ject is, however, measurably complete in our libraries, but scattered under many hundred titles, mostly by European authors.

The investigation is primarily planned along the following lines:

1. The study, naming and cataloguing of specimens already in the three institutions. This work will incidentally much increase the reference strength of our herbaria and museums.

2. The increase of the three collections by specimens obtained through field expeditions sent to parts of the area as yet little known botanically, or in search of species of other areas as yet incompletely understood. Duplicate specimens beyond the three sets required will be distributed to other institutions in exchange. Friends of the institutions may furnish important aid by sending funds to any of them for the expenses of field expeditions.

3. The publication of advanced papers from time to time, dealing with portions of the investigation on which results have been reached, without awaiting the completion of the annotated catalogue.

The cooperative effort includes the following methods:

1. The subdivision of the work among staff members of the three institutions and among specialists of other institutions.

2. The loan of specimens from the collections of the three institutions to each other.

3. Visits of staff members of the three institutions to each other for the study of collections and for consultation.

4. Collections made by any of the institutions to be shared with the others.

5. Joint support of some of the field expeditions and division of the collections made.

Recent collections, the study of which has led up to the cooperative arrangement, include principally those made for the United States National Museum by H. Pittier in Venezuela in 1913; for the Gray Herbarium by J. A. Samuels in Dutch Guiana in 1916, and by H. A. Curran and M. Haman in Curaçao, Aruba, and northern Venezuela in 1917; and for the New York Botanical Garden by H. H. Rusby and F. W. Pennell in 1917 and 1918. The arrangement was consummated through correspondence between Dr. B. L. Robinson, of the Gray Herbarium, and Mr. Frederick V. Coville and Dr. J. N. Rose, of the National Museum, with Dr. N. L. Britton, of the New York Botanical Garden, in the latter part of 1917 and early in 1918, and it has been approved by the governing bodies and officials of the three institutions.

Professor Oakes Ames, of the Bussey Institution of Harvard University, has offered cooperation which has been gratefully accepted.

The first field expedition organized is one to Ecuador, led by Dr. J. N. Rose, of the United States National Museum; in this, the cooperating institutions are very materially aided by the Bureau of Plant Industry of the United States Department of Agriculture, the bureau desiring first-hand information about important economic plants which can be obtained only by field observations of a trained botanist. Dr. Rose left Washington on July 22, for an absence of about four months, and it is anticipated that the results of this work will add greatly to our knowledge of the flora and plant products of Ecuador.

The very large collections made by Drs. Rusby and Pennell in Colombia for the New York Botanical Garden are being organized for critical study, and will be divided among the three institutions as soon as possible.

SCIENTIFIC EVENTS

THE INTER-ALLIED FOOD COMMISSION

THE arrival of experts representing the allies to consider the food problem was announced in a previous issue. According to the *Journal* of the American Medical Association the Inter-Allied Food Commission meeting in London has decided that the minimal food requirements of "the average man" (weighing 154 pounds) doing average work during eight hours a day represent an energy value of 3,300 calories daily. In case it should become impossible to supply this requisite amount of food, a reduction of 10 per cent. on the foregoing figure can be supported for some time without injury to health. The commission agreed to accept Lusk's figures as to the pro-

portion of this amount to be assigned to women and to children of different ages. The following conclusions have been agreed on: (1) To state the weights of the various foods produced in each Allied country in metric tons. (2) It is not desirable to fix a minimal meat ration in view of the fact that no absolute physiologic need exists for meat, since the proteins of meat can be replaced by proteins of animal origin, such as those contained in milk, cheese and eggs, as well as by proteins of vegetable origin. The commission, on the other hand, resolved to fix a desirable minimal ration of fat—75 gm. per average man per day. The ration will be made up of (*a*) fats of vegetable origin and (*b*) fats of animal origin. If the amount of fats of vegetable origin are insufficient for this purpose, it may be necessary to maintain a certain stock of animals to furnish this fat. (3) The commission established the "man value," that is, the number of average men equivalent to the population of each of the Allied countries. This "man value" is taken as the basis for calculating the exact amount of food which must be provided for the adequate nourishment of the total population of each country. (4) The commission considered the estimates in tons of the home productions of the soil furnished by each Allied country for the year 1918–1919. These statistics will serve as a basis for determining the amount of food available for men and for animals, respectively, in each country. (5) Each delegation, in calculating the amount of calories available for men, should assign to men the maximal possible proportion of all cereals, excepts oats. (6) A uniform average milling extraction of 85 per cent. for wheat should be adopted throughout the Allied countries. This extraction may vary from 80 per cent. in summer to 90 per cent. in winter, and it can apply to the United States only as regards their internal consumption, and then only in case of scarcity. (7) The methods of reserving the maximal possible proportion of the cereal production for the use of man may vary in each country. Man should always take precedence over animals in the allocation of food. If this principle be accepted in the fixing of prices, it is the prices of animal products which should be limited, rather than those of such vegetable products of the soil as may serve equally well for feeding men and animals. Thus the production of veal, pork and poultry at the expense of food available for man should be discouraged, and this is best achieved by fixing a price for those animal products which will make it unprofitable for the producer to feed them on cereals. (8) The commission reserved for its next meeting the task of examining the figures which will enable it to determine the caloric value of the home production of each of the Allied countries. The determination of this figure, compared with the needs in calories of the population of each country, will enable the commission to deduce the amount of imports necessary for the maintenance of the population or the exportable surplus, as the case may be. (9) In all the Allied countries, any propaganda, having for its object the encouragement of food production and of economy in the use of food, should be organized and directed by men of science well acquainted with the subject.

FOURTH NATIONAL EXPOSITION OF CHEMICAL INDUSTRIES

The Fourth National Exposition of Chemical Industries will be held in the Grand Central Palace, New York City, during the week of September 23 this year. The managers are Charles F. Roth and F. W. Payne. The advisory committee consists of Charles H. Herty, *chairman,* Raymond F. Bacon, L. H. Baekeland, Henry B. Faber, Ellwood Hendrick, Bernhard C. Hesse, A. D. Little, Wm. H. Nichols, H. C. Parmelee, R. P. Perry, G. W. Thompson, F. J. Tone, T. B. Wagner and M. C. Whitaker.

The *Journal of Industrial and Engineering Chemistry* says that the exposition is a wartime necessity and, regarding it as such, each exhibitor is planning his exhibit to be of the greatest benefit to the country through the men who visit it, all of whom are bent upon a serious purpose—that of producing war materials in large quantities and constantly in-