

cannot be sustained and the biologists must seek elsewhere for their solution.

It must be confessed that biologists sometimes find this attitude a little too rigid for their liking, and feel that there is some real difference between the evidence in the two cases. They feel that the facts of plant and animal geography have an objectivity and stability greater than those of some beliefs concerning the physical condition of the earth. They notice in the latter that the moduli concerned are on occasions modified, and they feel also some misgivings about the completeness of the present picture of conditions deep within the earth. On the other hand, no doubt, some geophysicists feel that since biologists are rarely expert mathematicians and physicists enough to appreciate these mysteries, their opinions are of limited value.

All this emerged clearly enough from the discussion, but there were also plenty of indications that the cleavage of opinion is really not so fundamental as may appear. On one side, the biologists made it plain that they are not committed to the minutiae of Wegener's theory; on the other hand, the contribution of Prof. Umbgrove, for example, showed that while drift in the classic sense may be unacceptable, something in the nature of crystal buckling and contraction may result in comparable degrees of horizontal displacement. Similarly, the possibility that vertical rather than horizontal earth movement may be sufficient to bridge some conspicuous gaps, the discussion of the value of 'isthmian links' or stepping stones of island chains, and the suggestion that surer knowledge of the sequence of geological events might itself reduce the number of problems, were all feelers towards the integration which can with some confidence be looked for eventually of now opposing views.

There is space left to mention only a few of the many more particular points of interest raised. Perhaps the most original contribution was that of Dr. Joyce, who accepts the view that South Graham Land and its extension to King Edward VII Land is separated from the main mass of Antarctica by a trough. This smaller portion of Antarctica, together with the Scotia Arc of island groups east and south-east of Cape Horn, forms a loop, which when straightened out links up eastward with New Zealand, and forms a bond linking South America, Africa, Antarctica and Australia when these are placed in juxtaposition. The Scotia Arc so placed provides the missing fold region for the Antarctic.

Another nice point concerned the light relations in polar regions. In these highest latitudes, there are long continuous periods of daylight and of darkness, a condition presumably unaffected by secular temperature changes. Various fossil plants are known from the Antarctic continent, and the question is whether any of these could have existed under such light conditions as now prevail there. The implications of the answer have particular importance with regard to the Antarctic Tertiary flora.

Almost inevitably the likelihood of the population of isolated islands by casual methods of dispersal cropped up, and indeed in terms which suggested that the Kon-tiki epic was not the first of its kind; but there was evidently a feeling that to put too much weight on this is to burke the main issue.

An early speaker warned his audience against the uncritical use of reported cases of discontinuous distribution, and it was significant that the only instance of plant geography referred to afterwards was just

such a case, that of *Cornus*, which has recently been quoted in connexion with continental drift<sup>1</sup>. The family of the Cornaceae is one of the least satisfactory in Angiosperm classification and has suffered a series of dismemberments and revisions. Its chief genus, *Cornus*, contains several very distinct sections, some of which have been regarded as distinct genera, and the significance of any geographical statements based on its classification can only be regarded as most doubtful.

Discontinuity also received attention in the question as to whether the similarity between organisms in places far distant from one another might be due, not to community of origin but to parallel or convergent evolution, a possibility that must always be remembered.

Other questions were of a more severely practical sort, and these more than any others betokened what was perhaps the most noteworthy impression left by the discussion, namely, the need for more factual information about certain crucial issues. When, to quote but one such issue as an example, we really know of what the floors of the oceans are made, then we may speculate more happily as to how the material got there.

RONALD GOOD

<sup>1</sup> Longwell, C. R., *Amer. J. Sci.*, **242**, 218 (1944).

## OBITUARIES

Prof. H. S. Reed

PROF. HOWARD SPRAGUE REED, widely known as a botanist, plant physiologist, and since 1935 a member of the faculty of the University of California, died at the age of seventy-three on May 12, 1950, in Berkeley, California. For many years Dr. Reed was associated with the Citrus Experiment Station at Riverside, California, and many visitors to that research station will recall his genial hospitality and keen interest in other people and other problems than his own. For the last fifteen years of his life, Dr. Reed resided at Berkeley, California, where he was associated with the Division of Plant Nutrition of the University of California.

To readers of the literature of plant physiology, Prof. Reed first became well known for his writings on growth and its analysis in mathematical terms. Later, his interests turned to cytochemistry, especially in the attempt to trace by its aid the role of the micro-nutrients in the growth of plants. Dr. Reed's wide scholarly interests, however, were given expression in his historical works, notably "A Short History of Plant Sciences", published in 1942, and still more recently an appreciation of the work of Ingen Housz in relation to the early history of photosynthesis.

Those, however, who were privileged to know the man, recall a serene and gentle personality and a mind which ranged far beyond the confines of his special field of work. Always keenly interested in the classics, he had an avid interest also in ancient history and ancient cultures, especially in the Aztec language and culture. On his extensive travels, Prof. Reed was indefatigable in pursuing his interests in plant physiology, while also adding to his store of knowledge of both present and past customs and cultures. These wide interests and experiences made him a delightful host and a welcome guest. No account of Prof. Reed should, however, omit reference to his broad and deep interests in human affairs

and human welfare. In individuals, whether students, colleagues or visiting men of science, he found a ready interest; his church claimed his loyalty and service, and to the American Association for the Advancement of Science he gave his counsel as one of its national officers for some years.

Prof. Reed leaves his mark indelibly on the literature of botany and plant physiology: he will long be remembered with affection by a wide circle of colleagues, students and friends in many lands.

F. C. STEWARD  
J. DUFRENOY

#### Prof. W. J. Dilling

PROF. WALTER JAMES DILLING, who had held the chair of pharmacology at the University of Liverpool since 1930, died at Coniston on August 18 at the age of sixty-four.

Educated at Robert Gordon's College and the University of Aberdeen, he graduated M.B., Ch.B. with honours in 1907. He became second assistant to Prof. J. A. MacWilliam in the Department of Physiology and was afterwards appointed Carnegie research scholar in physiology. In 1909, as Carnegie research fellow in pharmacology, he studied in Germany and was for a time first assistant to Rudolf Kobert, professor of pharmacology and physiological chemistry at the University of Rostock. He returned to Aberdeen in 1910 to become lecturer in pharmacology, where he conducted a course in experimental pharmacology for medical students, which was the first of its kind in Great Britain. In 1914 he was appointed to the new Robert Pollok lectureship in materia medica and pharmacology in the University of Glasgow. His work there was interrupted by war service, and in 1915 he was commissioned in the R.A.M.C., with which he served until 1919. After a further period in Glasgow he went as lecturer in pharmacology to Liverpool in 1920. His merits as teacher and administrator soon gained recognition; he received the title of associate professor in 1926 and in 1930 was appointed to the newly created chair of pharmacology.

Prof. Dilling was deservedly popular with his students. His carefully prepared and constantly revised lectures were full of vitality and were embellished by humorous sallies which delighted his hearers. He was dean of the Faculty of Medicine during 1924-35 and again during 1939-45. His wise tolerance and able administration earned him the gratitude of colleagues and students alike. He was twice a member of the University Council. He was at various times an examiner to the Universities of Oxford, Cambridge, London, St. Andrews, Bristol, Leeds, Sheffield, Birmingham and Wales.

In 1938 he was nominated to the General Medical Council, and in 1948 became chairman of its Pharmacopœia Committee. He was a Privy Council representative on the Council of the Pharmaceutical Society and served as a member of the Pharmacology Committee for the British Pharmacopœia, 1948.

Prof. Dilling was the author of many papers on physiological and pharmacological subjects. Early researches led to the publication of an "Atlas of Crystals and Spectra of the Hamochromogens" in 1910. Other studies included investigations into the pharmacological actions of certain unfamiliar plants, of quinine on the parturient uterus and of lead compounds. He also wrote on medical historical subjects. But it was as a writer of text-books that

he excelled. Very early in his career he edited Bruce's "Textbook of *Materia Medica*", which became widely known to generations of students as "Bruce and Dilling". Frequent revisions were undertaken with characteristic energy and thoroughness, and were remarkable not only for their clear presentation of the most recent developments in pharmacology, but also for their understanding of the clinical problems attending the application of drugs, new and old. Under the revised title of "The Pharmacology and Therapeutics of the *Materia Medica*", the book had reached its eighteenth edition in 1944 and revision for the nineteenth edition was almost complete at the time of his death. From 1940 onwards he contributed the important chapter on recent developments in drug therapy to the annual "Medical Progress" volume of the "British Encyclopædia of Medical Practice". He had a profound knowledge of his subject as applied to both veterinary and dental practice. He was joint author, with S. Hallam, of another widely used text-book, "Dental *Materia Medica*, Pharmacology and Therapeutics", now in its third edition.

His interests were wide and embraced many subjects besides pharmacology. He had a life-long love of music and was chairman of the Liverpool Philharmonic Society for several years. At his home in Coniston he was a countryman, keenly interested in rural ways and Lakeland life, of which he acquired an extensive knowledge. To a keen and critical intellect he joined the utmost friendliness, and those who approached him for advice or help found him ready to give freely of his time and energies to the solution of their problems. During the Second World War he commanded the medical company of the University Senior Training Corps and spent long hours with his student stretcher bearers receiving casualties at the railway terminus, sometimes far into the night. These and other war-time activities took heavy toll of his energies and eventually of his health, and he never fully recovered from the prolonged strain which a high sense of duty imposed upon him. His loss is mourned by a wide circle of friends. He leaves a widow and two daughters. R. W. BROOKFIELD

#### Mr. C. W. Parsons

CHARLES WYNFORD PARSONS was born in 1901 at Swansea, the son of Tom Posslethwaite Parsons. He was educated at Bristol Grammar School, proceeded to St. John's College, Cambridge, in 1920, and, after graduation in 1924, was appointed assistant in the Department of Zoology, University of Glasgow. There he remained, attaining the position of senior lecturer, until his untimely death at Birmingham on August 26.

Parsons's first published work was on the behaviour of *Amœba*; but his interests soon changed, as was but natural in a department then under the direction of Graham Kerr and noted for its contributions to vertebrate morphology and embryology. After a valuable paper on the conus arteriosus in fishes, he received for examination the penguin embryos collected during the *Discovery* investigations, and his beautifully illustrated report on these, published in "Discovery Reports" in 1932, represents his major contribution to zoological knowledge. It was followed two years later by an account of similar material collected during the course of the British Antarctic (*Terra Nova*) Expedition of 1910. This included