Indeed, I could not carry out the lesser task without considering the whole meaning of science. And no clear line can be drawn between pure science and applied science: they are but two stages of development, two phases which melt into one another, and either loses virtue if dissociated from the other. The dual relation is common to many human activities and has been expressed in many ways. Long ago it was said in terms which in their comprehensiveness include all the aspirations of the searcher after knowledge: "Thou shalt love the Lord thy God with all thy heart and with all thy soul and with all thy strength" and "Thou shalt love thy neighbor as thyself." In the old story every listener, from whatever country he came, Parthians and Medes, Cretans and Arabians, heard the message in his own tongue. A great saying speaks to every man in the language which he understands. To the student of science the words mean that he is to put his whole heart into his work, believing that in some way which he can not fully comprehend it is all worth while, and that every straining to understand his surroundings is right and good: and, further, that in that way he can learn to be of use to his fellow men.

WILLIAM BRAGG

JOSEPH EDWARD KIRKWOOD

JOSEPH EDWARD KIRKWOOD was born at Cedar Rapids, Iowa, on January 24, 1872. He died suddenly, August 16, from heart failure, while engaged in research at the University Biological Station at Yellow Bay, Flathead Lake, Montana.

His mother and father were of pioneer stock, and in 1884 the family moved to Oregon to carve out a farm from the wilderness of the upper Willamette valley. He finished his preparatory and college training at Tualatin Academy and Pacific University, receiving his A.B. in 1898. A private fellowship enabled him to start his post-graduate work at Princeton University, and a graduate assistantship at Columbia University enabled him to continue his graduate study the following year. He married Ella Belinda Hoyt, of Hillsboro, Oregon, in 1901, and took her to Syracuse University, where he was an instructor from 1901 to 1904. During this period he finished the work for a master's degree at Princeton in 1902 and completed the work for the Ph.D. at Columbia in 1903. He ranked as associate professor in botany at Syracuse University from 1904 to 1907. He was made full professor and chairman of the department in 1907. During his teaching experience at Syracuse his three children, Robert Hoyt, Mary Burnette and Edward Russell, were born. During the year 1907–1908 he acted as assistant botanist with the Continental Mexican Rubber Company, Torreon, Mexico, as a member of the research staff, investigating the availability of the Guayule shrub as a source of rubber and was studying the possibility of cultivating this shrub for commercial rubber productions. The next year, 1908–9, he spent as an investigator with the Carnegie Desert Laboratory at Tucson, Arizona, carrying on research the entire year. Since 1909 he had been connected with the State University of Montana.

He came to the State University of Montana as assistant professor of botany and forestry; from 1910 to 1914 he was professor of botany and forestry, and from 1914 on was chairman of the department of botany. As chairman of the scholarship committee, chairman of the graduate study committee and as a member of the research committee he did much to build up the State University of Montana. Not only to his colleagues but to his students as well he continually urged the necessity of research as a part of the university educational program.

Despite the fact that he was faced with the task of building a department from the ground up and for many years carried the whole teaching load, he still found time for a more than creditable amount of research in his field. It is as a pioneer botanist in the northwest that he is chiefly known, and he was probably the first worker in the field of experimental forestry in the northern Rockies. His monumental work is on the trees and shrubs of the northern Rockies, the drawings for which show his infinite capacity for accuracy and artistry as well. This large work is still in manuscript, but the state university hopes to soon have it on the press; it will mean much to our understanding of the flora of this region.

From his early days at Montana he felt that the science workers of the northwest should have a scientific association of their own because they were so far removed from the science workers of the east. From its earliest days he perhaps did more than any other one man to organize the Northwest Scientific Association, serving as its chancellor in 1925 and as councilor from that time until the time of his death. His was the moving spirit behind the plans for a research laboratory and library for the science workers of the northwest, to be located as centrally as possible for the northwest, possibly at Spokane, Washington. It is to be hoped that his untimely death will not jeopardize the financing and building of such a science center.

He felt that the teaching of science in the secondary schools of the northwest was not well organized, and the members of the Inland Empire Teachers Association will testify to the fact that he did much to

make uniform the science teaching program among the secondary schools of the inland empire. The soundness of his botanical teaching is pretty well indicated by the relatively large number of his students who have gone into successful post-graduate work with other institutions. His work in the field of plant ecology, particularly as applied to forest distribution, was certainly recognized by the foresters of the northwest, if not of the whole country.

Aside from his publications his memorial will undoubtedly be the numerous botanizing expeditions which have taken him to regions practically unexplored by botanists heretofore. During the summers of 1923 and 1924 he made extensive pack-train trips into the Selway River and Clearwater River regions of eastern Idaho, regions which had not been explored except in a casual way by botanists since the days of the explorations of Lewis and Clark. During the summer of 1925 he and Dr. C. H. Clapp combined their resources and made an extensive trip into the Sun River country for the sake of geological and botanical exploration. On these trips he never spared himself, often times working far into the night and getting up early the next morning to continue on the trail. Many thousands of plants were collected on these trips and beautifully preserved and pressed.

Those who knew Dr. Kirkwood well will remember him for his enthusiasm for his work, for his kindly friendliness, and for his uncompromising stand for those things he thought and felt to be right in both the university and the community.

J. W. SEVERY

UNIVERSITY OF MONTANA

SCIENTIFIC EVENTS

THE EDINBURGH COLLEGE OF PHYSICIANS LABORATORY

THE annual report for 1927 of the Laboratory of the Royal College of Physicians of Edinburgh has recently been submitted by the curator, Sir Robert Philip. The report, according to the *British Medical Journal*, shows the large amount of work done, both in research and in reporting. Twenty-four workers were engaged in research during the year; nine were fellows of the college, one a member of the college, six were fellows of the Royal College of Surgeons, and the remaining eight were granted places in the laboratory by the committee; their researches related to pathological, bacteriological, chemical and physiological problems. The investigation into the therapeutic value of taurine in the treatment of tuberculosis, which Takeoka believed to be considerable, has been continued, but the result of the experiments has shown that taurine, even when given in large doses, can have only a relatively slight influence. A series of experimental observations was also conducted with a view to assisting in the standardization of tuberculin. Further progress has been made in work on the mathematical theory of contagious epidemics, and the results have been published. A statistical examination of antirabic treatment in India has also been published; this work was undertaken as a study of the system of statistical representation which the League of Nations will shortly apply to the statistics of antirabic institutes throughout the world. The importance of the alkaloid harmine, to the chemistry of which much study has been devoted at the laboratory, is, the report states, increasingly recognized while work on the synthesis of benzcarbolines in general has assumed greater importance. The Chemotherapy Committee of the Medical Research Council has asked that further syntheses be carried out; samples of certain preparations have already been submitted to the committee in order that their physiological and, in particular, their antimalarial properties may be tested. Other researches, covering a wide field, have been undertaken, and a considerable amount of work had been done in the laboratory as an aid to fellows in the prosecution of research on clinical lines by preparing sections of morbid anatomy, microphotography, etc. The amount of medical reporting work, which in the case of fellows of the College of Physicians or the College of Surgeons is done gratuitously, has increased greatly. It appears that a very large amount of this type of work was done for fellows on the staff of various hospitals for the benefit of their patients. The committee has therefore considered the desirability of obtaining repayment from the hospitals for work done in this way, and a tentative appeal has been sent out to the managements concerned, showing the amount of expense incurred by the laboratory in work hitherto gratuitously done for each hospital.

THE PROPOSED INTERNATIONAL PARK

A SUBCOMMITTEE of the Senate Committee on Agriculture and Forestry held a meeting in Minneapolis on August 21 to consider the possibility of establishing an International Park in northern Minnesota and the Province of Ontario, as advocated in the bill introduced in the last session of congress by Senator Shipstead. This bill contains the following provisions:

WHEREAS, The 14,500 square miles covered by the Rainy Lake watershed, lying in Ontario and Minnesota, and the immediately adjacent lands and waters constitute the only remaining vast wilderness area in the central part of North America; and

WHEREAS, This region contains the only remaining extensive coniferous forests in the Middle West with un-