

matter assumes the hierarchical forms that evolution shows us. Without it and we see in life something inchoate but, in a way, fetid and malignant: something suggested to us by the cancerous tumour or the luxuriantly living and rotting tropical jungle. Here, and in the backwaters of organic evolution—the “living fossils” that are poised between extinction and stability, or the primitive and unprogressive human societies—we see the life of the future: the inextinguishable vital impulse that waits on the ordering control that will lead to its deployment in new organic forms.

PROBLEMS OF CROP PRODUCTION.

IN his address as president of Section M (Agriculture), Sir John Russell reviews the present position of agricultural research as compared with that occupied when the British Association visited Toronto in 1884. Up to that time the man of science had been occupied with the problem of how to feed the plant. Agricultural science was regarded as simply a branch of chemistry; but, during the last forty years, many new problems involving the biological sciences had presented themselves for solution. These problems are related to the growth of the plant as affected by inherent and environmental variations. Sir John Russell points out that, whereas the great discovery during the early period was that the plant could be fed by “artificial” substances, the most pregnant discovery of the second period was that the plant is plastic; by methods which are under scientific control it can be modified in desired directions, and thus be induced to give results that mere feeding cannot accomplish. Following the

pioneer labours of Bateson, astonishing practical results have been reached by such workers as Biffen in England, Nielsen Ehle in Sweden, and the Howards in India. But the science of genetics is only on the threshold of what it may yet accomplish.

Sir John Russell then goes on to review, in detail, recent advances that have been made in the sciences with which he is particularly concerned at Rothamsted. He emphasises the pressing need for subjecting the great mass of material that has now accumulated to statistical analysis. In regard to the numerous empirical data from “field” experiments, Sir John Russell is of opinion that no advance can be expected until some fresh opening is discovered by scientific workers. With regard to the more rigid data accumulated by laboratory workers, the view is expressed that the greatest field for discovery lies in the direction of linking up plant nutrition studies with those of the soil solution, the latter being explored in the light of the physico-chemical interactions between soil and soil water. On the more general issues Sir John Russell is insistent on the need for fuller co-operation between all classes of scientific workers—for team work which shall include workers of all nations. But when all is said and done, the great expenditure of time and money now being incurred in agricultural research can only be justified by abandoning the view that the economic end alone is worthy of the effort. The address closes with an eloquent appeal for a wider vision, for an effort to upraise country life by revealing to the countryman “something of the wonder and mystery of the open spaces in which he dwells.”

Obituary.

PROF. J. WERTHEIMER.

THE death, on August 9, of Prof. Julius Wertheimer, at sixty-four years of age, deprives both science and technical education of a most active and stimulating worker. Since 1890, when he was appointed principal of the Merchant Venturers' Technical College, Bristol, he took a leading part in promoting scientific and technological instruction in the city, with the result that, when the University of Bristol was established in 1909, the faculty of engineering was instituted at the Collège, with Prof. Wertheimer as dean of the faculty and also professor of applied chemistry.

Prof. Wertheimer was educated at University College, Liverpool, and Owens College, Manchester, and was headmaster of the Leeds School of Science and Technology from 1887 to 1890. He was a fellow of the Institute of Chemistry, the Chemical Societies of London and Berlin, and the Physical Society of London. He was for ten years hon. secretary of the Association of Technical Institutions, and was the author of textbooks of practical chemistry and of scientific and educational articles in various journals, including NATURE. His long experience and wide knowledge of all matters relating to technological education at home and abroad made him a very valuable member of many committees. He served on the Council and Senate of the University of Bristol, the Teachers Registration Council, the Education Committees of the Gloucestershire County Council, the Bristol City

Council, the British Science Guild, and other bodies. In recognition of his services to science and education the degree of doctor of science, *honoris causa*, was conferred upon Prof. Wertheimer by the University of Bristol in 1911. He also received the honour of Officier d'Académie de France in 1906.

MISS KATHERINE A. BURKE.

BY the death of Miss Katherine A. Burke, University College, London, has lost an excellent teacher who was untiring in her devotion to the academic, social, and athletic life of the college. Graduating at Birkbeck College, Miss Burke began her career at University College, in 1898, as a research assistant of the late Sir William Ramsay, and she took a share in the research emanating from the chemical laboratory at about this time. Later, she was appointed to the chemical staff, and was the first woman teacher directly concerned with the teaching of the undergraduates of the college. Miss Burke's original work included research on thorianite, the oxides of chlorine, the Joule-Thomson effect, the chemical dynamics of the alkyl iodides, and the absorption spectra of alcoholic solutions of nitrates. The paper on chemical dynamics, with Prof. F. G. Donnan (*Journ. Chem. Soc.*, 1904, 555), showed that the order of reactivity of the alkyl iodides varied with the type of chemical reaction investigated, and hence it was not possible to ascribe their reactivity

to a uniform cause, such, for example, as a dissociation of the iodides into ions. A research, published jointly with Prof. E. C. C. Baly and Miss Effie G. Marsden (Journ. Chem. Soc., 1909, 1096), on the absorption spectra of the aqueous alcoholic solutions of nitric acid and lithium, ammonium, and silver nitrates in relation to the ionic theory, afforded strong support for the theory of hydrated ions. It was found that the limiting conductivity and the persistence of the absorption band of these solutions showed a minimum at three per cent. of water. During the War, in addition to her work in connexion with the Voluntary Aid Detachment, Miss Burke found time to assist in the

preparation of synthetic drugs, which were so badly needed at that time.

Towards the end of her life, Miss Burke's activities were absorbed in the social and athletic life of the college, particularly in connexion with the acquisition and organisation of the sports ground for women students at Perivale.

WE regret to announce the death of Mr. Charles Leudesdorf, fellow and vice-regent of Pembroke College, Oxford, registrar of the University of Oxford, and author of a number of papers on mathematical subjects, on August 10, at seventy-one years of age.

Current Topics and Events.

THERE has been brought before the Council of the British Association at the Toronto meeting a special report by the Committee on Zoological Bibliography and Publication, dealing with the question of undue restriction in the distribution of H.M. Government publications. The results of the inquiries of this Committee are of general interest to scientific workers, and may be briefly stated. On applying to the heads of certain Government Institutions, the Committee was informed that no restriction had recently been placed on the distribution of publications of the Royal Botanic Gardens, Kew, the British Museum (Natural History), or H.M. Geological Survey. On the other hand, it found that public libraries had suffered from a considerable cutting down of free or reasonably priced Parliamentary and Stationery Office publications (in respect of which some concession has since been made); that certain British scientific societies of standing are no longer able to obtain Government scientific publications in exchange for their own publications (though foreign scientific societies are not similarly handicapped); that free reprints to authors of papers published by the Government have almost disappeared; that there has been a cessation of the routine free distribution of agricultural leaflets; and that review copies of Government publications have been curtailed. These findings are in general agreement with the statements made in a leading article in NATURE, December 29, 1923 (vol. cxii. p. 925). The Committee considers that no loss would ensue were review copies to be furnished gratis to editors on application, and suggests that the Council of the British Association "might well represent to the Government that the publication of the results of research among people likely to appreciate them is no less important than the making of the researches themselves, and that to refuse the relatively small additional expenditure is materially to reduce the benefit of the original much greater expenditure." Bearing in mind the effective methods employed by other governments in the spread of their scientific achievements, no one is likely to quarrel with this exceedingly modest recommendation.

SCIENTIFIC men are indebted to Major A. G. Church for raising an important question in Parliament, namely, the assessment for income tax of professional men, more especially men of science, who are

remunerated by a fixed salary and are therefore assessed under Schedule E. Professional men whose income is made up of fees, and who are, therefore, assessed under Schedule D, are allowed in the assessment of their incomes to deduct from their earnings expenses ordinarily incurred in the course of their work, including the cost of the renewal of technical works of reference, subscriptions to professional societies, the preparation and publication of memoirs—in fact, all expenditure required to maintain their technical efficiency. Such expenses are not as a rule allowed to those assessed under Schedule E. The Financial Secretary to the Treasury denied, however, the existence of such a distinction and offered to have any particular case investigated, in which further relief was believed to be due, provided the necessary particulars were furnished. The question was, as a matter of fact, brought before the Treasury two or three years ago, when it was intimated that such expenses might, for the purpose of assessment, be deducted from the salary received, when they were incurred in consequence of an express requirement of the employer. If, for example, on the appointment of a science lecturer it was stipulated he should carry out research, or that he should join the technical societies relevant to the subject he taught, or take other steps calculated to maintain his scientific position, the necessary expenses might be deducted in ascertaining his assessable income. It is for the colleges concerned to see that this requirement is satisfied.

THE Admiralty has announced the appointment of Capt. H. P. Douglas to the post of Hydrographer of the Navy in succession to Vice-Admiral F. C. Learmonth, as from October 1 next. Capt. Douglas has been employed in the surveying branch of the Navy since 1897, and held the appointment of superintendent of charts in the hydrographic department from 1910 to 1914. During the War, he was employed on special surveying staff duties at the Dardanelles and with the Dover Patrol, in addition to acting as the first director of the Navy Meteorological Service (1917). For his preparatory work in connexion with the raid on Zeebrugge he was awarded the C.M.G. He was assistant hydrographer of the Navy from 1919 to 1921, and has since been in command of H.M. Surveying Ship *Mutine*, and her successor,