

education as one of its principal concerns. The council is an agency for stimulation and coordination and not an operating body. What it can accomplish must be done principally through existing professional and educational institutions. What the national engineering societies can accomplish will be largely through their local chapters and sections. What the colleges can contribute to further education after graduation will be largely on a local basis. With the Engineers' Council for Professional Development now organized to give impetus and guidance on a national scale, next steps in progress seem to lie in the establishment of

effective local joint councils or committees on professional education and development.

In the goals for this period of education, a mature understanding of social and economic processes should have a prominent place. It should be our concern not only to make the engineer competent to design and build with an understanding of social consequences, and to do his part to develop shock-absorbing mechanisms to ease the impact of technological change, but also to raise his voice in defense of sound economic and social policies which have stood the fire of experience.

OBITUARY

THE SCIENTIFIC WORK OF VERNON KELLOGG

WHEN one reviews the scientific work of Kellogg he finds the record of a keen, active, versatile mind, reflecting immediately the influence of his surroundings, and disclosing an eagerness to state his findings and to share his impressions. The thought leaps forth and must find expression. There is little of long and labored investigations builded into finished works, but more often a flashing exposition of some definite topic. There is not lacking, however, sustained interest, but it manifests itself over long periods of time and not in a continuous and exclusive application. Thus his first paper on Mallophaga appeared in 1890 and up until 1915, thirty-nine others on this subject followed. Sometimes several years would pass without any published work on the biting lice and then a group of as many as five articles would be written in one year.

Similarly, insect taxonomy continued to interest him and in a decade he wrote twelve papers. A like number of works on insect morphology in the same period were published.

The strong influence of his surroundings is early manifest. Accordingly, in his first year of investigation, papers upon Mallophaga, birds, preservative fluids for museum specimens and the action of a Pasteur filter were produced. In each case contact with another investigator was responsible for his interest in the subject reported upon. In the years immediately following, papers upon economic entomology predominate because of the practical work upon the chinch bug begun by Dr. F. H. Snow.

Back of his practical studies there was, in the mind of Kellogg, a growing concern for the biological principles manifest in comparative insect morphology, taxonomy and phylogeny. Association with Comstock and Jordan did much to strengthen these interests, and papers dealing with applied entomology became few. In the second decade of his work the extension of knowledge through the writing of text-books claimed

much of his interest, and rarely did a year pass without the appearance of some book from his pen. Apparently this was somewhat of a diversion for an easy writer because it did not at all interrupt the steady flow of manuscripts upon a wide range of investigations. Thus in 1904 in addition to a book on "Insect Anatomy" there were papers upon such diverse subjects as parthenogenesis, amitosis, bionomics, regeneration, experimental variation, sex-characters, Mallophaga and South Sea travel. The active, discursive nature of his mind is indicated by the fact that articles characterized as Reviews, Notes and Biographies, covering a wide range of subjects, are most numerous. The breadth of his interest is best shown by the number of papers upon each subject during his first twenty-five years of study when his mind was not distracted by administrative matters. These may be summarized as follows: Mallophaga, 39; reviews and biographies, 28; books, 18; applied entomology, 18; general biological topics, 15; insect morphology, 12; insect taxonomy, 12; evolution, 10; insect development, 8; ornithology, 6; silkworms, 6; insect notes, 5; travel, 3; heredity, 3; eugenics, 3; education, 3; parasitology, 3; Lepidoptera, 3; spiders, 2; insect physiology, 2; bionomics, 2; technique, 2; regeneration, 2; insect behavior, 2; arthropods, 2; animal psychology, 1; insect cytology, 1; distribution, 1; echinoderms, 1; parthenogenesis, 1; metagenesis, 1; Coleoptera, 1. These classes are not always mutually exclusive, but taken in this way reveal the general trend of Kellogg's thinking. The first eight topics are presented in 152 papers, out of a total of 209, and show the concentration of his interest upon them. Probably his largest contribution to new knowledge came from his studies upon the Mallophaga. These were undertaken, in the beginning, because Kellogg considered the insects valuable as an index of the relations between bird species, but later the studies were continued on account of his preoccupation with the phylogeny of the Mallophaga themselves. The numerous papers that continued to

appear were almost entirely filled with detailed descriptions of new species from different avian and mammalian hosts. Only occasionally are theoretical conclusions introduced.

It is obvious, however, that because of his concern for the significance of biology in human affairs, his chief service consisted in the dissemination of knowledge and in its interpretation and application. Some phases of such contributions arose directly from his investigations, but others, and his most noteworthy, resulted from the carrying over into educational, administrative and philanthropic affairs the view-point and methods which characterized his investigations. In these matters above all he was a distinguished and worthy exponent of American biology.

Kellogg's career as an investigator, extending over a quarter of a century, practically ceased when he

became involved in war-time activities. From these he did not return to his post at Leland Stanford but established himself in Washington. His writings continued, but they took the form of direct approaches to the general public as books, newspaper articles and magazine articles. Creditable as were his own studies, he will undoubtedly be longest remembered as one of our few good interpreters of science. In his later years his writings were almost entirely of this nature.

His approach to a subject was always honest and straightforward. He had the courage of his convictions and did not hesitate to take a position because it was unpopular. He was an inspiring and helpful teacher with his own students and greatly extended his influence by his writings, which were clear and forceful.

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SCIENTIFIC EVENTS

PROGRAM OF THE CAMBRIDGE MEETING OF THE BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

LORD RAYLEIGH was installed on January 7 as president of the British Association for the Advancement of Science for 1938, in succession to Sir Edward Poulton at a conference held at Birkbeck College. The main outlines of the program for this year's Cambridge meeting of the association were discussed by the organizing committees of the various sections at this meeting.

The London *Times* gives the following outline of the proceedings of the conference:

Professor W. W. Watts, who presided at the outset, explained that Sir Edward Poulton could not be present because he had had a fall a fortnight ago and his doctor pronounced him not yet fit to make the journey. Professor Watts proposed a vote of thanks to the retiring president for his services and welcomed Sir Edward Poulton's successor. The association, he said, had not often had father and son in the presidential chair; he thought there was only one previous instance. There had been a case of a grandson following his grandfather, and certainly one where a great-great-grandfather was followed by his great-great-grandson, after a decent interval of 70 years. They also welcomed Lord Rayleigh on account of his marvelous scientific research work and his successful association with other scientific societies and their organization.

Lord Rayleigh, from the chair, said he had received a telegram from Sir James Jeans (who is presiding over the Indian Science Congress at Calcutta) conveying best wishes to himself from the British Association delegates at the congress. The following reply had been sent: "On behalf of British Association, warmest greetings and wishes for the success of congress. Look forward with pleasure to working with colleagues on their return."

Lord Rayleigh said he had jotted down a few headings, lying quite outside his own real knowledge, as suggestions for possible discussion in the various sections at the Cambridge meeting. In Section A he thought they might usefully have something about the modern magnetic alloys. There was a good deal of modern knowledge of them from the x-ray direction, and he thought Professor Bragg would be willing to lead in a discussion. He had been interested at various times in the brilliant colors of insects, such as, for instance, the *Amorpha* butterflies and the brilliantly iridescent beetles. He had never seen any discussion of Nature's object in creating those brilliant color effects. Were they associated with the sexual instinct of insects, and were we to attribute esthetic perception to insects? A subject touching on both chemistry and biology was the processes by which rare elements were segregated in the earth. It seemed to him that some discussion of those processes, which seemed to be very marvelous examples of selective crystallization, and comparison of them with the artificial processes of the laboratory might afford the basis of an interesting discussion.

F. P. White, as local secretary of the association at Cambridge, reported that Emmanuel College had offered to accommodate sectional officers to the number of fifty, but men only. It would mean separation from wives; and such women officers as there were would have to have other hospitality found for them.

There will be no separate meetings of Section I (physiology) at the Cambridge meeting on account of the coincidence of dates with the International Physiological Congress in Switzerland.

SYMPOSIUM ON MATHEMATICS AT THE UNIVERSITY OF NOTRE DAME

A SYMPOSIUM on the Algebra of Geometry and Related Subjects was held at the University of Notre Dame, Indiana, on February 11 and 12.

Dr. Edward V. Huntington, of Harvard University,