

he was a fervent admirer, was the elucidation of Euclid's famous theory of proportion, which he can be said largely to have reconstructed. He was working at this almost to the very day of his death, struggling with amazing courage and success against the almost insuperable handicap of total blindness which overtook him suddenly about fifteen months ago. His work in this difficult and neglected branch of the foundations of mathematics must remain of fundamental importance for all future investigators.

As a teacher Hill had few equals: what impressed all who came in contact with him, apart from his clarity of exposition and extraordinary mastery of detail, was the moral atmosphere that radiated from him and left its mark on all those who approached him, even those who could not follow him into the realms of abstract thought. He gave, indeed, a splendid example of how a real man's work should be done, sparing no pains that the result, however slight, should be perfect; neglecting nothing, facing boldly all difficulties, a rare ideal of intellectual uprightness and moral courage.

This same ideal Hill carried into his everyday life and into the very arduous tasks which he undertook in connexion with the government of the University, a burden which he bore without a murmur, though his friends, well knowing that this meant, too often, the postponement or abandonment of research work of priceless value, sometimes deplored this as a tragedy.

Hill was a member of the Senate of the University from the date of its reconstitution in 1900 until 1926, when failing health compelled his retirement. For ten years he was chairman of the Academic Council, and for two years (1909-1911) vice-chancellor of the University. To his initiative were due many important developments, the full effects of which are only now beginning to be felt; in particular, the establishment of proper machinery for appointments to chairs and readerships and many improvements in the status and qualifications of teachers of the University.

Behind an outward appearance of almost diffident reserve Hill kept a heart full of sympathy and helpfulness and a fund of quiet and serene humour. Both his students and his colleagues looked to him when in trouble or difficulty, nor were they ever disappointed. It was characteristic of him that when, on his retirement, his friends asked him in what way he would wish them to commemorate his long connexion with the College, he remembered the financial struggle of his early years and asked that they should found a loan fund by means of which the difficulties of students in straitened circumstances might be temporarily relieved, while their spirit of independence was to be preserved by an undertaking of eventual repayment, so soon as they felt able to do so. There could, indeed, have been no more fitting memorial.

Prof. Hill married in 1892, Minnie Grace, daughter of Marriott Ogle Tarbotton, of Nottingham. Mrs. Hill died in 1920. He leaves two sons, both of whom earned distinction in the field in the flying service during the War, and one daughter.

PROF. J. M. COULTER.

By the death of Prof. John Merle Coulter on Dec. 23, after a few weeks' illness, American botany loses one of its most eminent exponents.

Prof. Coulter was born at Ningpo, China, on Nov. 20, 1851. After graduating at Hanover College, Indiana, he was appointed in 1872 botanist to the U.S. Geological Survey in the Rocky Mts., but returned to his old college as professor of natural sciences in 1874. He was then successively professor of biology, Wabash College (1879-91), president and professor of botany, Indiana University (1891-93), and president, Lake Forest University (1893-96). In 1896 he was appointed head of the new department of botany of the University of Chicago, to the development and work of which he devoted nearly thirty years, retiring in 1925. Since his retirement he has been adviser of the Boyce Thompson Institute of Plant Research, Yonkers, N.Y.

Coulter's earlier botanical work was floristic. The "Synopsis of the Flora of Colorado" (1874), a government publication, with Prof. Thomas C. Porter, incorporated the results of his own and earlier investigations in this part of the Rockies. A more extensive piece of work was his "Manual of the Botany of the Rocky Mountain Region from New Mexico to the British Boundary" (1885), a companion volume for the territory included to Gray's classic "Manual of the Botany of the Northern United States," for the sixth edition of which, in 1890 (with some extension of the area westwards), Coulter and Gray's successor, Sereno Watson, were jointly responsible. In association with the late Dr. J. N. Rose, Coulter published a revision of the North American Umbelliferae (1888) and a Synopsis of the Mexican and Central American Umbelliferae (1900).

Prof. Coulter is best known in the botanical world, however, for his connexion with the *Botanical Gazette* and his work in the department of botany of the University of Chicago. In November 1875, Coulter started the *Botanical Bulletin*, a modest little monthly of four pages, issued at a subscription price of one dollar a year, to afford a medium of publication for botanists of the western States comparable to those already existing in the eastern. It comprised short notes, mainly of local floristic interest, many of which were provided by the editor himself. With the second volume the name was altered to the *Botanical Gazette* to avoid confusion with the *Bulletin of the Torrey Botanical Club*, and the size was increased to eight pages. The venture prospered, other eminent botanists became associated with Coulter in the editorship, and when in 1896 the senior editor went to organise the new department at the University of Chicago and the *Gazette* became the property of the University, it was already recognised as a leading botanical journal. After more than fifty years of active editorship, Coulter in 1926 handed over the work to his former colleague, Prof. Henry Cowles, himself retaining the title emeritus editor.

With the development of the Chicago School of

Botany the *Gazette* also became a medium for the publication of its work. An important aspect of this work also found expression in the volumes on the morphology of the seed-plants, which are familiar to all students of botany. The original small volume on the seed-plants (1901) by Coulter and his assistant, C. J. Chamberlain, was expanded into the two important volumes dealing respectively with Angiosperms (1903) and Gymnosperms (1910) and represents a concise review of our knowledge of the detailed morphology, especially of the reproductive structures and the embryology in the two groups. The special value of these volumes depends on the fact that the subject matter had its origin or had been critically reviewed in the laboratory of the Chicago botany school.

In addition to his work as teacher and editor, Coulter played his part in the various associations and societies for the advancement of science in America. He had served as president of the Botanical Society of America, and of the American Association for the Advancement of Science. He was also a corresponding member of the British Association. In 1921 he was elected a foreign member of the Linnean Society of London. Botanists who attended the International Congress at Ithaca in 1926 will remember that Prof. and Mrs. Coulter took a prominent part in the reception of the delegates at the opening of the Congress in the Willard Straight Hall of Cornell University.

A. B. R.

DR. G. W. LEE.

GABRIEL WARTON LEE, who died in Edinburgh on Dec. 1, 1928, was the son of the late Dr. A. B. Lee of Geneva, the well-known author of "The Microtometist's Vade-Mecum," and of many valuable papers on cytological subjects. He was born in 1880, and received his education at Geneva, where, after a distinguished university career, he took the degree of D.Sc. In 1905 he joined the staff of Sir John Murray in Edinburgh, and carried out a number of important investigations on the deep-sea deposits brought back by the *Challenger* Expedition. The researches on glauconite which he undertook in collaboration with his cousin and colleague, Dr. L. W. Collet (now professor at Geneva), were published in the *Proceedings of the Royal Society of Edinburgh* in 1905-6.

In 1907, Dr. Lee was invited, on account of his special palæontological knowledge, to join the staff of the Geological Survey of Scotland; he was placed in charge of the Palæontological Department, and became responsible for the determination of the material annually collected from natural sections and from borings. Dr. Lee acquired an unrivalled knowledge of the Carboniferous fauna of Scotland and was a recognised authority on the Bryozoa, publishing in 1911 an important monograph on the British Carboniferous Trepostomata. He made valuable contributions to the Survey memoirs dealing with the Carboniferous rocks of the Edinburgh (1910) and Glasgow (1911 and 1925) districts, of East Lothian (1910), and of North

Ayrshire (in the press). He assisted in the mapping of the complex geology of the Island of Mull, and had completed a detailed examination of the Mesozoic rocks of Scotland. His memoir on "The Mesozoic Rocks of Applecross, Raasay, and N.E. Skye" appeared in 1920, and his later work on these rocks was embodied chiefly in the following memoirs: "Pre-Tertiary Geology of Mull, Loch Aline, and Oban" (1925), "Geology of the Country around Golspie" (1925), and "Geology of Ardnachan" (to be published shortly).

In addition to his official work, Dr. Lee undertook the description of suites of fossils brought back from the Arctic by various expeditions. Among these may be mentioned the collections made by the late Dr. W. S. Bruce in Prince Charles Foreland in 1906-7 (*Proceedings, Royal Physical Society, Edinburgh*, 1908), and at Cape Cherney on the west coast of southern Novaya Zemlya in 1898 (*Transactions, Royal Society, Edinburgh*, 1909). Part of the material obtained by Prof. O. Holtedahl during the Norwegian expedition to Novaya Zemlya in 1921 was also submitted to him for determination and description (*Report of Scientific Results*, No. 22, Kristiania, 1904).

DR. E. VAN RIJCKEVORSEL.

DR. ELIE VAN RIJCKEVORSEL, who died on Oct. 18 last at the age of eighty-three years, was born at Rotterdam. After leaving the gymnasium there he went to the Polytechnic at Zurich and the University of Bonn, taking his doctor's degree in physics and mathematics at Utrecht in 1872. Soon afterwards he proposed to Prof. Buys Ballot a magnetic survey of the East Indian Archipelago at his own expense, only the instruments being provided by the Dutch Government. After a training at the observatories at Kew and Munich, he left for Java in December 1873, and largely extended Elliott's first survey of 1846-49, taking observations at more than a hundred stations. In spite of interruption by malarial fever, a similar survey was carried out in eastern Brasil between 1882 and 1885, with the assistance of E. Engelenburg.

After being nominated honorary assistant of the Dutch Meteorological Institute, Van Rijckevorsel made the first and only magnetic survey of Holland. In the meantime, many intercomparisons of standard instruments had been made, and magnetic observations in the Alps with Van Bemmelen followed; indeed, Van Rijckevorsel was one of the pioneers of international magnetic research, and was recognised as such by the honorary degree given him by the University of Glasgow in 1893, and by his nomination as one of the eight members of the first magnetic commission created by the International Meteorological Committee in 1896 at Paris.

Since 1896, Van Rijckevorsel has developed another side of his scientific interests. At the British Association at Toronto a paper was presented, "On the Temperature of Europe," followed by a series of papers in German, partly published by the Institute at De Bilt, which trace