

Australia	1	Ireland	1
Austria	1	Japan	1
Czecho-Slovakia	2	Latvia	1
England	1	Lithuania	1
Finland	2	Poland	2
France	1	Russia	2
Germany	4	Switzerland	7
United States	1		

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A COOPERATIVE COURSE IN ELECTRICAL ENGINEERING AT THE MASSACHU- SETTS INSTITUTE OF TECHNOLOGY

WITH the opening of the fall term, the Massachusetts Institute of Technology took another step in carrying out its policy of maintaining the closest possible contact with the industries of the country. Arrangements have been completed with the Bell Telephone System by which a limited number of students in electrical engineering will be given an opportunity to get thorough first-hand knowledge of the manufacture, operation and development of the most modern electrical systems of communication including wire and wireless telephony and telegraphy.

By this new arrangement, a carefully selected group of students who have successfully completed the first two years of the regular course in electrical engineering at the institute, or the equivalent at other institutions, will be sent to New York. For four months they will be under the direction of the Bell Telephone System. During part of this time they will be put to work in the Western Electric Company's plant at Kearney, N. J., learning the actual details in the manufacture of telephone appliances. The remainder of the time will be spent in the work of installing and conditioning telephone switchboards in the vicinity of New York City.

During this time the students are on the pay roll of the Bell System and must turn out their day's work like other workmen, but as fast as they master one job they are transferred to another. The new course requires these students to attend regular institute classes while they are on the practical assignment and since they can not come to the institute, the institute goes to them by maintaining an instructing staff in New York. The class hours will be in the evening in order not to interfere with the practical work. The subject matter will be almost equally divided between electrical theory, and such cultural subjects as the writing and delivering of technical papers and reports and study of contemporary English literature and drama.

At the end of the four months this group of stu-

dents returns to the Massachusetts Institute of Technology in time to join their schoolmates in starting the second term's work, and another group takes their place in New York. They will spend the alternate terms at the institute and on the job in New York City where they will complete their practical experience by doing actual telephone operating in the various plants of the New York Telephone Company and getting familiar with the technical and practical problems of maintaining plant and equipment.

A final cooperative period will be spent in the Bell Telephone Laboratories carrying on research and studying the design and development of engineering processes and apparatus for both wire and radio systems.

Because of the advanced nature of the instruction and the research work of the last year, the higher degree of master of science in electrical engineering as well as that of bachelor of science is conferred upon those who successfully complete the course. Students are subject to the usual requirements applying to the employees of the cooperating company. The compensation paid by the company to students in this cooperative course, exclusive of the allowance for expenses incidental to changes in residence, amounts approximately to a total payment of fifteen hundred dollars during the cooperative periods. The working week ranges between thirty-nine and forty-eight hours depending on the character of the work assigned.

NEW HALL OF REPTILE AND AMPHIBIAN LIFE AT THE AMERICAN MUSEUM OF NATURAL HISTORY

EARLY in the coming year a new hall of reptile and amphibian life will be opened at The American Museum of Natural History, occupying the entire third floor of the east wing, according to *Museum News*.

Here for the first time the groups prepared under the direction of the late Mary C. Dickerson—groups characterized by the curator of the department, G. Kingsley Noble, as "perhaps the finest series of reptile and amphibian habitat groups ever produced"—will be seen unconfused with an incongruous overflow from the Hall of Mammals; and with them will be shown a whole series of new groups.

An effort has been made to arrange the material within the hall so that the various types of visitors may readily discover what interests them without wearying themselves in fruitless staring at what does not. The synoptic series of models and the systematic and "biological diagrams" illustrating principles or facts of importance to the technical student are to be found in the main body of the hall. In a cloister

along the west wall are arranged the fascinating series of habitat groups, many of them shown for the first time. The series of local reptiles and amphibians, of great interest to school children and amateur naturalists, is installed in an alcove at the far end of the hall.

Among the artistic and strikingly life-like groups to be seen through the windows of the cloister may be mentioned the Galapagos Island group depicting the life of land and sea iguanas, material for which was secured by William Beebe; the Florida cypress swamp, largest and last of the groups built under Miss Dickerson's supervision; the *Sphenodon* group; the giant tree frogs, and the new Gila monster group in a setting of cactus-strewn Arizona desert.

AWARDS FROM THE MILTON FUND AT HARVARD UNIVERSITY

ANNOUNCEMENT has been made at Harvard University of the second series of awards in accordance with the provisions of the Milton Fund for Research. Allotments are made at present for not more than two years, and twenty-seven awards are made at this time, amounting to something over \$41,000 for 1925-1926 and \$15,500 for 1926-27.

The Milton legacy yields an annual income of about \$50,000. A committee was appointed to advise the corporation in making a selection among the investigations proposed by members of the instructing, scientific or administrative staff of the university. The committee has consisted of Frank B. Jewett, electrical engineer, of New York, *chairman*; Professor Edwin F. Gay, of the department of economics at Harvard, and Professor W. J. V. Osterhout, formerly of the department of botany at Harvard.

The awards include the following to members of the scientific faculty:

Earnest Albert Hooton, assistant professor of anthropology; for the purchase of a machine, recently developed in the psychological laboratory of Princeton, for calculating coefficients of correlation in research in the anthropological laboratory.

Harlow Shapley, Paine professor of practical astronomy and director of the Harvard College Observatory; to purchase apparatus providing automatic temperature controls and comparison spectrum accessories for two stellar spectographs at the observatory.

Gregory Paul Baxter, Theodore William Richards professor of chemistry; for two years, for research connected with the determination of atomic weights through the density and compressibilities of gases. Results obtained with oxygen and helium have proved very valuable, and it is hoped that in the immediate future the studies may include experiments on hydrogen, nitrogen and some of the rare gases.

George Shannon Forbes, associate professor of chemistry; for supplies used in a research connected with the oxidation potentials in liquid ammonia.

Grinnell Jones, associate professor of chemistry; to purchase apparatus and supplies for an electrochemical investigation of the properties of solutions of salts.

Walter Fenno Dearborn, professor of education; to allow him to devote himself to the supervision of the major research enterprise of the Graduate School of Education: "an investigation of the mental and physical development of school children by means of annually repeated measurements of several thousands of the same individuals from the time of their entrance into school to the time of the completion of their formal education."

Comfort Avery Adams, Abbott and James Lawrence professor of engineering; for research having for its objective the better understanding of the mechanism of the dielectric phenomena in solid dielectrics.

Albert Sauveur, Gordon McKay professor of metallurgy; to allow him to prosecute with greater speed and efficiency his metallurgical investigations, including the corrosion of iron and steel, the influence of casting conditions on the physical properties of iron and steel, and grain size of pure metals.

George Vibert Douglas, instructor in geology, to purchase a quartz spectrograph for determining the minor constituents of minerals, ores and rocks, and the composition of minute mineral grains too small to be analyzed in other ways.

Percy Williams Bridgman, professor of physics; for expenses in connection with his high pressure investigations.

Edwin Crawford Kemble, assistant professor of physics; to defray the expense of experimental investigation of the influence of a magnetic field on band spectra.

Richard Clarke Cabot, professor of clinical medicine and professor of social ethics; for two years, for a study, desired by the department of social ethics, of the results of the treatment of delinquents in Massachusetts.

William John Crozier, associate professor of general physiology; to conduct research to determine the physico-chemical nature of the central nervous activities.

Samuel Randall Detwiler, assistant professor of zoology; to assist his researches in the field of Experimental Neurology.

George Howard Parker, professor of zoology and director of the zoological laboratory; to assist his research study in the nerve transmission of Physalia.

Edward Charles Jeffrey, professor of plant morphology; to assist in his study of trees in Australia and New Zealand.

William McDougall, professor of psychology; to assist his research on the transmission of acquired characters.

Adelbert Fernald, instructor in orthodontia and curator of the dental museum; for two years, to assist in perfecting measuring instruments for ascertaining the natural development of normal bone growth in a child from birth to the twelfth or thirteenth year of age, so that a comparison of the normal average bone growth of a healthy child may be made with those which are abnormal.