for professors in approved American colleges and universities. Here again the indirect effect has been more important than the direct. To be "approved," an institution has to fulfil conditions as to government, efficiency, and standing laid down by the Trustees, with the result that many radical reforms in organisation have been induced, and a general raising of the educational standard has taken place. Another endowment—that of the Carnegie Institution of Washington—is professedly for the encouragement of scientific research in the widest sense of the term. Elaborate institutions in all parts of the United States, and for all branches of scientific inquiry, have grown up under its fosterage. Expeditions have been subsidised, equipment of a costly kind has been supplied for observatories, laboratories, and biological and other experimental stations, and also for individual workers everywhere who prove their competence to use it fruitfully. The Mount Wilson Observatory, of which Dr. G. E. Hale is director, is one of the most notable of these institutions. The grant to this observatory last year exceeded 30,000*l.*, and the total amount expended upon the observatory since its foundation is more than 250,000*l.* There is also in New York a central Carnegie Trust, charged to assist the others as need arises, and generally to do for America what the United Kingdom Trust does for this country.

The difficulty of so applying his wealth as to avoid doing harm was always present to Mr. Carnegie's mind. Critics of his schemes did not let him forget it. In establishing here, and in other countries, Hero Funds for the recognition of individual deeds of self-sacrifice in the saving of life, and in founding a wealthy organisation for the express purpose of propagating peace and international goodwill, he thought that he had succeeded in safeguarding the principle of *nil nocere*. The war caused him to forgo some of his most cherished prepossessions, particularly as regards Germany and the

ex-German Emperor, and the prospect of building up a world-wide peace based upon democratic solidarity. In spite of his hatred of warfare and the spirit associated with it, he came to see that only by the military victory of the Allies could the future of true civilisation be assured, and he willingly assented to a large grant from the Peace Fund for the relief of Belgian distress. In general, it may truly be said that Mr. Carnegie's ideas were based on sane visions of human progress, that he backed them lavishly, and that he enlisted the best men of his time in their working out. Their fruition, if it comes more tardily than in his eagerness he hoped, will come surely in some fashion, even if it be other than he pictured. He "builted better than he knew."

#### WALTER GOULD DAVIS.

MR. WALTER GOULD DAVIS, director of the Meteorological Bureau of Argentina for many years, died at his birthplace, Danville, Vermont, U.S.A., on April 30 in his sixty-eighth year. His early training was that of a civil engineer, especially in railroad surveying through the White Mountains. When in his early twenties, he went to Argentina as assistant to his uncle, Dr. B. A. Gould, founder of the Cordoba Astronomical Observatory. On the resignation of Dr. Gould in 1885, the National Meteorological Service, which was then a branch of the Cordoba Observatory, was reconstituted and Mr. Davis appointed director at the early age of thirty-four.

The organisation of such a service in a new country where voluntary observers are few was a matter calling for great energy, tact, and perseverance, but so successful was Mr. Davis in his efforts that by 1901 the seventeen meteorological stations to which he fell heir in 1885 had increased to eighty-eight, and 240 extra rainfall stations had been established. Thereafter the service developed with ever increasing rapidity, and on his retirement in 1915 there were forty-two stations of the first order, 152 of the second order, while rainfall was being observed at 1930 other places. The removal of the central office from Cordoba to Buenos Aires in 1901 enabled the long-cherished scheme of a daily weather map to be realised, and effective co-operation with other South American Republics resulted in the production of a daily weather map which covers 53° of latitude from Para, near the Equator, to Punta Arenas, in Magellan Strait. Mr. Davis established the hydrometric branch of his service in 1902 and was responsible for the dispatch of expeditions to investigate conditions in the Rio Parana, Paraguay and Pilcomayo, and other rivers in Matto Grosso and near the eastern Bolivian boundary. In 1904 he established a magnetic section with a central observatory at Pilar, near Cordoba, from which magnetic surveys of the whole country were organised in 1908 and 1912. In the latter year the systematic measurement of the level of the subterranean waters by means of gauges at twenty-three places was initiated. In February,

1904, Mr. Davis took over, on behalf of his service, from the *Scotia* Antarctic Expedition their sub-Antarctic station on Laurie Island, S. Orkneys, where an unbroken series of hourly meteorological and magnetical observations has since been maintained and upper air research undertaken.

The results of the labours of Mr. Davis are contained in thirteen large quarto volumes of the "Anales" of the Argentine Meteorological Office. Mr. Davis also wrote three works on the climate of the Republic, which appeared at intervals of about ten years from 1889 to 1910, and in 1914 he published his "History and Organisation," which gave a condensed summary of the work carried on during his thirty years of office. Whatever the changes of Government might be, Mr. Davis was always *persona grata* at Government House, and but for the economic crises that set in during 1912 his schemes for the setting up of a solar physics observatory in N.W. Argentina and the establishment of another Antarctic station on the west coast of Graham Land would have materialised. Mr. Davis at the time of his death was the oldest member of the International Meteorological Committee, to which he was elected in 1894. His last appearance at an international meeting was at Berlin in 1910, when he brought forward a recommendation for the introduction of a standard evaporimeter, the subject of evaporation being one to which he had always given great attention. He was elected an Honorary Fellow of the Royal Meteorological Society in 1898, and among other honours received many medals and diplomas from scientific institutions.

In official life, as in private life, he commanded the personal respect and admiration of all with whom he came in contact, and those who had the privilege to work under him could not help being impressed with his untiring industry and the calmness with which he invariably met the exasperating situations that so often arose in a land where the conduct of a large up-to-date scientific organisation is beset with many difficulties. R. C. M.

#### PROF. WILLIAM GILSON FARLOW.

**A**MONG the leading botanists of America the name of Prof. Farlow, whose death was announced in NATURE for June 26, stood out, by seniority, by personal influence, and by scientific attainment. Prof. Farlow died on June 3 after an illness of three weeks. He was born in Boston, December 17, 1844, and graduated from Harvard College in the class of 1866, obtaining the degree of A.M. in 1869, and of M.D. in 1870. Doubtless he was one of those who followed the wise advice of Asa Gray: "Graduate in medicine; you never know how it will come in useful afterwards."

After graduation Farlow came to Europe and pursued his botanical studies in Strassburg. The old French Académie had been replaced shortly after the conclusion of the peace of 1871 by a German university, staffed by professors carefully selected for their eminence. De Bary, an Alsatian

by birth, was the professor of botany. The study of fungi was a speciality of his laboratory, which was carried on in the cramped rooms of the old Académie. There no doubt the foundations were securely laid for that special study of fungi which Farlow pursued throughout his life. His most notable work at that time was, however, on the ferns; for he was the first to describe the direct origin of the sporophyte from the prothallus by vegetative outgrowth without the ordinary sexual fusion. This phenomenon of "apogamy," though familiar enough to all students now, was in 1874 the first notable digression from the regular alternation described by Hofmeister. Ten years elapsed before the observation of "apospory" by Druery. The discovery of these two cognate innovations has given a fresh impetus to inquiry into the nature of alternation, though alternation itself still remains an unsolved enigma.

After his return to America Farlow was for a time assistant to Prof. Asa Gray; but in 1874 he was appointed assistant professor in Harvard, and in 1879 he received the title of professor of cryptogamic botany, an appointment which he held for a period of forty years. His position became gradually stronger as years passed by, and there was probably among the botanists of America none whose opinion was held in greater esteem than his, while his published work touched a much wider circle than that in his own country.

In America Farlow was a pioneer in cryptogamic botany. His work was largely floristic and systematic. But experimental work was also conducted in his laboratory, and a school was founded, of which a brilliant example is seen in Prof. Roland Thaxter, the monographer of the Laboulbeniaceæ.

Personally Farlow was of small build, active, and most vivacious, with a constant ripple of quiet humour, a capital raconteur, and a charming host. In 1900 he married Miss Lillian Horsford. Together they made their home at Harvard, and their country home at Chocorua in the White Mountains of New Hampshire, places of happy memory to those who were fortunate enough to be their guests. Keenly alive to the duties and aspirations of the Allies, they both worked hard for the cause during the war.

Farlow was the recipient of many honours, being LL.D. of Harvard (1896), of Glasgow (1901), and of Wisconsin (1904), and Ph.D. of Upsala (1907). He was a member of the National Academy of Sciences and of the American Philosophical Society, and was president of the American Association for the Advancement of Science in 1906. He was Foreign Fellow of the Linnean Society of London (1892) and of the Academy of Sciences of Paris, as well as of many other scientific bodies in his own country and abroad. For the first twenty years of its existence he was co-editor of the *Annals of Botany*. Personally he was well known in this country by reason of repeated visits, and was heartily appreciated both for his social and his scientific qualities.

F. O. B.