fessor Yorke and Mr. Southwell had charge of helminthology.

Four days were spent at the meeting of the British Medical Association which was held in Cambridge on June 29 to July 2. This was a well conducted and well attended meeting and the members were enthusiastic about their work and very much in earnest. The parasitological section was in charge of Professor G. H. F. Nuttall. Papers were read and thoroughly discussed and many interesting demonstrations were provided. Dr. Nuttall exhibited his extensive collection of specimens and illustrations of ticks and insects and a large series of photographs of men who have helped to build up the science of parasitology. He also had arranged for inspection the plans for the new institute of parasitology that is now being erected at Cambridge. Dr. Leiper demonstrated new and rare parasitic worms; Dr. Christopherson showed specimens illustrating bilharziasis; Colonel Stewart demonstrated stages in the migration of ascaris through the tissues of the body; Colonel James exhibited his travelling malaria laboratory; Dr. Gaskell showed pathological specimens of malaria, and Sir Leonard Rogers demonstrated with drawings some recent remarkable cures of leprosy. Working on medical zoology at Cambridge are Professor Nuttall, Professor A. E. Shipley, Professor J. F. Gaskell, Professor Graham-Smith, and Dr. Keilin. Many of the men I had met in London, Liverpool and on the continent attended this meeting and were present at the various luncheons, receptions and dinners tendered to the members and foreign guests.

Four days were also spent at the meeting of the British Association for the Advancement of Science at Cardiff. The zoological section was well attended, but very few young men were in the audience, the supply either having been wiped out during the war or directed into other lines of work. The usual sectional meetings and social events made up the daily programs. Opportunity was afforded to become acquainted with many British scientists whose names are well known to all zoologists.

My last week before sailing back to America was spent at the Marine Biological Laboratory at Plymouth, England. Here is situated a well equipped laboratory devoted almost entirely to problems in marine biology. Work on microorganisms is being carried on by the director, Dr. E. J. Allen. Among the members of the staff is Dr. Lebour, who has published investigations on helminthology.

One can not take such a trip as that briefly outlined above without being impressed by the importance of medical zoology, both as a subject for pure scientific research and as a necessary foundation for work in medicine and public health. Countries like England, France, Belgium and Italy that are situated or have colonies in tropical and subtropical regions find it necessary to investigate the relations of parasitic animals to man because of the prevalence of these organisms in the warmer countries. The war, however, in spite of the stimulus it has given certain phases of medical zoology, has so depleted the supply of young men and so reduced the funds available for scientific work that many years will be required for these countries to regain their former productivity. The result seems inevitable that the United States must assume the leadership in this as well as in other branches of science.

R. W. HEGNER

THE JOHNS HOPKINS UNIVERSITY

THE PROBLEM OF THE INTRODUCTORY COURSE IN BOTANY

Two years ago a committee of the Division of Biology and Agriculture, National Research Council, sent to a number of botanists in the United States and Canada requests for outlines of what they would plan as the best type of introductory course in botany. There was at that time a particular reason for the enquiry because of the problems introduced by the curriculum of the Student Army Training Corps.

The response was generous and the committee soon had in its possession some forty replies. These presented such divergence of opinion as to material and method in relation

to the various conditions under which botany is taught that it seemed desirable to publish a few representative outlines and some of those showing the more radical departures from the better known types of courses. A number of outlines of high school courses in botany were also included in the series of twenty which was published during 1919–20 in five numbers of *School Science and Mathematics*.[1]

An examination of the outlines soon made clear, as was to be expected, that there is great divergence of opinion on what should be the content of an introductory course and the order of presentation of its material. Yet this situation is far from indicating chaos in the methods of teaching. It means that for the most part conditions under which courses are framed are so various in schools and colleges that there can be no standardization of the introductory course. Also the personality of the instructor as shown in the technique of his teaching is a variable factor that can never be brought within bounds. There are some teachers exhibiting a spirit for experimentation and an originality of treatment that makes their outlines of refreshing interest.

Very evident is the expressed desire to make a large part of the course a study of the life activities of plants. Morphology is generally presented that knowledge of structure may make possible a study of function. The work of the plant becomes a subject of importance and the plant as a mechanism a matter of particular interest. Few of the outlines gave special emphasis to the study of types with the end in view of developing a detailed evolutionary history. The few representatives of the lower plants are obviously selected because they are organisms of importance for what they do or because of peculiarities favorable for an understanding of cell structure or reproductive processes.

There seems to be no disposition to drop out of the introductory course drill on the life histories of higher plants to establish the significance of sporophyte and gametophyte. Except in the shortest of the outlines, alternation of generations beginning with the bryophytes has a prominent place in the course. There is significance in this desire to hold students to a critical understanding of the homologies between spermatophytes, pteridophytes and bryophytes for the problems are of the sort that call for close thinking. Also, the conclusions are perhaps the most important deductions of plant morphology.

While there is an evident desire on the part of instructors to include physiological studies the practical difficulties are admittedly great. In the large introductory courses of some universities, where classes number 200 or more, physiological work must be taught largely by demonstrations unless there is an expensive equipment and a staff of numerous and capable assistants. Outlines number 2, 5 and 11 of the published series present courses organized primarily from the physiological standpoint and are of particular interest in this connection. Most instructors open the introductory course by the way of morphology, which has the obvious advantage of presenting material upon which the student may quickly be put to work, and introduce physiology with morphology as a background.

The problems of field work are an evident source of irritation. The fact seems to be that relatively few students show much interest in names or in the natural history of plants, but they frequently are attracted to a study of structure, to the physics and chemistry of plant life, and to the discussion of fundamental biological principles. Of course the teacher of a small group in a country environment can do much more with ecology than the city teacher limited to parks and gardens, and burdened with large classes. Much may be said for optional field trips attracting only the students with a keen desire to know plants and plant associations, students in whose company on a walk an instructor will find pleasure.

[1] A limited number of reprints of these outlines are available for distribution and will be sent on application to those interested in the problem of the introductory course in botany.

The study of the outlines submitted has impressed the writer with the value of direct and printed discussion of the problems of the introductory course. The problems are perhaps best understood by the interchange of experience through the publication of outlines with the reasons for their preference. Progress will come through experimentation in methods, material and texts, experimentation that can never end since each year brings new teachers to the problems.

BRADLEY MOORE DAVIS
UNIVERSITY OF MICHIGAN,

PRESENT STATUS OF THE AFFAIRS OF THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE[1]

IT seems highly desirable that members of the association should be kept currently informed regarding the progress made in the work of the permanent secretary's office, so that they may have a somewhat clear conception of what the association is doing and how its various aims are being carried out. To this end, it is planned to publish in SCIENCE, from time to time, summarized reports of progress and notes on matters of general interest. The present report refers mainly to the period from April 1 to October 1, 1920.

Publications.—A booklet has been prepared, including the constitution and by-laws and other information. About 23,000 of these booklets have been sent to members and prospective members. Additional copies may be obtained from the permanent secretary's office. All members have been requested to fill in the blanks on an information card and a large number of these cards have been returned. The information asked for is partly for use in the preparation of the new membership list (which will be published in the spring of 1921) and partly for the files of the office. It has been found necessary to make a charge for the new membership list since the funds of the association do not allow of its publication otherwise. This charge is $1 to members who remitted before December 1, 1920; $1.50 to members who remit later. The price of the volume is $1.50 to those who are not members.

Statement Cards.—A new series of white cards has been devised and adopted, for presenting the annual statements to members. In all cases the reverse of the billing card bears the information blanks mentioned above and each member is asked to return the card with his remittance of dues. These cards make up the information file of members' names.

Master File.—A complete card list of members has been installed and is kept continually correct. These cards show the status of each member as to dues and as to membership in affiliated academies or divisions of the association.

Application Forms.—Application for membership is now made on a buff card bearing the information blanks, these cards being inserted in the information file as soon as the new member has been elected. No sponsers are now required for application. Election can not occur until the proper remittance has been received. A special application card (blue is used by new members of affiliated societies, who are eligible to membership in the association without payment of the regular $5 entrance fee.

Invitations to Join the Association.—The campaign for increasing the membership has necessarily been somewhat restricted during 1920, on account of much other work, especially in connection with the reorganization of the office, but it will be vigorously pushed during 1921. About 9,000 invitations have been sent to newly-elected members of affiliated societies, who make application by the blue card mentioned above. A strong campaign for new members is being carried out by the Local Committee for the Chicago meeting.

Special Offer Regarding Arrearages for 1917–19.—This offer (see SCIENCE, May 7, 1920, page 470, paragraph 3) was presented to 2,175 members who were in arrears for one or more years of this three-year period. Acceptances, with payment of 1920 dues and consequent reinstatement as in good standing,

[1] From a report of the Permanent Secretary presented to the Executive Committee at its meeting in New York, October 17, 1920.