Association Affairs

Section on Education (Q)

At the recent AAAS meeting in Chicago Section Q held three meetings and a joint meeting with Section I, at which the vice-presidential addresses of the two sections were given. In his vice-presidential address for Section Q, W. A. Brownell discussed three criteria of especial importance in educational research. He pointed out that these apply especially to educational research and might, or might not, be equally pertinent to psychological research. The criteria which he mentioned were: the level of process attained as distinguished from mere measures of product, the degree of retention of learning, and transfer-ability. He noted that too few studies of learning or of remedial practices have been followed up by investigations at later times to see if the changes produced have persisted. Evidence was given, also, to show that, when measured by the criteria of transfer-ability, some methods were found to be superior which were not superior when measured in terms of speed and accuracy of performance only.

A very stimulating symposium on "The Place of Science and Philosophy in Education" included papers by an educational scientist, an educational philosopher, an academic scientist, and an academic philosopher. Educational methods were at first derived from philosophy rather than science; later, in many areas, scientific methods were used to determine what should be taught and how it should be presented. Now there seems to be, again, a definite tendency toward philosophical methods. While it was recognized that science does not in itself determine values, it was strongly emphasized that any wise determination of values is based upon scientific fact. Educationists were called upon to define their terms much more exactly than they have sometimes done and to evaluate their findings in terms of the specifically defined ends desired. Scientists cannot be held responsible for the uses to which the results of their studies are put, but scientists as individuals have their place in influencing social philosophies. Sciences vary in their degree of maturity, and the social sciences in particular cannot yet claim to be as "scientific" as some of the older disciplines. Various misunderstandings and misconceptions in regard to scientific method were set forth as answers.

Another symposium was on "The Relationships of Group and Individual Research in a World of Large-Scale Organization." The impossibility of adequately solving some of our problems in terms of the work of individuals or in terms of work done at single locations was brought out. Several examples of successful group research were described. At the same time, it was emphasized that no research workers have yet had experience in group research and that group studies, then, must be undertaken rather gradually. Further, it was made clear that individual creativeness must not be lost.

A final meeting was held in which major emphasis was placed on the status of achievement in school subjects, primarily reading and spelling—present school children as compared with those of earlier times. Difficulties of making good comparisons because of changes in curriculum contained in the desired objectives, in the nature of populations, in school studies, etc. were mentioned. Some evidence was presented, however, to indicate that, especially in the field of reading, children of the present day are distinctly ahead of those of a couple of decades ago. (D. A. WORCESTER, *Secretary.*)

Symposium on Photosynthesis (Section C)

Eighteen papers were presented in a day-and-a-half symposium on photosynthesis, the first to be held for the past 5 years. There was considerable discussion of the various papers and a general conference at the close of the sessions. The attendance, ranging from 100 to 400, comprised mostly chemists, botanists, and biologists.

In opening the symposium, the chairman, Farrington Daniels, of the University of Wisconsin, pointed out the long-range importance of the study of photosynthesis and stated that it is strange, in view of the enormous amount of research invested in agriculture and botany, that so little attention has been paid to the fundamental reaction underlying all plant growth —namely, the production of carbohydrates and other material from carbon dioxide and water in the presence of chlorophyll and sunlight.

The problem was attacked along several different lines, the first half-day being devoted to studies of light absorption by chlorophyll and other plant pigments, the emission of fluorescent light, and measurements of photochemical oxidation-reduction reactions carried out in the laboratory, designed to gain a better understanding of the photosynthetic reaction in the plant.

The important advances being made with radioactive carbon as an isotopic tracer were described during the second half-day session. These experiments show that carbon dioxide is taken up not only in the light but also in the dark. Intensive efforts with carbon 14 as a radioactive tracer are being directed toward determining the composition of the first photosynthetic product. It appears to be a substance containing both carboxyl and hydroxyl groups which is soluble in hot alcohol and insoluble in benzene. Possible mechanisms were discussed, including reaction cycles by means of which the radioactive carbon is distributed among various organic acids and products.

The energy efficiency with which the light is used in photosynthesis was discussed on the third half-day. Warburg's manometric technique leading to a quantum efficiency of 0.25 molecule of CO_2 consumed per quantum of light absorbed was criticized, and yields of about 0.1 molecule per quantum were described. Different measurements based on manometric technique, on calorimetry, on the dropping mercury electrode for oxygen analysis, and on the platinum electrode for oxygen analysis were carried out independently in different laboratories, and all gave quantum efficiencies in the neighborhood of 0.1 molecule per quantum.

The impression was gained that rapid progress in our understanding of the mechanism of photosynthesis will now be made along the lines discussed at the symposium. (FARRINGTON DANIELS, *Vice-President.*)

NEWS and Notes

Presentation of the 1947 AAAS-George Westinghouse Science Writing Awards was made at a dinner on December 27 during the meetings of the AAAS in Chicago. The two $1,000 awards were made to George Keaney, staff writer on the *New York World-Telegram,* in the newspaper division, and to Steven M. Spencer, associate editor of the *Saturday Evening Post,* in the magazine division. Honorable mention in the magazine writing contest was given jointly to Lorus J. and Margery J. Milne for their article in the June 1947 issue of *Natural History.* (See *Science,* November 28, 1947, p. 513.) Citations were also presented to the publications in which the winning entries appeared. Pictured on this week's cover are those who participated in the ceremonies: *left to right,* Lee B. Wood, executive editor of the *New York World-Telegram,* also representing Mr. Keaney, who was unable to attend; Mr. Spencer; Harlow Shapley, toastmaster; Mrs. and Mr. Milne, who also received the citation in behalf of *Natural History;* and Robert Fuoss, managing editor of the *Saturday Evening Post.*

Guest speaker at the dinner was George D. Stoddard, president of the University of Illinois. His subject was "Science Aids Civilization."

About People

Robert E. Marshak, associate professor of physics, University of Rochester, and chairman of the Federation of American Scientists, has been appointed a member of the School of Mathematics, Institute for Advanced Study, Princeton, New Jersey, for the spring semester. Dr. Marshak will be in residence at the Institute from February 15 to April 15.

J. Russell Bright, associate professor of chemistry, Wayne University, has been made acting chairman, Department of Chemistry, following the resignation of **Neil E. Gordon** from the chairmanship. Dr. Gordon will continue as professor in the department and as director of the Kresge-Hooker Scientific Library and the University's chemistry lecture series.

William R. Grove, professor of psychology and director, Division of Psychological Services, University of Pittsburgh, has been appointed psychologist and director, Child Service Study, Phoenix Public Schools. **Carroll A. Whitmer,** formerly with the Pittsburgh Public Schools, will succeed Dr. Grove at the University of Pittsburgh.

Alfred Washington Drinkard, Jr., director, Virginia Agricultural Experiment Station for 30 years, and assistant director for the past year, will retire February 1.

Jack Matthews, formerly of Purdue University, has been appointed director, Speech and Hearing Clinic, Departments of Psychology and Speech, University of Pittsburgh.

H. B. Mann, of Atlanta, Georgia, formerly Southern manager of the American Potash Institute, has been appointed vice-president of the Institute. Dr. Mann assumed his new duties January 1 at the Institute's headquarters, 1155 16th Street, N. W., Washington, D. C.

William G. Pollard, acting executive director, Oak Ridge Institute of Nuclear Studies, since February, 1947, and formerly professor of physics, University of Tennessee, has been made executive director of the Institute.

Marston Taylor Bogert, professor emeritus of chemistry, Columbia University, and former president, American Chemical Society, has been appointed senior scientific adviser, Evans Research and Development Corporation.

John C. Crowell, who recently received the Ph.D. degree in geology from the University of California, Los Angeles, has been appointed instructor in geology at that University.