calcium than rats fed on a diet in which other greens containing negligible oxalates replaced spinach. Rats fed on spinach also excreted considerable oxalate in the urine and feces. From these results it appears that the kidney stones developing in tadpoles may be composed of calcium oxalate.

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SCIENTIFIC MEN IN THE HALL OF FAME

THE only scientists in the Hall of Fame at New York University to date are: John James Audubon, Asa Gray, Louis Agassiz, Joseph Henry, Maria Mitchell, Matthew Fontaine Maury and Simon Newcomb.

There are 110 distinguished Americans who constitute the College of Electors, and at their ninth quinquennial election, reported at the end of last year, they elected (with 86 votes) only Stephen Collins Foster, the first musician to enter. Dr. Walter Reed, hero of the fight against yellow fever; Henry David Thoreau, naturalist and author; and J. Willard Gibbs, physicist and chemist, whose work was so important that Professor Wilhelm Ostwald years ago printed a German translation of it—all these came very close to getting the 65 votes essential to election.

The next election is in 1945. In the interim it behooves scientists to see to it that the College of Electors has adequate information to enable them to give full and fair consideration to scientists eligible for this honor. Audubon and Reed were included in the postage stamp series honoring scientists, along with Jane Addams, Luther Burbank and Dr. Crawford H. Long.

JEROME ALEXANDER

FIRE HAZARD IN STERILIZATION BY DI-ETHYLENE GLYCOL

WHEN I read the article entitled "Sterilization of Surgical Instruments by Di-ethylene Glycol" by Charles Gurchot and Newton D. Mellers (SCIENCE, November 29, 1940, p. 516) I had an uneasy feeling and made a cursory search for reported properties of di-ethylene glycol. I found values of its flash-point cited as low as 135° C.

Since the flash-point depends considerably upon the exact conditions of test, I made a few rough experiments planned to approximate the conditions in a sterilizer. Heated in an evaporating dish to 145° C. di-ethylene glycol caught fire readily and burned with increasing vigor until I extinguished it.

At temperatures as low as 135° the fumes ignited on contact with a flame. Between 140° and 145° continued burning with increasing vigor sometimes occurred and at 145° and above always occurred.

I feel, therefore, that your readers should be warned that the use of di-ethylene glycol as recommended involves a very definite fire hazard. Under some conditions it might result in a serious fire.

L. B. TUCKERMAN

NATIONAL BUREAU OF STANDARDS

SCIENTIFIC BOOKS

EMBRYOLOGY OF INSECTS AND MYRIAPODS

Embryology of Insects and Myriapods. The developmental history of insects, centipedes, and millepedes from egg deposition to hatching. By OSKAR A. JOHANNSEN, professor of entomology, emeritus, and FERDINAND H. BUTT, instructor in insect morphology, embryology and histology, Cornell University. Pp. xi + 462, 370 figs. New York and London: McGraw-Hill Book Company, Inc. 1941. $5.00.

THE study of the embryonic development of animals, insensibly to most students of the subject, has differentiated into two phases, one of which is embryogeny, the other embryology. The first is what the growing animal does, and how it does it; the second is a mental product of the embryologists, an attempt to explain the nature, the meaning or the significance of the demonstrated facts of embryogeny. Our knowledge of embryogeny has had a steady growth; embryology has gone through many revolutions. Though the book here discussed is entitled "Embryology of Insects and Myriapods," its subject-matter is mostly embryogeny, which is what it should be as a suitable text for college students. Wherever controverted subjects or theoretical interpretations are given, both sides, or all sides, are presented without an effort to settle the question or to direct the opinion of the reader. The essential facts that are known concerning the embryonic development of the insects and the myriapods are clearly stated and excellently illustrated. The reader will find, too, that in many aspects of arthropod development, even among the insects, there is yet much to be done in determining precisely just what the facts are. It is a valuable feature of a text-book to emphasize discrepancies of observation or opinion, since it will suggest to students lines of investigation that might profitably be taken up as subjects for further study. The illustrations of the text are remarkably good, and their uniformity of style contributes much to the general appearance of the book. Nearly all the pictures seem to be new, but many have a familiar look about them, like something old with a new finish; the mystery is explained in the preface, where the authors state that the figures taken from the works of others have all been redrawn and in many cases "conventionalized."

The originals need take no offense. Throughout the book, however, are numerous entirely new illustrations, mostly the work of the junior author.

The text of Part I opens with an introductory chapter on cell structure, cell division, maturation, types of cleavage and related subjects. Then follows a chapter presenting a general outline of the "typical" development of an insect, giving the student a preview of the whole subject before going into details. The next seven chapters take up individually the various phases of insect embryogeny or the development of the anatomical systems of organs, including such subjects as fertilization, maturation and cleavage, blastoderm formation, differentiation of the germ cells, formation of the germ band, metamerism, the budding of the appendages, embryonic envelopes, dorsal organs, blastokinesis, differentiation of the germ layers, development of the alimentary canal and organs derived from the ectoderm and the mesoderm. "Polyembryony and Parthenogenesis" and "Microorganisms in the Egg" are the subjects of Chapters X and XI, and the concluding chapter of Part I gives a brief review of the methods and results of experimental studies on insect development. A full discussion is given in Chapters IV and VI on the vexing subjects of the segmentation or lack of segmentation in the region of the cephalic lobes and of the origin of the definitive mesenteric epithelium. Both sides of the controversy are fairly presented in each case, but the authors do not attempt to draw conclusions, nor do they venture any opinion of their own. It is to be regretted that there is not a fuller account of the development of ocelli and compound eyes, and the examples given of ocular organs are not representative of the usual type of insect eye structure. It is true, of course, that most information on the development of the compound eye of insects is based on holometabolous species and involves post-embryonic rather than embryonic development.

Part II, the larger part of the text, treats of the orders or major groups of insects separately, and ends with Chapter XXI on the Myriapoda. From the contents of the chapters in this section it would appear that there is now no order of insects in which something is not known of its embryonic development, but the authors point out that "many problems, both theoretical and factual, have not yet been solved." The bibliography contains close to 900 references, and an excellent feature of the book is the inclusion at the end of each chapter of author-date citations on the chapter subjects, which are given in full in the general list.

Insect embryology is well along in its second century, and has grown in an unorganized way to such proportions that few teachers have the courage to include it in their entomological courses. Both teachers and students from now on, therefore, will be fortunate in having not only an assembled text, but one so admirably composed and illustrated from the wealth of available material.

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REPORTS

THE BANTING RESEARCH FOUNDATION

THE annual report of the Honorary Secretaries of the Banting Research Foundation for the year 1939–40 discloses that its income, as provided for in its charter, was distributed in two ways. A block grant of slightly less than one half its income was made to the Banting and Best Chair of Medical Research of the University of Toronto, and eighteen individual grants were made to research workers in various parts of Canada who submitted problems to the foundation which were approved by the trustees. These grants were for either living expenses of the applicant or salaries for assistants, or materials, or combinations of these. Summarized reports of the results obtained on these eighteen individual grants follow.

Four grants were made for studies on chemotherapy. On one, Dr. W. J. Auger, Hospital for Sick Children, Toronto, found that sulfapyridine and sulfapyridine plus Type I antipneumococcic rabbit serum caused a marked reduction in the incidence of empyema in Type I pneumonia. He also devised a plate method for determining the relative potencies of various chemotherapeutic agents against pneumococci. He also found that novocaine in body fluids has a powerful antichemotherapeutic effect. An assistant was provided for Dr. P. H. Greey, department of bacteriology, University of Toronto, to enable him to test some seventy sulfanilamide compounds synthesized in the Department of Medical Research, University of Toronto, as to their therapeutic effects in combatting staphylococci. Some gave promising results in the test tube but failed to protect animals against staphylococcus infection. Dr. W. Hurst Brown received a grant to allow x-ray studies to be made on a large group of patients who had previously received large doses of sulfapyridine, in order to see whether any of them had developed urinary calculi owing to the deposition of the acetylated sulfapyridine. As only two out of 30 patients had any suspicious findings, danger of calculi formation in properly handled patients does not seem great. Dr. Karl Sternbach, department of hygiene and preventive medicine, Uni-