L. V. HEILBRUNN, The Measurement of Protoplasmic Viscosity; The Surface Precipitation Reaction.

GARY N. CALKINS, Non-individuality of Chromosomes in *Uroleptus Halseyi.*

R. BOWLING, Conjugation of Distomatous Forms of *Glaucoma scintillans.*

E. G. CONKLIN, Effects of Low Temperatures on Segmenting Eggs of *Crepidula;* Effects of Centrifugal Force on Development of Ascidian Eggs.

A. H. STURTEVANT, Corresponding Mutant Types in *Drosophila melanogaster* and *D. simulans.*

W. DOBZHANSKY, Chromosomes of *Drosophila melanogaster* Involved in a Translocation.

MANTON COPELAND, Behavior of *Nereis:* Method of Keeping Worms; Methods of Inducing Conditioned Responses; Behavior of Worm without Brain.

MARIE A. HINRICHS and IDA GENTHER, Ultra-violet radiation and Modification of Development in *Fundulus* and *Arbacia* and Rate of Heart Beat in *Fundulus.*

MARGARET R. MURRAY, Cultivation of Planarian Tissues in vitro.

WM. L. DOLLEY, JR., Various Stages in the Life History of the Drone Fly, *Eristalis tenax;* Apparatus Used in the Study of the Effect of Intermittent Light upon the Eye of the *Eristalis tenax* and in the Study of Adaptation in the Eye of *Eristalis.*

PAUL REZNIKOFF, Micrurgical Technique.

KENNETH BLANCHARD, Chemical Composition of *Arbacia* Eggs.

J. MAYOR, Certain Effects of Alternating Currents of Extremely High Frequency (1.5 Meters Wavelength).

HENRY J. FRY, Cytological Preparations of the Mitotic Mechanism in *Echinarachnius* Eggs.

STAFF and STUDENTS OF THE COURSE IN INVERTEBRATE ZOOLOGY, Living Invertebrates of the Woods Hole Region.

IVON R. TAYLOR, Measurement of Oxygen Consumption of Individual Pupae.

N. A. COBB and J. R. CHRISTIE, Living Mermithid Parasites as a Controlling Factor in the Birth-rate and Sex of Certain Grasshoppers; (Alive) Marine Free-living Nemas; Microscope Installation on Masonry, Specially Adapted Among Other Things for Camera Lucida Drawings; Birefringents of Living Cells.

P. W. WHITING and STUDENTS; ANNA R. WHITING, Genetic Work on the Parasitic Wasp, *Habrobracon juglandis;* Mutant Types and Methods of Rearing.

LORNA W. THIGPEN, Microscopic Demonstrations of Skins of Hairless Mammals.

E. ALFRED WOLF and PAUL HENSHAW, Effects of Alpha Rays on the Development of *Arbacia* Eggs.

STAFF OF THE BOTANY COURSE, Selections of Living Marine Algae from the Woods Hole Region.

W. M. SHANKLIN, Specimens of Brains from Various Fishes.

E. B. KRUMBHAAR, Stained Blood Smears of 200 Varieties of Fishes.

ARTHUR W. POLLISTER, Slides Showing Cytoplasmic Phenomena During Mitosis in Pancreas Cells of the Dogfish.

BUREAU OF FISHERIES LABORATORY

O. E. SETTE, R. A. NESBIT, E. W. BAILEY, Biology of mackerel.

PAUL S. GALTSOFF, Physiology of *Lamellibranchiata.*

C. E. CUMMINGS, Models of Local Fishes Showing Adaptations.

N. A. COBB, Microscopic Installation; Birefringence in living cells.

KENDALL W. FOSTER, The Use of the Silverman illuminator in the Direct Illumination of the Skin of the Fish, *Fundulus heteroclitus,* Showing the Chromatophores and especially the Iridocytes and Reflecting Layer.

PAUL S. CONGER, Diatoms.

JOHN C. HEMMETER, Microscopic Structure of Isolated Langerhans Organ of *Lophius* by Microprojectoscope.

R. A. NESBIT, Biology of Middle Atlantic fishes.

F. G. HALL, I. E. GRAY, R. W. ROOT, L. C. CHESLEY, Respiration of Marine Fishes.

INTERNATIONAL LIGHTHOUSE CONFERENCE

THE first International Lighthouse Conference that has ever been held met in London in July on the invitation of Trinity House, the English lighthouse authority. Trinity House is an organization with a long record of high achievement in the lighthouse work of the world. It holds a charter granted in 1514, and it has carried out some of the most important lighthouse engineering works, such as the building of the lighthouses on Eddystone Rock and Bishop Rock. It has included among its engineers Smeaton and Douglas, and on the governing board, known as the Elder Brethren of Trinity House, have been many of the noted men of England.

The conference included representatives of the lighthouse authorities of twenty-four countries, and also of a number of local lighthouse organizations and interested industries. The conference was entirely informal, and its purpose was the exchange of information and the discussion of problems affecting lighthouse systems; it did not undertake to pass final judgment on any matter. The conference was opened under the presidency of the master of Trinity House, the Duke of Connaught, and the chairman of its meetings was Admiral Mansell, the deputy master. Sessions were held from July 8 to July 12, and during the following week inspection trips were made to various works. The principal topics of discussion were lighthouse illuminants, unattended lighting systems, aerial lights, floating aids to navigation, including lightships and buoys, lighthouse structures, fog signals, radio beacons and other related matters. Much interesting information was presented, both in formal papers submitted in advance, and in discussion at the conference. The proceedings will be published by

Trinity House. The representatives of the United States were: George R. Putnam, commissioner of lighthouses, Washington; J. T. Yates, superintendent of the Third Lighthouse District, New York, and H. W. Rhodes, superintendent of the Eighteenth Lighthouse District, San Francisco, all of the Department of Commerce.

THE MATHEMATICS OF ENGINEERING

THE American Mathematical Society, at its annual meeting to be held at Lehigh University, Bethlehem, Pa., from December 27 to 28, is arranging that Friday be given to the presentation of the usual type of papers and that Saturday be devoted to a symposium on the mathematics of engineering. The general topic chosen for the Saturday sessions is "Differential Equations of Engineering," and it is proposed tentatively that both morning and afternoon three half-hour papers be given by men eminent in their fields. This part of the program is being arranged because of a wish expressed by some members of each of the two groups—mathematicians and research engineers—for closer cooperation.

All who are interested are cordially invited to attend. Headquarters for the meeting are at the excellent Hotel Bethlehem. Further details are being planned by the committee on arrangements, of which Professor Tomlinson Fort, of Lehigh University, is chairman. The sessions will be held in the new Packard Laboratory for electrical and mechanical engineering, a building which sets a new standard for equipment for teaching and research in engineering. On request to the secretary of the American Mathematical Society, 501 W. 116th Street, New York City, a printed program will be sent when it is off the press (about December 7). Other information will be gladly furnished.

All of the persons invited to participate in the program have accepted and have tentatively submitted titles.

H. W. March, department of mathematics, University of Wisconsin.

Vannevar Bush, department of electrical engineering, Massachusetts Institute of Technology.

T. H. Gronwall, department of physics, Columbia University.

A. Nadai, Research Laboratory, Westinghouse Electric and Manufacturing Company. (Formerly of the University of Göttingen.)

R. H. Park, Engineering Department, General Electric Company.

S. Timoshenko, department of mathematics, University of Michigan. (Formerly with the Westinghouse Electric and Manufacturing Company.)

R. G. D. RICHARDSON,
Secretary of the American Mathematical Society

SCIENTIFIC NOTES AND NEWS

PAINTINGS of scenes and persons identified with the history of Columbia University will be presented to the institution by alumni and various civic, historical and ecclesiastical societies, as part of the ceremonies to mark the celebration of its one hundred and seventy-fifth anniversary, which will take place from October 25 to 31. The portraits include among members of the faculties Dr. Michael I. Pupin, professor of electromechanics; Dr. John Dewey, professor of philosophy, and Dr. Henry Fairfield Osborn, research professor of zoology. Among the portraits of those who have died is that of James F. Kemp, formerly professor of geology.

HONORARY degrees conferred on the occasion of the celebration of the hundredth anniversary of the Royal Danish Engineering College on August 30 include three residents of the United States. These are Professor William Hovgaard, the Massachusetts Institute of Technology; Henrik J. Krebs, founder of the dye works at Wilmington, Delaware, and Professor H. M. Westergaard, University of Illinois.

DR. JOHN A. KOLMER, professor of pathology and bacteriology in the graduate school of medicine of the University of Pennsylvania, was recently awarded the Mendel medal by Villa Nova College for his work in immunology. This is the first award of the medal, which was established to commemorate the work of Gregor Mendel.

WE learn from *Popular Astronomy* that the Committee on Astronautics of the Astronomical Society of France awarded its first annual international prize to Hermann Oberth, a German teaching at the College of Medinsch, Roumania. The presentation ceremonies were held at the Sorbonne on June 6. Walter Hohmann, a German engineer, and Noel Deisch, an American biologist, were given honorable mention. Oberth's paper was deemed of such unusual merit that the original prize of 5,000 francs was raised to 10,000 francs by the founders, Mr. Robert Esnault-Pelterie, a French aeronautic engineer, and Mr. Andre Hirsch, a French banker interested in astronomy.

CHARLES PIEÉZ, consulting engineer of Chicago, formerly vice-president and general manager of the U. S. Shipping Board Emergency Fleet Corporation, has been nominated for the presidency of the American Society of Mechanical Engineers. Vice-