ticians have been attempting to cope with this vexatious problem, with encouraging results.

Chapter II gives the present available sources of information on star counts, spectral types and the distribution of dark nebulae. A gratifying feature of Dr. Bok's discussion of the observational material is the manner in which he points out where new observations are most sorely needed. This feature, which is characteristic of the entire monograph, should prove highly stimulating to future research.

The third and final chapter deals with the general problems of galactic structure. Studies of the distribution of stars in directions perpendicular to the galactic plane are not complicated by the bogey of interstellar absorption, and considerable progress has been achieved in those directions, particularly by Oort. The author makes a critical survey of the arguments for and against the hypothesis of a local system of stars in which the sun is approximately central, and concludes that the hypothesis may at least be accepted as a working model. The monograph concludes on a highly optimistic note. Although only the most general features of galactic structure are now well established, Dr. Bok feels that the current rapid accumulation of observations will soon begin to reveal the finer details of stellar structure, and suggests that, as a working model, the galactic system may be regarded as a rather open spiral system, similar in form to Messier 33. On this basis, and accepting the hypothesis of a local system, the sun would be located in a spiral arm about two thirds of the distance from the center to one edge.

"The Distribution of the Stars in Space" is an extremely important contribution to the field of galactic structure, invaluable alike to both students and research workers in the field.

LEO GOLDBERG

THEORETICAL MECHANICS TREATED VECTORIALLY

Theoretical Mechanics, a Vectorial Treatment. By CARL JENNESS COE. New York: The Macmillan Company, 1938, 13 + 555 pages. Price, $5.00.

THIS text-book combines effectively an introduction to theoretical mechanics with training in the notation and methods of three-dimensional vector analysis (Gibbs's notation). Save for some words of caution in view of modern developments in relativity theory and quantum analysis, the selection of topics follows the classical tradition of such authors as Appell, Love, Routh, Webster and Whittaker. Rarely do mere physical facts intrude. Damped motion and sliding friction are touched upon, but the notions of elastic limit, atom, fluid, Young's modulus, oscillograph, viscosity or other commonplace terms of the physical laboratory find no place in this theoretical mathematical study. Included are chapters on the general principles of mechanics, on vector calculus and on potential theory (using three-dimensional vector calculus). But no attempt is made to introduce a generalized vector-space or tensor methods. Some prior training in calculus is assumed on the part of the student. An abundance of numerical exercises is provided which should give him facility and power in working with concepts which thereby can not but acquire clear significance.

ALBERT A. BENNETT

BROWN UNIVERSITY

SOCIETIES AND MEETINGS

THE ALABAMA ACADEMY OF SCIENCE

AT Montgomery, the capital, in the shadow of the spot where Jefferson Davis took the oath of office as president of the Confederacy, the Alabama Academy of Science held its sixteenth annual meeting, on April 14 and 15, with Huntingdon College as host. P. H. Yancey, of Spring Hill College, Mobile, presided. The historic background of this beautiful old southern "city of homes," together with the burst of bloom which is characteristic of the season, and the gracious hospitality of the college and of the Montgomery members, made this a memorable occasion. Eighty members, a number of visitors and over a hundred members of the Junior Academy, representing twenty-one schools, which met at the same time, registered. A certificate of award for the best paper and four certificates for the best exhibits in the various scientific fields were given the juniors by the senior academy. P. P. B. Brooks, head of the science department, Sidney Lanier High School, counselor at the place of meeting, assisted by James Holt Starling, head of the biology department, Troy High School, counselor to the president of the Junior Academy, had charge of arrangements for the Junior Academy, for which James H. Kassner, associate professor of chemistry, university, is acting permanent counselor.

Two symposia featured the program of the academy, which included forty-eight scientific papers, presented in four sections at Flowers and Bellingrath Halls and the Haughton Library on Friday afternoon and Saturday morning. Section I held a symposium on "The Biological Control of Malaria." This was presented by members of the health and safety department of the Tennessee Valley Authority, Wilson Dam, and the Alabama State Departments of Public Health and

of Conservation. Section II held a symposium on the "Chemistry of the T.V.A. Phosphate Fertilizers," given by the chemists of that division. Both created a great deal of interest and discussion.

The Academy Award from the American Association for the Advancement of Science was voted to J. Allen Tower, assistant professor of geography, Birmingham-Southern College, Birmingham, for "Preparation of an Atlas of Alabama and a Geography of Alabama." Birmingham-Southern College was selected as the next meeting place, the date to be set by the college in collaboration with the academy president.

Social features of the meeting included a tea for the visiting ladies at the home of Mr. and Mrs. E. D. Emigh. Other hostesses for this function were Mrs. Patrick H. Smyth, Mrs. Peter A. Brannon and Mrs. Haygood Paterson. The annual academy banquet was held at the Jefferson Davis Hotel on Friday night, with Haygood Paterson, commissioner of agriculture and industry, as toastmaster. The presidential address, "Science and the World Crisis," given by P. H. Yancey, featured the banquet. This was preceded by the address of welcome, made by Dr. Hubert Searcy, president of Huntingdon College, with response by Walter B. Jones, director of the State Department of Conservation. A motion picture, "The River," given through the courtesy of the National Park Service, closed the banquet, which was followed by an informal social in the ballroom of the hotel. On Saturday morning a geology field trip to old Fort Toulouse and Wetumpka was conducted by W. B. Jones and J. Y. Brame. Other attractions open to visitors were the State Health Laboratories, U. S. Weather Bureau, Montgomery Museum, and Seeing Montgomery Trip. Luncheon was served on both days at Pratt Hall, the college dining room.

Officers for 1939–1940 were elected as follows: *President,* George D. Palmer, associate professor of chemistry, University (elected last year); *President-elect,* C. M. Farmer, head of the biology department, State Teachers College, Troy; *Vice-Presidents and Chairmen of their respective sections:* Samuel Reed Damon, director of the Bureau of Laboratories, Alabama State Department of Health, Section I, Biology and Medical Sciences; Ingomar M. Hostetter, associate professor of mathematics, Howard College, Birmingham, Section II, Physics, Chemistry and Mathematics; A. J. Westland, seismologist, Spring Hill College, Mobile, Section III, Geology, Anthropology and Archeology; and E. D. Emigh, Weather Bureau, Montgomery, Section IV, Industry, Economics and Geography; *Editor of the Journal,* E. V. Jones, Birmingham-Southern College, re-elected for three years; councilor of the American Association for the Advancement of Science, J. H. Coulliette, professor of physics, Birmingham-Southern College, re-elected for one year. The treasurer, John Xan, head of the chemistry department, Howard College, has two more years to serve, and the secretary, Septima C. Smith, associate professor of zoology, University, has one more year.

An executive council meeting and a morning and afternoon business session, which disposed of routine business, were held on Friday. Three important new committees were approved for appointment by the president for expanding the personnel, influence and value of the academy to the members and to the state. These are: The Committee on the Promoting of Membership and the Activities of the Academy; the Committee on Research and the Publications Committee, an editorial board which is to assist the editor in furthering the quality of publications in the journal.

SEPTIMA C. SMITH

UNIVERSITY OF ALABAMA

SPECIAL ARTICLES

ISOLATION FROM BEEF PANCREAS OF A CRYSTALLINE PROTEIN POSSESSING RIBONUCLEASE ACTIVITY

A CRYSTALLINE protein which acts as a powerful digestive enzyme for yeast nucleic acid has been isolated from fresh beef pancreas. The digestion of the acid is accompanied by little, if any, release of inorganic phosphorus. The split products, unlike the undigested yeast nucleic acid, are not precipitable with glacial acetic acid or in 0.5 M hydrochloric acid. The products of digestion readily diffuse through collodion or Cellophane membranes that are impermeable for the undigested yeast nucleic acid. The nuclease activity of the crystalline protein is only very slowly diminished when boiled at pH 2.0. Boiling at pH 5.0 or higher brings about a gradual denaturation of the protein with a corresponding percentage loss of nuclease activity.

The nuclease activity of the new crystalline protein appears to correspond to the thermostable pancreatic nuclease activity described first by Jones[1] and later confirmed by Dubos,[2] Dubos and Thompson[3]

[1] W. Jones, *Am. Jour. Physiol.*, 52: 203, 1920.

[2] R. J. Dubos, SCIENCE, 85: 549, 1937. Dr. Dubos kindly tested the effect of the new crystalline material on the staining characteristic of two strains of Pneumococcus (heat killed). He found "that their staining characteristics are altered after a few hours incubation"; like the material which he described,[3] the new crystalline protein "decreases the affinity of the bacterial cells for basic dyes" (personal communication from Dr. Dubos).

[3] R. J. Dubos and R. H. S. Thompson, *Jour. Biol. Chem.*, 124: 501, 1938.