manipulation and *intra vitam* stains. Another is that in order to study protoplasmic structures they must usually be subjected to some stain, even if they are not killed, and the mere process of mounting for microscopic examination alters the oxygen supply and various other conditions. Guilliermond is fully conscious of all this, and his interpretations always allow for the possibility of some slight change from the healthy living condition even under the most careful treatment. In the twenty chapters of this volume his critical faculty is always on the alert to point out that the obvious interpretation is not necessarily the correct one or the only one. The general result is a solid body of well-documented material and conclusions, which will be of much value to all who are interested in the experimental study of protoplasm and the structures contained in the cytoplasm of plant cells.

The introductory chapters deal with the physical and chemical constitution of protoplasm, in which it is pointed out, for instance, that the viscosity ranges from 3 times to 10,000 times that of water and any isolated bit of cytoplasm forms a membrane about itself according to the law that molecules which lower the surface tension tend to accumulate in the peripheral layer. Much use is made of basic vital stains, such as Nile blue, cresyl blue and neutral red, while chrysoidine, probably because it is readily dissolved in lipides, stains clearly both cytoplasm and nucleus in cells which still show cytoplasmic streaming. But if growth is to continue, the vital dye is first accumulated in the vacuoles. In a chapter on the physical chemistry of protoplasm, microdissection and the coacervates of Bungenberg de Jong are among the topics considered.

In the chapter on plastids and the grana which are seen in some types of plastids, while no final opinion regarding their structurue is reached, plastids are regarded as probably composed of small lipide discs containing cholorophyll and embedded in a hydrophilic stroma. Five chapters are devoted to the chondriosomes and their relation to plastids. The duality of the chondriome is recognized and the author concludes on good grounds that plastids and chondriosomes are two categories of organelles which are permanently found in every cell of green plants, both showing all the characteristics of the chondriosomes in animal cells. The fact that the chondriosomes undergo vesiculation under some conditions leads to the conclusion that they also are coacervates.

Other chapters are concerned with the vacuoles, their vital staining, origin and development; and their transformations are fully illustrated in flowering plants, fungi and algae. They arise *de novo* in the cell and are believed to form through the separation from the cytoplasm of colloids having a stronger capacity for taking up water. The canaliculi of young plant cells are transformed into vacuoles, but a consideration of the evidence leads to the conclusion that there is no Golgi apparatus in plant cells.

This book should stimulate the study of the extreme complexity in morphological constitution of the cytoplasm, a colloidal system in which the chondriosomes, plastids and vacuoles constitute distinct phases. It adheres rather closely to the plant cell, but after all, that was the aim of the book.

One may agree with Dr. Seifriz, who has written the foreword, in being impressed with the thoroughness and the condensation with which the book has been written. The index of authors and of plant and animal names hardly compensates for the lack of any index of topics, and the frequent lack of dates in references to authors' papers will make some of them difficult to identify.

R. RUGGLES GATES

WOODS HOLE, MASS.

SOCIETIES AND MEETINGS

THE AMERICAN SOCIETY OF TROPICAL MEDICINE

THE American Society of Tropical Medicine, meeting conjointly with the Southern Medical Association, the National Malaria Society and the American Academy of Tropical Medicine, held its thirty-eighth annual meeting in Richmond, Virginia, on November 10, 11 and 12, 1942.

One of the outstanding features of the scientific session was the seventh Charles Franklin Craig lecture on tropical medicine, entitled, "The Importance of Tropical Medicine in the Armed Forces," by Rear Admiral Ross T. McIntire, U. S. Navy, Office of the Surgeon General, Washington, D. C.

A second highlight of the meeting was a symposium on "Tropical Medicine and the Medical School Curriculum," at which Dr. H. E. Meleney of New York presided. Dr. Paul Russell, Lieutenant Colonel, Washington, D. C., discussed the "Military Need," and Dr. Jean A. Curran, Brooklyn, N. Y., discussed "Finding a Place in the Medical Curriculum." In the absence of Commander M. E. Lapham, Washington, D. C., Dr. Meleney discussed the "Civilian Needs," as well as his own contribution, "Recent Progress." This symposium stressed the fact that there is a definite need for tropical medicine to-day in our medical school curriculum. A two-hour session was devoted to discussing this subject with fifteen

members of the Army, Navy and teaching profession participating, so that each group could learn the needs and difficulties of the other.

There was a record attendance at the annual luncheon of the society. The president, Dr. E. C. Faust, New Orleans, La., gave his presidential address on "Horizons of American Tropical Medicine." The society, for the first time in its history, honored individuals outside of the United States. The Walter Reed Medals of the society were given to two individuals from South and Central American countries. The first was presented to the Brazilian Government through its Minister of Education and Public Health, Dr. Gustavo Capanema, for outstanding work in eradicating *Anopheles gambiae* from Brazil. In the absence of Dr. Capanema, Dr. Mario Kroeff, director of National Council Research, received the award. The second medal was awarded to Dr. Carlos J. Finlay (posthumously) for pioneer work in yellow fever. Due to the illness of Dr. Finlay's son, Dr. Carlos E. Finlay, the medal was received for him by Dr. Domingo Ramos, director of the Finlay Institute, Havana, Cuba.

A round-table discussion entitled, "Malaria Therapy During the Present Emergency," closed the scientific session of the society. Dr. Herbert C. Clark, of Panama, presided, with Lieutenant Commander C. M. Wassell, Hollywood, California, and Dr. R. B. Watson, Memphis, Tennessee, participating. Dr. Clark discussed primarily the efficiency of totaquine as compared with quinine.

The American Academy of Tropical Medicine held its annual dinner, with Colonel R. P. Strong, of Washington, serving as toastmaster. Dr. W. C. Clark delivered his presidential address entitled "Some Impressions of Medical Practice in the Tropics."

The hospitality group met informally in the Jefferson Room of the Jefferson Hotel upon adjournment of the afternoon scientific sessions. In addition to the closer relationship between members and their guests, these meetings provided opportunities for brief discussions on currently vital topics. The first, by Dr. R. E. Dyer, was entitled "The Present Status of Typhus Vaccination." At the second gathering, Colonel George Lull, head of personnel in the Medical Division of the Army, discussed some of the problems associated with his office. These gatherings were again well attended and thoroughly enjoyed by the membership.

JOSEPH S. D'ANTONI,
Secretary-Treasurer

TENNESSEE ACADEMY OF SCIENCE

THE fifty-first meeting of the Tennessee Academy of Science was held at Vanderbilt University, Nashville, on November 27 and 28. A general session of the academy was held on Friday morning, November 27, with sectional meetings in mathematics, chemistry, geology and botany during the afternoon. A special session, new to the academy meetings, was held on Saturday, November 28. This new session was composed of a symposium on the teaching of the sciences under the chairmanship of Dr. A. J. Sharp, Department of Botany, University of Tennessee, and a Junior Science meeting with exhibits and demonstrations from the schools of central Tennessee. The Junior Science session was directed by Dr. Frances R. Bottum, of George Peabody College for Teachers, Nashville. It has been proposed that a junior section of the academy be formed, extending interest in the sciences in the schools, and Edwin D. Schreiber, of the Tennessee Industrial School, was chosen as chairman of this section.

At the academy dinner on November 27, Dr. D. M. Brown, professor of biology, East Tennessee State Teachers College, presented an address as the retiring president. A word of welcome was extended to the academy by Dr. Philip G. Davidson, dean of the Graduate School, Vanderbilt University.

The new officers of the academy for 1943 are Dr. C. S. Shoup, associate professor of biology, Vanderbilt University, *President,* and Dr. Edward McCrady, Jr., professor of biology, University of the South, Sewanee, Tenn., *Vice-president.* Dr. Kendell E. Born, Tennessee Division of Geology, Nashville, was reelected *Secretary-Treasurer,* and Dr. J. M. Shaver, of George Peabody College, Nashville, was reelected as *Editor* of the *Journal of the Tennessee Academy of Science.*

C. S. SHOUP,
President

REPORTS

THE WAR STATUS OF AUSTRALIAN SCIENCE[1]

DURING the past twelve months the problems involved in the rapid expansion of Australian war industry have become more acute, but paralleling the growing unity and determination of the Australian people to defeat the fascists, a number of steps forward in the use of science, for which our association has long been pressing, have been taken. The conferences of Australian scientific workers called by the

[1] A report received by the American Association of Scientific Workers from the head of the Federal Council of the Australian Association of Scientific Workers.