

gether he wrote more than a hundred research and descriptive papers. He was elected to the fellowship of the Royal Society in 1892 and received the Hughes Medal of the Society in 1910; he was also awarded the Albert, the Faraday and the Duddell Medals; and in 1929 he was knighted.

As a teacher Fleming was superb. He had the gift of arranging his subject-matter attractively and of stating his facts and ideas emphatically. He talked straight on, without digressions, doublings, or repetitions, in a direct current of well-chosen words and rounded sentences. His delivery was very rapid; but his resonant voice and crisp articulation ensured that no one missed a word. Nor did anyone ever complain that his meaning was doubtful; everything was sharply defined. After middle age he became very deaf, but retained all his magic as a lecturer. This deafness, by the way, was utilized by his students when in jubilant mood; on such occasions a stranger passing the door of the lecture room might hear a sudden clamour and its sudden cessation, and if he lingered he would hear the uproar switched on and off at intervals. Inside the lecture room he would have seen that when the professor turned to the blackboard there was pandemonium, and when he faced his class there was silence. The timing had to be lively as Fleming was quick in his movements. This celerity was characteristic; even when he was in the middle seventies, one could see his linear figure threading swiftly a populous corridor in the College, intent on a goal, looking neither right nor left, overtaking everybody. Indeed in intellectual as well as material things, Fleming's main principle of action was, full-speed ahead.

W. H. ECCLES.

Dr. David Randall-MacIver, F.B.A.

DR. D. RANDALL-MACIVER, the accomplished archaeologist and anthropologist, was born in 1873, and educated at Radley and the Queen's College, Oxford, where in 1896 he obtained a first class in *Literæ Humaniores*. It had been his youthful ambition to devote himself to the pre-Columbian cultures of America, but as this seemed impracticable, he came easily under the influence of Sayce and Grenfell at Queen's, and learned the technique of Egyptian excavation with Flinders-Petrie. He was the first holder of the Laycock Studentship for Egyptology at Worcester College (1900-6) and in 1907 directed the Eckley B. Coxe, jun., Expedition of the University of Philadelphia to Egypt and the Sudan; publishing also with Arthur Thomson a detailed anthropometric study of ancient Egyptian skeletons.

When the British Association visited South Africa in 1904, Randall-MacIver was entrusted with a reconnaissance of the 'Zimbabwe' type of ruins in Rhodesia, and his rapid but careful and conclusive excavations on a few typical sites demonstrated their late date, and caused some indignation locally when they were published in his "Mediaeval Rhodesia". After some work in the Pennsylvania Museum, he became librarian of the American Geographical Society (1911-14), married an accomplished Virginian lady, and seemed to be settling down in New England.

But the War of 1914-18 recalled him to Europe as an efficient intelligence officer in France and in Macedonia—he spoke French, German and Italian with equal facility—and after 1919 he settled in Florence and devoted himself to the prehistoric antiquities of Italy, to which his attention had been

attracted by another Queen's man, the late T. E. Peet, whom MacIver had sponsored in his early years, and with whom, in a manner, he changed careers, when Peet left Italian prehistory for Egyptology. Peet's "Stone and Bronze Ages in Italy and Sicily" (1909) was a pioneer survey of the earlier periods; Randall-MacIver took up the story in 1924 with a stately volume, "Villanovans and Early Etruscans", tracing through tangled and sometimes passionate Italian publications the main theme of the continuity of native Italian culture, and its gradual transformation by the Early Etruscan, which intruded on its region from the south. In 1927 came a companion study of "The Iron Age in Italy", dealing with the cultures of central and southern Italy, neither Villanovan nor Etruscan, which betray early and increasing signs of intercourse with regions east of the Adriatic.

In this way a new approach was prepared to the residual problem of the Greek colonization, and of the foreign imports which portend the first reconnaissance of 'Magna Graecia'. To this, Randall-MacIver had intended to devote a third memoir; but his many social and personal interests and the death of his wife in 1931 intervened; all that he left on this subject was a charming book of travel, "Greek Cities in Italy and Sicily" (1931). In 1936, he married another American lady, and on the outbreak of war in 1939 withdrew from Italy to New York, where he was able to do valuable services in the British war organization. There he died on April 30, 1945.

JOHN L. MYRES.

Prof. Thomas J. Nolan

THE news of the death of Prof. Thomas J. Nolan on March 12, at the age of fifty-six, came as a profound shock to his colleagues and students.

Graduating in University College, Dublin, in 1909 with the highest honours in chemistry, Nolan commenced research work under the late Prof. Hugh Ryan and was awarded a travelling studentship in chemistry in 1911, his thesis dealing with a research on "The Higher Ketones and Secondary Alcohols derived from the Amides of Palmitic and Stearic Acids". In the autumn of 1911, Nolan proceeded to Geneva and commenced research under Amé Pictet on problems dealing with the "Constitution of Isostrychnine" and the "Application of Methylal in Ring Syntheses". Owing to the illness of Pictet this work was not completed. In 1912 he began research under Prof. Samuel Smiles in University College, London, on the "Isomerism of the Sulphides of β -Naphthol", the results being embodied in a series of five papers in the *Proceedings and Transactions of the Chemical Society*, London. In 1913, Nolan worked under Zincke in the University of Marburg and published in *Liebigs Annalen* a communication entitled "Saltpetersäurechinitrol aus 3. 5. 6 Trichloro-o-Kresol und Umwandlungsprodukte". His most distinguished work at this period was carried out in the Kaiser Wilhelm Institut in Berlin, where Willstätter was engaged on his classic investigations on the colouring matters of flowers and fruit. Under Willstätter's direction Nolan succeeded in isolating the pigments of the rose and peony in a pure condition and establishing their constitution. The outbreak of war in 1914 terminated these researches, and he returned to Dublin and was awarded the D.Sc. degree of the National University.

During 1915-25, Nolan was engaged as research chemist to Messrs. Nobel's Explosives Co., Ltd., during which period he carried out many valuable researches. In 1925 he returned to Dublin to become assistant State chemist and afterwards State chemist, a post which he held until his appointment in 1932 as professor of chemistry in University College, Dublin.

Much of the research which Nolan carried out during the past thirteen years was directed towards the investigation of the chemical constituents of lichens found in Ireland. In this very difficult field he was the first to isolate a chlorinated depsidone, gangaleoidin, and had gone far towards establishing the constitution of this and other organic substances containing chlorine, which are found in lichens. More recently, he had isolated two nitrogenous constituents in the lichen *Lecanora epanora*.

Among his many activities Nolan served on the Council of the Chemical Society, London, during 1926-29. He was chairman of the Board of the

Industrial Alcohol Factories established by the Irish Government, member of the Irish Industrial Research Council and during the emergency created by the War his advice was frequently sought and highly valued both by the State and industrialists.

Nolan was an inspiring teacher, a loyal and understanding colleague, a staunch friend and a chemist of the highest calibre. His death at the height of his powers is a grievous loss to chemistry and to his University.
JOSEPH ALGAR.

WE regret to announce the following deaths :

Prof. A. Fersman, the distinguished Russian geologist and mineralogist, aged sixty-one.

Sir Martin Forster, F.R.S., during 1922-23 director of the Indian Institute of Science, Bangalore, on May 24, aged seventy-two.

Mr. G. C. Robson, formerly of the British Museum (Natural History), where he was in charge of the collection of Mollusca, on May 17.

NEWS and VIEWS

Geology at the University of Sheffield :

Prof. W. G. Fearnside, F.R.S.

Not a few of the younger generation of geologists will learn with surprise of the retirement of Prof. W. G. Fearnside from the Sorby chair of geology at the University of Sheffield. They will have ample ground for wonder whether anyone so patently young can have reached the age at which university professors retire, though the surprise may be lessened by the discovery that he has held the chair since its foundation thirty-two years ago, and consolation will follow the thought that geology still has the promise of his enthusiasm and energy for many years to come. Under McKenney Hughes, as a colleague of Alfred Harker, J. E. Marr, Henry Woods and Gertrude Elles, he commenced his geological career in some of the brightest days of the Cambridge school. It is not surprising that some of his earliest claims to distinction were notable contributions in the Cambridge tradition of Lower Palaeozoic geology, while his characteristic versatility was foreshadowed by his concern at the same time with the teaching of petrology and the collection of quaternary bones. During this period he was a fellow of Sidney Sussex College.

Shortly after his acceptance of the Sorby chair, Prof. Fearnside remarked on one occasion that the time had come to apply the lessons learned in the minute study of the lower Palaeozoic to the problems of the Coal Measures. His publication shortly thereafter of a structural map of the Yorkshire Coalfield laid the foundation of much work by himself and others, which has given greatly increased precision to knowledge of Carboniferous and post-Carboniferous earth-movements and their consequences. Among industrialists and engineers, Fearnside has performed a notable service in demonstrating the value of geology in those spheres, whether concerned with fuels, metals, refractories, bricks or roads. For him there is no 'pure' or 'applied' science. He is equally at home in the councils of the Institutions of Mining Engineers, or of Mining and Metallurgy, or in the presi-

dential chair of the Geological Society or of Section C (Geology) in the British Association. In the Royal Society his work for geology has been outstanding, and all will wish that in this and other spheres it may long continue.

Major F. W. Shotton, R.E.

PROF. FEARNSIDES is being succeeded by Major F. W. Shotton, R.E. After a brilliant undergraduate career at Cambridge, Mr. Shotton was appointed to a lectureship at the University of Birmingham, where he worked under Prof. W. S. Boulton and Prof. L. J. Wills. During this time he carried out important work on the rocks of the Coventry district; he also studied the conditions of deposition of the Trias Sandstones with the aid of students from the University of Birmingham, whom he organized into teams for field-work. In 1936 he returned to Cambridge as lecturer under Prof. O. T. Jones and carried out detailed research in the Cross Fell district of the Pennine Chain.

In 1940 Shotton was asked to take an appointment as geologist with the Armies in France; but the need for the appointment disappeared with the return of the B.E.F. to Great Britain. Shotton was eventually commissioned in the Royal Engineers in the autumn of 1940 and proceeded to the Middle East as geologist on H.Q. staff. Here he carried out excellent work mainly concerned with water-supply problems. In 1943 he was appointed as geologist to the Chief Engineer, Twenty-first Army Group, in succession to Prof. W. B. R. King. During the time before D-day, Shotton was busy studying many problems connected with the Normandy landings, particularly in connexion with the behaviour of various types of beach under different loads, and reaction to shelling, condition of river banks and bottoms, water supply and suitability of sites for the construction of landing strips for fighter aircraft. Shortly after D-day, he was in Normandy putting the results of this study into practice, and has been with the armies throughout their advance into Germany. During this time he