Adams, professor of irrigation investigations and practice; R. L. Adams, professor of farm management; E. W. Braun, specialist in agricultural extension; B. H. Crocheron, director of agricultural extension; H. E. Erdman, professor of agricultural economics; L. W. Fluharty, specialist in agricultural extension; Walter Mulford, professor of forestry; S. W. Shear, assistant agricultural economist; E. C. Voorhies, associate professor of agricultural economics; David Weeks, associate professor of agricultural economics; H. R. Wellman, specialist in agricultural extension; C. H. West, assistant agricultural economist, and F. R. Wilcox, specialist in agricultural extension.

All papers dealing with agricultural economics emanating from members of the staff or graduate students or assistants working under their direction will be given a serial number and will appear as contributions of the Giannini Foundation, regardless of where they are published.

THE SETTLEMENT OF THE UNDEVELOPED AREAS OF CANADA

THE American Geographical Society has issued a statement in regard to its plan of conducting a scientific study of the settlement of undeveloped areas of Canada and later of other regions of the world which it has undertaken to finance. In order to deal with the many problems that affect agriculture, settlement and immigration it is expected that the investigations will extend over three or four years.

While the study is under the general supervision of a committee of the society, a Canadian committee headed by Dr. W. A. Mackintosh, professor of political and economic science, Queen's University, Kingston, Ontario, has been formed and the work has already been started. The initial research will be confined to the prairie provinces, Manitoba, Saskatchewan and Alberta.

It is planned to appraise the natural resources of the pioneer regions, to study methods of settlement with a view to avoiding the waste of life and capital that has characterized pioneer settlement in the past, and to trace the successive stages of utilization of natural resources and the effects on economic and social institutions.

On May 24 and 25 a group of scholars from Canada and the United States met in Ottawa to discuss these plans, and it was generally agreed that this major problem of settlement had so far received relatively little adequate systematic and intensive study.

The Canadian situation was considered to be the most important, at least for the time being. Into some of the undeveloped sections of the Dominion a flood of settlers has been steering, while other districts have been left practically waste. Some social and racial groups are pushing back the frontier, others are being drawn into the cities. Various reasons were attributed. It was suggested that only inferior land remained for the newcomers, or that it was more economical to improve the utilization of the lands now occupied than to pioneer the new regions. It was contended also that the pioneer spirit was dying out; that it had passed in the Anglo-Saxon while it remained in the French-Canadian; that men and women were no longer willing to accept the hardships of frontier life.

For some time a survey of this problem, first outlined by Dr. Isaiah Bowman, director of the American Geographical Society of New York, engaged the attention of committees of the National Research Council, the Social Science Research Council, the American Geographical Society and a number of Canadian scholars, who conferred with the representatives of the other bodies.

The following compose the committee of the American Geographical Society:

Dr. Frederick Merk, professor of history, Harvard University, *chairman.*
Dr. O. E. Baker, senior agricultural economist, U. S. Department of Agriculture.
Duncan McArthur, professor of history, Queen's University.
Dr. W. J. Rutherford, dean of the school of agriculture, University of Saskatchewan.
Dr. Kimball Young, professor of sociology, University of Wisconsin.
W. L. G. Joerg, American Geographical Society, *secretary.*

Associated with Dr. Mackintosh on the committee to study the Canadian phase are:

Dean W. J. Rutherford, *chairman.*
Professor D. A. McArthur, *vice-chairman.*
Professor Chester Martin, University of Toronto.
Professor D. A. MacGibbon, University of Alberta.
Professor C. A. Dawson, McGill University, Montreal.
Professor R. W. Murchie, University of Manitoba.

This committee plans to cooperate with the Dominion and provincial governments, the universities of western Canada and with individual investigators to avoid duplication and to facilitate the work.

THE CORNELL CENTER FOR RESEARCH IN BIOPHYSICS

THE General Education Board has given to Cornell University the sum of $1,500,000 for assistance in the development of a graduate center of scientific research in the border fields between the biological and physical sciences. The gift is conditional upon the

collection by the university of a similar amount by June, 1930. This is the first step toward the realization of a plan which will require for its completion the addition of approximately $9,000,000 to the resources of the university. About $1,000,000 will be appropriated for a new building for graduate instruction and research. The remainder will be used for the endowment of the teaching staff and equipment. It has been decided to undertake both the academic and financial development in three stages requiring capital amounts of $3,000,000 each. It was the opinion of the experts who made the survey which resulted in this action that the development of modern science required the establishment of divisions covering border fields of inquiry, and that Cornell University presented an excellent opportunity for this development.

In making the announcement President Farrand said:

> The formulation of the plan is based primarily on the outstanding contributions of the college of agriculture to biological science. The general field which is to be studied, the middle ground between the physical and biological sciences, is one of the most inviting areas open to investigation. While both groups of scientists have each been making additions to knowledge of great significance in their respective sciences, they have been coming face to face with problems which demand close collaboration.
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> The study of the physical sciences has been comparatively independent of the help of the biologist, but biological research is more and more leading into regions where further investigation becomes a problem for the physical scientist.
>
> Thus far there has been too little organized effort on the part of those working in either of these two great fields to collaborate in applying the methods of the physical sciences to the study of biological phenomena, and, what is more important, in applying physical principles to the interpretation of those phenomena.
>
> On the one hand, the biologist has found his time so occupied with his own researches that he has had little opportunity to study and assimilate the essentials of the underlying sciences of chemistry, physics and mathematics that are applicable to his problems. On the other hand, the student of physical sciences, especially during the last two decades, has found his own problems of atomic structure and the nature of matter so absorbingly interesting that he has given little thought to his obligation to collaborate with the biologist in studying those problems which are of obvious interest to both groups.
>
> Our plan involves the strengthening of our provisions for the basic sciences of physics, of chemistry and of biology in its various phases, with the particular purpose of coordinating and concentrating the attack on the border fields between the sciences. It is proposed to crown this coordinating development by creating a center for research in general physiology which shall embrace and emphasize the fields of biophysics and biochemistry and the varied aspects of the problem of organic function.
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> This constitutes one of the most important opportunities in the history of Cornell and should engage the enthusiastic support of its friends in bringing the plan to successful operation.

THE THIRTEENTH SUMMER MEETING OF THE AMERICAN MATHEMATICAL ASSOCIATION

ACCORDING to an announcement in the journal of the association the thirteenth summer meeting will be held at the University of Colorado, on Monday afternoon and Tuesday morning, August 26–27. A program of interest to college and university teachers of mathematics is being prepared. It will include the retiring presidential address of Professor W. B. Ford. Immediately following this meeting and lasting for the remainder of the week, there will be a colloquium and summer meeting of the American Mathematical Society. The colloquium will consist of a series of five lectures, beginning Tuesday afternoon, by Professor R. L. Moore, of the University of Texas, on "Point-set Theory." On Thursday afternoon, Professor Virgil Snyder will give his address as the retiring president of the society on "The Problem of Cubic Variety in Four-way Space."

This meeting will offer an unusual opportunity to combine mathematical activities with a pleasant outing. Boulder is a beautiful city with a population of about 15,000, delightfully located at the entrance to the Rocky Mountains. Since it is not a summer resort, prices are reasonable. A fifteen minutes' walk from the campus takes a person into wooded canyons and foothills; an auto ride of less than one hour, into the high mountains. Boulder is one and one half hours' bus ride from Denver, which has excellent railroad connections with all parts of the country.

Wednesday will probably be devoted to an all-day excursion into the elevated and scenic Estes Park and Rocky Mountain Park region. Other short trips and typical western outings are being planned. The committee on arrangements is making thorough preparations for entertaining visitors, and will be glad to assist any who may wish to spend a part or all of their summer in the beautiful Rocky Mountain region. The University of Colorado maintains a recreation office during the summer session; this is to be continued during the meetings, and the director, Professor C. A. Hutchinson, places the resources of his bureau at the services of members and their families. He will be glad to give any information and advice concerning board and lodging to members who may consider bringing their families earlier than the meeting to enjoy a prolonged stay in Colorado, or who