means of advancing the national economy, and to promote a knowledge of, and the use of, approved American industrial and engineering standards, both in the United States and in foreign countries, and to act as the authoritative channel in international cooperation in standardization work, except in those fields adequately provided for by existing international organizations.

## THE STUDY OF RADIATION AT CORNELL UNIVERSITY

THE Heckscher Foundation for the Promotion of Research in Cornell University has awarded grants amounting to $34,550 to members of the Cornell faculty for the year 1928–29 for a concentration of effort on a single field of research—radiation.

While considerable research has already been done in this field by individual members of the departments of physics and chemistry at Cornell, the new program involves for the first time the full cooperation and interchange of facilities of both departments. Twelve professors and a large number of assistants will engage in nine major projects, each of which will concern itself with radiant energy of a particular wavelength ranging from the visible or short light rays to the invisible radio wave of unusual length.

The Heckscher research council's plan involves the cooperation of the Cornell departments of physics and chemistry. Both departments were already engaged in a number of researches in the field of radiation. These studies have been coordinated, other studies are being planned to strengthen the whole program and the work will proceed as a unit.

Following is an outline of the investigations proposed to be carried on, some of them jointly, by the departments of physics and chemistry:

1. Professor F. K. Richtmyer, of the department of physics: X-rays. In particular, X-ray spectra and the absorption of X-rays by different materials.

2. Professor C. C. Murdock, of the department of physics: The use of X-rays in studying the size and shape of colloidal particles. And, in cooperation with Professor T. R. Briggs, of the department of chemistry, it is planned to use the same method in the study of catalytic agents.

3. Professor W. D. Bancroft, of the department of chemistry, researches in photochemistry as follows: The chemistry of radicals; the action of light on catalytic agents; the theory of photochemical reactions. In addition, Professor Bancroft will collaborate with Professor J. R. Johnson, of the chemistry department, in a study of the synthesis of optically active substances.

4. Professor R. C. Gibbs, of the department of physics: Spectroscopy. The study of line spectra, especially in the extreme ultra-violet. Professor Jacob Papish, of the department of chemistry, will assist in supplying pure materials.

5. Professor John R. Johnson (chemistry) and Professor R. C. Gibbs (physics): The absorption of visible and ultra-violet light by different materials, and the relation between absorption and chemical constitution.

6. Professor M. L. Nichols (chemistry) and Professor Ernest Merritt (physics), in cooperation with Professor E. H. Kennard (physics) and Professors Johnson and Papish (chemistry): Luminescence. In particular, the relation between phosphorescence and fluorescence and the chemical constitution of different materials.

7. Professor J. R. Collins (physics): Emission and absorption in the infra-red. The first experiments planned deal with the effect of extremely high pressures on absorption—an entirely new field.

8. Professor Merritt (physics): The use of short radio waves in studying the conditions in the upper part of the atmosphere. Apparatus loaned to Professor Merritt by the Magnetic Observatory of the Carnegie Institution has been set up and will be used for observations of the reflection of short radio waves by the upper atmosphere, and valuable cooperation is assured from the Bell Telephone Laboratories, the General Electric Company and the Carnegie Magnetic Observatory. Similar cooperation is expected from the United States Navy and from certain stations in foreign countries as soon as it is needed.

9. Professor Frederick Bedell and H. J. Reich (physics): Alternating current investigations. Several of the problems proposed have a direct bearing upon the experimental methods used in the other parts of the general program.

## AWARDS FOR SCIENTIFIC EXHIBITS BY THE AMERICAN MEDICAL ASSOCIATION

AWARDS for scientific exhibits made in connection with the recent meeting of the American Medical Association were made as follows:

### CLASS I

[Awards in Class I are made for exhibits of individual investigations which were judged on basis of originality and excellence of presentation.]

The gold medal to Edward Francis, U. S. Public Health Service, Washington, D. C., for his thorough and important scientific contributions to the knowledge of tularemia, illustrated by his exhibit.

The silver medal to Eben J. Carey, Marquette University Hospital, Milwaukee, for an exhibit showing the results of excellent experimental work on the dynamics of origin, structure and repair of bone.

The bronze medal to Adelbert Ames, Jr., and Gordon H. Gliddon, Dartmouth Medical School, Hanover, N. H., for exhibit showing significant application of physics to ophthalmology.

Certificates of merit, Class I, to the following (alphabetically arranged):

B. J. Clawson, University of Minnesota, Minneapolis, for an exhibit emphasizing clinical and experimental phases of the study of endocarditis.