Chemical Structure of Cytoplasm: Dr. R. R. Bensley

Wartime Maintenance of Scientific Production: Dr. J. S. Nicholas

Obituary:

Ross Aiken Gortner: Professor L. S. Palmer. Recent Deaths

Scientific Events:

The James F. Lincoln Are Welding Foundation; The Conservation of Fisheries in the Great Lakes; Biological Abstracts; Tropical Medicine at Tulane University; The National Chemical Exposition; The American Mathematical Society

Scientific Notes and News

Discussion:

Deformation of Rock Strata by Explosions: Professor J. D. Boon and Dr. C. C. Albritton, Jr. The Non-utilization of Lactic Acid by the Lactating Mammary Gland: Ross C. Powell, Jr., and Dr. J. C. Shaw. An Endorsement of the Use of Generic Names as Common Nouns: Dr. C. D. Beers

Scientific Books:

Applied Mathematics: Professor David Vernon Widder

Societies and Meetings:

The American Association of Variable Star Observers: Leon Campbell

Special Articles:

Pimelic Acid, Biotin and Certain Fungi: Dr. William J. Robbins and Roberta Ma. The Eh Factor and Racial Origins: Dr. Alexander S. Wiener. Vitamin A and the Thyroid: R. F. Sheets, Jr., and Dr. H. C. Struck

Scientific Apparatus and Laboratory Methods:

Control of Blue Mold of Tobacco by a New Spray: Dr. F. J. Anderson. An Electric Recording Marking Counter for the Consecutive Counting of Small Objects: Harold W. Wolf

Science News

SCIENCE: A Weekly Journal devoted to the Advancement of Science, edited by J. McKeen Cattell and published every Friday by THE SCIENCE PRESS, Lancaster, Pennsylvania. Annual Subscription, $6.00 Single Copies, 15 Cts. SCIENCE is the official organ of the American Association for the Advancement of Science. Information regarding membership in the Association may be secured from the office of the permanent secretary in the Smithsonian Institution Building, Washington, D. C.

CHEMICAL STRUCTURE OF CYTOPLASM

By Dr. R. R. Bensley

DEPARTMENT OF ANATOMY, THE UNIVERSITY OF CHICAGO

In a recent note written as a supplement to a symposium on the structure of protoplasm, K. H. Meyer summarizes Seifriz’s view of the structure of protoplasm as follows: “the ultimate structural units of the living substance are probably linear molecules or micelles so arranged as to form a framework” and “the living substance is composed of a true network of primary valence chains which at several points are tied together by chemical bridges held by molecular cohesion (to-day one would say residual valences or hydrogen bonds).” If Meyer had substituted in the first statement the word “some” for “ultimate” and left out the framework which requires further definition, and in the second statement had substituted the word “contains” for “is composed of” this would be acceptable to the majority of students of cell structure. X-ray diffraction and birefringence studies have brought convincing support to the concept of structural constituents in protoplasm which Seifriz with so much genius and foresight advanced a decade and a half ago.

This theory, however, interprets only some of the properties of protoplasm. These as listed by Seifriz are: "contractility, elasticity, cohesiveness, rigidity, and tensile strength." All these may be possessed by non-living systems. Protoplasm on the contrary requires, excretes, performs complicated chemical operations, uses or liberates energy and reproduces its own substance in kind. This metabolism is mediated by a multitude of intracellular enzymes and carriers and


