esculentum) contain a new carotenoid, prolycopene, $C_{40}H_{56}$, which on treatment with iodine is rapidly converted into a pigment mixture in which lycopene, the red pigment of the ordinary tomato fruit, predominates. Whereas lycopene possesses the trans configuration throughout, all or most of the double bonds which are available for stereochemical changes are present in their cis form in prolycopene.

Assuming that representatives of the new class of carotenoids are wide-spread in nature, even though their quantity may be small, we tested a series of plant materials in this respect. It was found that a new carotenoid occurs in some palm fruits, *viz., Butia eriospatha* and *B. capitata* (Becc.). It can be crystallized and shows in petroleum ether absorption maxima at 462 and 432.5 mμ. On addition of some iodine to the solution contained in a spectroscopic cell, the typical three-banded spectrum of γ-carotene appears almost immediately. The maxima are now at 493.5, 461 and 431 mμ. They have somewhat shorter wave-lengths than pure γ-carotene (495, 461.5 and 433.5 mμ) due to the presence of subsidiary stereoisomers. The new pigment has been termed *pro-γ-carotene.* In *B. capitata* it is accompanied by prolycopene from which it can easily be separated on the chromatographic column.

The fruits of *Pyracantha angustifolia* (Schneid.) contain pro-γ-carotene and at least two different prolycopenes.

Further experiments now in progress in this laboratory may reveal other examples of the occurrence of such carotenoids which are stereochemically different from representatives of the well-known all-trans series.

L. ZECHMEISTER
W. A. SCHROEDER
GATES AND CRELLIN LABORATORIES OF CHEMISTRY,
CALIFORNIA INSTITUTE OF TECHNOLOGY

SPECIAL CORRESPONDENCE

LETTER FROM DOUGLAS COCKERELL, LETCHWORTH, ENGLAND, OCTOBER 1, TO HIS BROTHER IN COLORADO

THE three-day meeting of the British Association in London has been a notable event. A. Huxley describes it as being the most important scientific meeting ever held. A lot of wise things were said by important people bearing on the function of science in the reconstruction after the war. A sort of "Atlantic charter" for science was promulgated, emphasizing the unity of science throughout the world in spite of racial and political divisions. It was stated that now for the first time we had a provisional standard of the minimum requirement in food to produce the maximum health, and that some three fifths of the people of the world were living below this standard, so we had a very definite aim in front of us. Altogether, as might have been expected from a body of scientists drawn from all over the world, a larger view of world problems was taken than we have had from our politicians.

I have been reading an account of a fanatical sect that existed in the midlands in the early part of the nineteenth century. They were convinced that the end of the world was imminent, and so took no consideration for the future, living from hand to mouth from day to day.

I notice a somewhat similar state of mind developing in connection with the war conditions. The future is so uncertain. I don't think that there is any fear of the country being conquered, but there is great uncertainty about what the conditions will be after the war, particularly about the value of money. People generally are, I think, in a mood to face and accept great changes if these are ably advocated; wise leadership is what is wanted, and the British Association meeting, by lifting the world problems out of narrow nationalistic grooves, may have a far-reaching effect on world opinion. Anyway it seems to have set a standard to be aimed at, and the political and diplomatical people appeared to agree with the suggestions put forward. The churches, too, are stirring, and taking a much wider view, and there is a marked revival of religious feeling, and a groping for some sort of guidance quite beyond the dogmas of the different sects.

Something great may come out of all this, but at present all seems to be in solution, and what will precipitate out we can not tell.

In the meantime we live on from day to day, not unhappily, but in a fog of uncertainty about the future.

T. D. A. COCKERELL
BOULDER, COLORADO

POST-GRADUATE COURSE IN TROPICAL MEDICINE AT TULANE UNIVERSITY, 1941–1942

DURING the first half of the academic year 1941–1942 a comprehensive post-graduate course in tropical medicine has been conducted at Tulane University under the auspices of the department of graduate medicine. There are seventeen enrollees, including nine from Latin-America, seven from the United States and one from Canada. Of the Latin-American group two are from Brazil, one from Chile, one from Colombia,

two from Guatemala and three from Mexico. Eight of these nine were selected for fellowship awards of the American Foundation for Tropical Medicine following careful scrutiny of a large group of endorsed applications. Some of the North American physicians in attendance plan to practice in missionary stations in Africa, India and the Netherlands East Indies; others expect to specialize in tropical medicine in the United States or with the defense forces.

The course is carefully integrated and consists of lectures, conferences, quizzes, laboratory, clinic and hospital practice covering the fields of hematology (16 hours), protozoology (40 hours), helminthology (40 hours), medical entomology (40 hours), tropical bacteriology (48 hours), mycology (32 hours), tropical pathology (24 hours), tropical surgery (12 hours), deficiency diseases (24 hours), preventive medicine and public health (24 hours). Approximately 120 of the total of 412 scheduled hours consist of work with patients in the wards of Charity Hospital in New Orleans.

This course is in charge of eight full-time staff members of the Tulane Department of Tropical Medicine, supplemented by time contributed by members of the departments of medicine, surgery, pathology and preventive medicine and public health of Tulane University, as well as of the Louisiana State Department of Health and U. S. Quarantine Service in New Orleans. In addition, the following guest lecturers, specialists in their subjects, have contributed to the success of the course:

Dr. Clarence A. Mills, professor of experimental medicine, University of Cincinnati, "Tropical Climatology" (October 8–10).

Dr. George W. McCoy, director, department of public health, Louisiana State University Medical School, "Plague and Tularemia" (October 29–30).

Dr. Herbert C. Clark, director, Gorgas Memorial Laboratory, Panama, "Malaria" (November 17–18).

Dr. G. H. Faget, senior surgeon, medical officer in charge, U. S. Marine Hospital, Carville, La., "Leprosy" (November 18–19).

Dr. C. G. Eccles, pathologist, U. S. Marine Hospital, Carville, La., "Pathology of Leprosy" (December 2).

Dr. A. W. Sellards, associate professor of comparative pathology and tropical medicine, Harvard Medical School, "Yellow Fever and Dengue" (November 24–25).

Dr. Rolla E. Dyer, director, division of infectious diseases, National Institute of Health, Bethesda, Md., "Typhus and Tick Fevers" (November 27–28).

Dr. E. B. Vedder, Colonel, M. C., U. S. A. (retired), professor of experimental medicine, the George Washington University, Washington, D. C., "The Deficiency Diseases," "Cholera" (December 8–13).

Dr. E. R. Kellersberger, general secretary, American Mission to Lepers, for twenty-four years missionary physician in the Belgian Congo, "Medical and Human Aspects of African Trypanosomiasis and Leprosy" (December 12).

No academic degree is awarded but a certificate is given to enrollees after successful completion of this work.

With the full endorsement and whole-hearted support of the American Society of Tropical Medicine, the American Academy of Tropical Medicine and other interested groups, it is expected that this course in tropical medicine at Tulane University will become a permanent contribution to American medical education.

ERNEST CARROLL FAUST
DEPARTMENT OF TROPICAL MEDICINE,
TULANE UNIVERSITY OF LOUISIANA

SCIENTIFIC BOOKS

GASES

The Separation of Gases. By M. RUHEMANN. Oxford University Press, xiii and 279 pages. 1940. $5.75.

THE importance of natural gases and all the primary gaseous products of industrial processes and the necessity of some degree of gas separation and purification in order that these gases may be used more economically is too well known and appreciated to need comment. The technique and theory of the process of separation of gaseous mixtures, mainly by liquefaction at low temperatures, has developed rapidly in recent years and in other countries—notably Russia—the knowledge and experience acquired by workers in the field have gone far toward establishing low-temperature gas separation as a field of applied science. Moreover, it is claimed that in the near future all gases used in bulk commercially will probably first be separated, at least partially, into a number of constituents, with a great gain in efficiency. Nevertheless, it is the author's contention that this "deep refrigeration," as it is called, has not received the attention it deserves from physicists, chemists and engineers in this country. It is with the intention of stimulating investigation in this field, and making the information already acquired available in English, that this book was written. While, according to the author's preface, the book is designed, in large degree, for those who may be instrumental in training future workers, it is the reviewer's opinion that the subject matter will appeal mostly to those already engaged as scientists or engineers in industrial laboratories where gas products are an important consideration. However, it must be stated that there is