plains in considerable but not belabored detail the optical principles involved in the construction and operation of all the different types of microscopes. The explanations are designed for persons possessed of little knowledge of the optical and mathematical laws involved and are clearly understandable. The information presented has been derived from many sources, and the book thus constitutes a useful and handy reference manual. Instruments of American manufacture are almost exclusively discussed.

In the preface the claim is further made that "the methods and techniques of mounting described represent actual practice originated and developed in the author's own laboratory." The sections devoted to petrological and metallurgical procedures are good, but those dealing with biological materials are somewhat disappointing. The invaluable microtechnique journal, *Stain Technology,* is nowhere mentioned; it is unfortunate that the author could not have utilized it as a source for more modern and dependable methods.

While perusing this book and comparing it with others of a similar nature, the reviewer was struck by the fact that none of these texts has ever achieved a real and satisfactory balance in the treatment of the two phases of the subject. It is a somewhat curious fact that the writers of all such texts seem to be better grounded in the theory and operation of the microscope than in the principles and procedures of general microtechnique. Discussions of technical methods have always been inadequate, lopsided and oftentimes prejudiced.

The book is excellently printed on a thick white stock. The language is somewhat stilted and occasionally makes difficult reading. A few sentences whose meaning is incomprehensible occur (*e.g.,* the last sentence of the second paragraph on page 179). Although it is a minor point in a book apparently intended primarily for amateur microscopists desiring to know more about their instruments, citation of scientific names and terminology does not consistently follow accepted usage. For example, on page 217 are found "spiragyra" and "mycellium." And there is the statement that the staining solution of Heidenhain's iron hematoxylin is "a saturated solution of hematoxylin in water, which requires a week or two to reach saturation" (p. 228).

There is a clearly reproduced color frontispiece and 17 plates of photomicrographs, mostly, as might be expected, of diatoms. Appended is a bibliography of selected references, a glossary of microscopical terms and an index.

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STANFORD UNIVERSITY

SOCIETIES AND MEETINGS

THE ALABAMA ACADEMY OF SCIENCE

UNDER the auspices of President George D. Palmer, of the School of Chemistry, Metallurgy and Ceramics of the University of Alabama, the Alabama Academy of Science held its seventeenth annual meeting at Birmingham-Southern College, Birmingham, on March 29 and 30, with an attendance of over one hundred and twenty-five members and many visitors. The progressive Alabama Junior Academy of Science held its eighth annual meeting at the same time and place, Artie Belle Pirtle, Sidney Lanier High School, Montgomery, presiding, attended by one hundred and ninety-four delegates from twenty-seven high schools.

The usual executive and business meetings were held on Friday, and the scientific papers were presented in two sessions, on Friday afternoon and Saturday morning, and in four sections, the four vice-presidents serving as section chairmen. These were, respectively, S. R. Damon, Biology and Medical Science, State Department of Health, Montgomery; I. M. Hostetter, Chemistry, Physics and Mathematics, Howard College, Birmingham; A. J. Westland, Geology, Anthropology and Archeology, Spring Hill College, Mobile; and E. D. Emigh, Industry, Economics and Geography, Weather Bureau, Montgomery. A demonstration on the induction of ovulation by pituitary stimulation, showing the use of this technique in teaching and research, was given in Ramsay Hall by C. M. Pomerat, chairman, Department of Biology, University, as was one on plastics and synthetics by the president. Junior Academy exhibits were held in the same building. All business sessions were held in Munger Hall. A complimentary luncheon was tendered the scientists by the college in the cafeteria, and a tea was given for members of both academies and visitors in the Stockham Building. At the annual banquet, Walter B. Jones, director, Alabama Department of Conservation, Montgomery, served as the very able toastmaster. He later presented to the academy "The Ivory-Billed Woodpecker," a motion picture film, at the joint session in the evening over which he presided. This was held in Munger Auditorium. George R. Stuart, assistant to the president of the college, gave the address of welcome, and the response was made by S. J. Lloyd, dean of the School of Chemistry, Metallurgy and Ceramics, University, and acting state geologist. Dr. Palmer's presidential address was entitled "Scientific Research, the Hope of the South."

One morning and two afternoon field trips for the

academy were arranged by Russell L. Poor, chairman of the Geology Department, Birmingham-Southern College, for Saturday. Much of interest was revealed in the Red Mountain and Shades Mountain regions, in the blast furnaces and coke ovens, as well as in the beautiful residential areas of Mountain Brook and the Country Club.

Reports of special interest at the business session were made by John Xan, Howard College, Birmingham, treasurer; J. H. Coulliette, Birmingham-Southern College, councilor of the American Association for the Advancement of Science, and E. V. Jones, Birmingham-Southern College, editor of the journal. Three new committees functioned for the first time. These were: (1) Committee on Promoting Membership and Activities, Walter B. Jones, *chairman;* the Committee on Research, S. J. Lloyd, *chairman;* and (3) the Committee on Publication, under the chairmanship of E. B. Carmichael, of the Medical School, University, with the editor serving as *ex-officio* member.

The American Association for the Advancement of Science grant-in-aid of research was renewed for another year to J. Allen Tower, Birmingham-Southern College, for continuation of his work on the "Preparation of an Atlas and a Geography of Alabama." The committee was composed of the president-elect, C. M. Farmer, chairman, and the four vice-presidents. Two honorary members were elected, namely, Wright A. Gardner, Auburn, founder of the academy, and John Y. Graham, for forty-two years chairman of the department of zoology at the university, who retired last year, now emeritus professor of zoology. The members voted to establish an academy statistician, a permanent director of exhibits and demonstrations and to expand the sections to seven, including Physics and Mathematics in a separate section from Chemistry, and adding one on Geography, Conservation and Allied Subjects and one on the Teaching of Science. James L. Kassner was retained for one more year as acting permanent counselor of the Junior Academy, to be assisted by two academy members. Sustaining memberships were acted upon favorably, as was a suggestion by the president that steps be taken at the next annual meeting to organize a Southeastern Scientific Society. The academy received an invitation to meet with Howard College in 1942 in connection with the Centennial Celebration of that school. The 1941 meeting will be held at Spring Hill College, Mobile. Following the report of the various committees and the expression of appreciation to the officers and the host college upon the completion of business, the meeting adjourned.

New officers for 1940–1941 were elected as follows: *President,* C. M. Farmer, State Teachers College, Troy; *President-Elect,* Paul D. Bales, Howard College; *Vice-Presidents* and *Section Chairmen,* H. D. Jones, Biology and Medical Science, Alabama Polytechnic Institute, Auburn; Lindsey M. Hobbs, Chemistry, University; David L. DeJarnette, Geology, Anthropology and Archeology, Alabama Museum of Natural History, University; J. Allen Tower, Geography, Conservation and Allied Subjects, Birmingham-Southern College; W. A. Moore, Physics and Mathematics, Birmingham-Southern College, and Claustie E. McTyeire, The Teaching of Science, Hueytown High School, Bessemer. The chairman of Industry and Economics is to be appointed. Miss Winnie McGlamery, Geological Survey, University, was selected as secretary to succeed the present secretary, who has served for five years. J. H. Coulliette, Birmingham-Southern College, councilor of the American Association for the Advancement of Science, was reelected. The terms of office of the treasurer, John Xan, Howard College, and of the editor, E. V. Jones, Birmingham-Southern College, continue for one and two more years, respectively.

SEPTIMA C. SMITH,
Secretary

SPECIAL ARTICLES

TIME COURSE OF PHOTOSYNTHESIS AND FLUORESCENCE

WHEN a plant is exposed to light after a dark period, photosynthesis (as measured by uptake of CO_2) gradually comes to its full rate during a short interval called the induction period. Changes in intensity of the fluorescence of chlorophyll of the plant during this time have been interpreted[1] in terms of photochemical processes. Experiments are in progress in the Division of Radiation and Organisms of the Smithsonian Institution for the simultaneous measurement of the rate of uptake of CO_2 and intensity of fluorescence during the induction period.[2] These measurements confirm the usefulness of fluorescence observations as a tool in the study of photosynthesis.

The rapid spectrographic method of CO_2 measurement previously used[3] has been adapted to a constant-flow technique with a rapid time response. The Mazda illumination was limited by filters to < 6400 Å (in-

[1] J. Franck and R. W. Wood, *Jour. Chem. Phys.,* 4: 551, 1936; H. Kautsky and R. Hormuth, *Biochem. Zeits.,* 291: 285, 1937; E. C. Wassink and E. Katz, *Enzymol.,* 5: 145, 1939.

[2] E. D. McAlister and Jack Myers, *Smithson. Misc. Coll.,* 99: (6), 1, 1940.

[3] E. D. McAlister, *Smithson. Misc. Coll.,* 95: (24), 1, 1937; *Jour. Gen. Physiol.,* 22: 613, 1939.