Bayliss, launched his *Principles of General Physiology*, which aimed at application of physical and physico-chemical principles, rather outside the knowledge or interests of most medically qualified physiologists at that time, to the functions of cells, tissues and animals. Moreover, he ranged widely over the animal kingdom beyond the frog, cat and dog, which were the conventional objects of physiological investigation. This stirred almost explosive interest among physiologists, many of whom, from home and abroad, were welcome guests at Sir William and Lady Bayliss's hospitable house in Hampstead. Into this setting, Leonard grew up to hear much discussion and to gain practical experience in his father's private laboratory and workshop, in addition to formal education at University College School and later in Trinity College, from which he took his degree in physiology at Cambridge and then his Ph.D.

After a year as physiologist at the Marine Biological Laboratory at Plymouth, he became lecturer in physiology in the University of Edinburgh. By 1939, however, physical chemistry, physiology and experimental zoology had advanced mightily in the twenty-five years since the original publication of the *Principles*, and Bayliss resigned from his salaried post to devote himself to study so as to produce a new synthesis of the cognate parts of these subjects; this he did at his father's professional home, University College, London. The War intervened, and during these years he must have been immensely active in the Army Operational Research Group, about which he spoke with real enthusiasm (see following note).

With the shortage of university staff after the War, he became reader in physiology at University College and managed, practically single-handed, in 1946 to restart the Hons. B.Sc. course which had perforce lapsed during the war years. Having set that on its feet, he resigned in 1950 in order to have leisure to pursue his ambition to create a new synthesis in the form of the *Principles of General Physiology*. This he achieved in two volumes published in 1959 and 1960, although he had continued teaching and research in an honorary capacity much as before.

He and his wife, Dr. M. Grace Eggleton, who survives him, were a devoted couple, both working in the same department and nearly always together, either in London or at their cottage in Sussex. He was a modest, frugal and exceedingly kind person, always ready to interrupt what he was doing to discuss someone else's problem; unambitious and reluctant to publish papers, though he published quite a few about widely diverse branches of physiology from water-diuresis to action-potentials. A glimpse of his generous character appears in a quotation from his preface to the *Principles of General Physiology*, 1, in the acknowledgments: "But the most valuable of all my assistance has come, whether they knew it or not, from my colleagues and students in the course of discussion and instruction".

F. R. WINTON

ONE morning in the autumn of 1940 I was gazing ruefully at the smoking ruins at University College, when Leonard Bayliss came and stood beside me. I had been looking for scientific people for Blackett's party at Anti-Aircraft Command and said, "Leonard, do you want a job?" The job seemed particularly pertinent then, and he said "Yes" at once. For nearly five years he worked with the Army Operational Research Group under its various titles, and was a leading member of its establishment throughout the War, contributing greatly to its success.

The efforts of this Group were of tremendous value to the A.A. Command. As General Pile wrote in his despatch (*London Gazette*, December 16, 1947), "While full credit must be given to the troops of all kinds, and indeed their conduct . . . was beyond all praise, the foundation of success was laid by the scientist, both civilian and in uniform". In his book *Ack-Ack* is a photograph of Pile

talking to Bayliss, with other members of the team around.

The original party was split early into two sections: (a) those engaged in radar problems; (b) those dealing more generally with fire control and analysis. Bayliss was put in charge of the latter. A colleague of those days writes that he was "always delightfully helpful and stimulating"; and he was himself the author of many reports on A.A. gunnery, A.A. predictors, accuracy of fire against aircraft at various heights, and later against flying bombs. These were enlivened occasionally by touches of the gentle irony that his friends will recall.

It may seem remarkable that one who had no previous experience of war and its problems should have been able, immediately, to take so active and successful a part. But this does not seem so remarkable to those who knew Bayliss's breadth of knowledge and ingenuity, and his engaging readiness to help.

A. V. HILL

Dr. Arvid Hjalmar Uggla

By the recent death of Dr. Arvid Uggla in his eighty-second year, the learned world has lost a great authority on everything connected with Linnæus. When Dr. J. M. Hulth of the University Library, Uppsala, published his excellent *Bibliographia Linnæana* in 1907, he stated his intention of undertaking a work on Linnæus's manuscripts, but his promotion to the head librarianship of the University Library, Uppsala, and his early death prevented him from carrying out this project. After his service in the Swedish Army during the First World War, Arvid Uggla returned to the University Library, Uppsala, becoming one of its principal librarians. From about the year 1928, when Uggla published his first paper on Linnæus, he began a series of visits to England with the purpose of a close study of the Linnæan manuscripts. His profound study of these numerous manuscripts solved some problems long overdue. Some of these solutions were published in the year-book (*Årsskrift*) of the Swedish Linnean Society (*Svenska Linné-Sällskapet*) but many remain unpublished. Unlike previous research workers, he also thoroughly investigated the many manuscripts of the younger Linnæus, and was able to show that, although lacking the elder Linnæus's genius, that somewhat denigrated young man was quite a considerable naturalist. Although he prepared a valuable hand-list in manuscript and deposited a copy at the Linnean Society of London, his projected catalogue of the Linnæan manuscripts remains unpublished. It is hoped that Svenska Linné-Sällskapet will publish this catalogue as its tribute to his memory.

Only those who have made some study of the Linnæan manuscripts can form any idea of the difficulties connected with them. Apart from the fact that many of the manuscripts still consist of loose leaves (at times in doubtful order) there are the ever-present difficulties connected with reading the sometimes almost illegible handwritings. Uggla had the quick mind and keen eye necessary to do such work to perfection. In addition, he had wonderful powers of memory, which enabled him to associate immediately with other manuscripts the one he was investigating.

Apart from the numerous papers published in the *Årsskrift* and elsewhere, Uggla published several separate works. Among them, with E. Malmeström (now Bishop of Uppsala), he collaborated in a revised edition of Linnæus's several autobiographies in *Vita Caroli Linnæi* (1957).

Svenska Linné-Sällskapet devoted its *Årsskrift* for 1962, published in 1963, as a *festschrift* to Dr. Uggla on his eightieth birthday, February 13, 1963. In it will be found the reproduction of an excellent bas-relief portrait of Dr. Uggla, and a bibliography of his writings. From 1927 he was secretary of the Swedish Linnean Society and editor of its *Årsskrift*, as well as superintendent of the Linné Museum, Uppsala.

Uggle was one of the kindest and friendliest of men, and much liked by all who knew him. Although a bachelor he had great sympathy with young people, and even when very busy himself would willingly give time and effort to help others. Nevertheless, at times he could be very reserved, as if, like Browning's grammarian, he feared 'to draw a circle premature'. There is but little doubt that with him his research work came first. About two years ago he suffered a stroke, but made a good recovery. He died from heart failure on July 30, 1964.

Among the many honours conferred on Arvid Uggle were two Swedish knighthoods and the foreign membership of the Linnean Society of London. S. SAVAGE

Dr. M. Doporto

DR. MARIANO DOPORTO, director of the Irish Meteorological Service, died suddenly in Dublin on September 8.

Dr. Doporto was born in Cáceres, Spain, in 1902, and studied physics at the Universities of Madrid and Barcelona. He joined the Spanish Meteorological Office in 1921, and was in charge of the weather forecast centre at Barcelona at the outbreak of civil war in Spain. Some time afterwards he left Spain, and in 1939 joined the newly formed Irish Meteorological Service, serving first

at the flying-boat base in Foynes. Two years later he moved to Dublin, and in 1948 succeeded Mr. A. H. Nagle, becoming the second director of the Service. At about the same time he became an Irish citizen.

Dr. Doporto was the author of a large number of scientific papers. His most important contributions concerned the extended solutions of the general equations of motion and the cellular structure of the atmosphere. In 1943 he deduced theoretically that an upper isopycnic layer must occur at a height of about 25 km, a prediction which was later verified. Shortly before his death, he was working on a possible association between noctilucent clouds and the isopycnic layer at 80 km.

Dr. Doporto's skill as an organizer and administrator was much in evidence in the development of the Irish Meteorological Service during the past sixteen years. He was responsible for the completion of the network of observing stations, and for the installation of laboratories dealing with atmospheric radioactivity and the chemical analysis of air and rain. He served on the Board of the Dublin Institute of Advanced Studies and took a leading part in international meteorological affairs through the World Meteorological Organization and the International Union of Geodesy and Geophysics.

Dr. Doporto leaves a widow and three sons.

P. M. AUSTIN BOURKE

NEWS and VIEWS

Automatic Data Processing in the Manchester College of Science and Technology : Prof. G. Black

DR. GORDON BLACK has been appointed to the (part-time) chair in automatic data processing in the Faculty of Technology in the Manchester College of Science and Technology. Dr. Black, who is forty-one years of age, was educated at the Warrington County Grammar School and the University of Durham. After gaining a B.Sc. degree at Durham in 1945, he worked for a short time at the Royal Aircraft Establishment, Farnborough, in the Research and Development Department, before moving in 1946 to the British Scientific Instrument Research Association. He remained with the Association until 1956 and during this ten-year period he qualified for a Ph.D (London) degree and a diploma of the Imperial College of Science and Technology, following extra-mural research extending over two years in the field of technical optics. He also spent three further years on research in association with the Computing Laboratory at the University of Manchester, working on automatic numerical optimization. He was elected a Fellow of the Institute of Physics in 1951. In 1956 he accepted an appointment as principal scientific officer with the United Kingdom Atomic Energy Authority at Risley, Warrington, working mainly on computer applications. He was appointed senior principal scientific officer in the Computing Section at Risley in 1958 and became deputy chief scientific officer (technical manager) of the Computing Section in 1959. His staff totals 60 (including 30 graduates) and he has been concerned with the operations of three computers, the *Mercury*, the IBM 704/7090, and the *PACE* analogue computer.

Professional Civil Servants

State Service for August 1964, the journal of the Institution of Professional Civil Servants, reports the debate on motions presented at the annual delegate conference, briefly summarizes the conflict between the Institution and the Ministry of Aviation over the conditions of service of Air Traffic Control Officers (into which a committee is now enquiring) and notes the protests which are reaching the Institution from professional and technical staff in the Ministry of Public Building and Works. These pro-

tests are aimed at the excessively autocratic nature of the new organization, which appears to embody the worst features of the old Ministry of Works organization. Professional officers in the new Ministry complain that administrative control now limits the freedom they formerly possessed in exercise of technical judgment in discharging their duties, while the overhead expenses of the Department are significantly greater than those of the Works Department in the old Service Ministries. The Institution also directs attention to the Treasury's resistance to the proposal that professionally qualified officers should be known simply by the title of their profession—architect, engineer, etc., instead of by the terms, 'basic' and 'main', which are now meaningless inside as well as outside the Civil Service; for these terms the Institution suggests the substitution of the terms 'senior' and 'principal', respectively.

Commonwealth Scholarship Plan

THE fourth annual report of the Commonwealth Scholarship and Fellowship Plan closely follows the pattern of previous reports and again includes a special section on Commonwealth visiting fellowships and other senior awards under the Plan (Pp. 76. London: H.M.S.O., 1964. 5s.). Five senior Fellows from Britain took up awards in New Zealand, Australia, India (2) and Canada. Four from Australia visited Britain (2), Canada and India; two from New Zealand took up prestige fellowships in Britain, one from India in Canada, and one visitor's award from Southern Rhodesia enabled an adviser to visit Australia. Awards held in the first terms of the academic year increased from 820 in 1962-63 to 924 in 1963-64. Britain has now reached her target figure and both Canada and Australia have nearly achieved theirs. Jamaica offered her first scholarship, tenable at the University of the West Indies, and, with one exception, all the countries which promised to institute awards have now done so. Of the 390 scholarships taken up during the year, 219 were awarded by Britain, 84 by Canada, 26 by Australia, 22 by India and 13 by the West Indies. Although the Plan appears to be working effectively and making a real contribution to the educational needs of the Commonwealth, there are some difficulties. Perhaps