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## REPORT OF THE CHIEF OF THE BUREAU OF AGRICULTURAL ECONOMICS

UNITED STATES DEPARTMENT OF AGRICULTURE,  
BUREAU OF AGRICULTURAL ECONOMICS,  
Washington, July 28, 1925.

SIR: I have the honor to transmit herewith a report of the work of the Bureau of Agricultural Economics for the fiscal year ended June 30, 1925.

Respectfully,

HENRY C. TAYLOR,  
*Chief of Bureau.*

Hon. W. M. JARDINE,  
*Secretary of Agriculture.*

The activities of the Bureau of Agricultural Economics have grown up in response to pressing need for assistance upon the part of large groups of farmers and others confronted with economic problems related to the production and marketing of farm products. While rendering many specific services and disseminating information of current interest and immediate value to farmers in planning their production and marketing programs, the bureau is also expending much effort upon studies of long-time problems which it is hoped may form the basis of wise policies for future agricultural developments.

It is important that the work of the bureau should be conducted in accordance with sound policies. In viewing the question of agricultural policies, there are three standpoints which may be taken in formulating and promulgating programs for agriculture:

(1) The purely agrarian standpoint which views agriculture and agricultural problems and policies entirely from the standpoint of the largest possible returns to agriculture without regard to the other interests of the Nation.

(2) The purely industrial, business, or city point of view which looks upon agriculture as a source of cheap food and raw material without regard to the welfare of the agricultural classes.

(3) The standpoint of the nation as a whole, from which agriculture is viewed as a source of an ample supply of food and raw material at prices which are reasonable to the consumer and at the same time adequate to provide for a satisfactory life on the farm and in the rural community.

Obviously, the Bureau of Agricultural Economics, being an agency of all the people, must take the national point of view, and it is highly desirable that all those engaged in both country and city occupations may come to see the unity of their interests and adopt this viewpoint. Although it is recognized that farmers have the same right as other groups to organize for the purpose of promoting their own interests, and that all possible information and assistance should be given them in meeting their organization problems, it is not the function of this bureau to promote movements which partake of the character of a struggle for an increase in the farmer's share of the national income at the expense of other classes. Neither is it the function of this bureau to align itself against such movements.

The position of the bureau must of necessity be that of positive leadership in service and educational work which accords with the national point of view. This places the bureau in a position where its major functions are those of fact finding, information giving, and service rendering. This edu-

cational and service work points definitely toward more efficient production, more efficient marketing, and the establishment of a satisfactory standard of living on the American farm in the interest of the national welfare.

It is obvious that the policy of the bureau must be to give great care to the accuracy of the facts it presents and to give full publicity to these facts, without discrimination as to their effect upon any particular class. This policy is essential not only because the Bureau of Agricultural Economics as a Government institution must take the national point of view, but because a knowledge of unfavorable conditions is as important as a knowledge of favorable conditions as a basis of planning production and marketing programs.

In carrying forward the work of the bureau the policy has been to work in cooperation with others. Under this policy of cooperation the work of the bureau has been closely coordinated within itself and with that of other related institutions—a policy which has greatly increased the effectiveness of its work. This cooperation has been varied and far-reaching.

(1) In the first place, the closest cooperation exists between the divisions of the bureau. This makes possible the preparation of the Outlook Report, the Report on the Agricultural Situation, Crops and Markets, and various other reports. In the preparation of these reports every division of the bureau contributes its share, and the reports issued represent the combined efforts and knowledge of the bureau as a whole.

(2) Cooperation is maintained between this bureau and all other bureaus of the department. Much is gained through working in close cooperation with bureaus which are dealing with problems that have a bearing upon the work of this bureau. For example, the pathologists of the Bureau of Plant Industry assist this bureau in the practical work of inspecting shipments of fruits and vegetables by training our inspectors to identify plant diseases. This bureau in turn reports back to the Bureau of Plant Industry plant diseases discovered in order that steps may be taken to eradicate them.

(3) The bureau has cooperated continuously with other Government departments in Washington, such as the Department of State, through its Consular Service; the Department of Commerce, through the Bureau of the

Census, the Bureau of Foreign and Domestic Commerce, and the Bureau of Standards; the Department of Interior, particularly with the Reclamation Service, and the Geological Survey; the Post Office Department, through the use of the rural mail carriers in expanding our crop-estimating service; and with the Navy Department, through the use of its high power radio-broadcasting facilities.

(4) Cooperation with State colleges of agriculture, State departments of agriculture, and bureaus of markets is of tremendous assistance to the work of the bureau. Work was carried on during the past year in 47 out of the 48 States under cooperative agreements covering many lines of work. For example, 29 States cooperated in the crop and livestock reporting work of this bureau, and 34 in the food products inspection service. The Bureau of Agricultural Economics is thus enabled to assist in the coordination of the work of many separate agencies to the end that duplication of effort may be eliminated and that information in regard to activities in all States may be made available to all. Through cooperation with State agencies, the Bureau of Agricultural Economics is in position to aid in the more effective study of local problems. It is expected that the passage of the Purnell bill will aid greatly in the study of the farmers' economic problems and further stimulate cooperation between this bureau and the States.

(5) Active cooperation is constantly increasing between this bureau and agricultural interests and business organizations which are interested in agricultural products. The value of the market news service depends very largely upon the cooperation of the railroads and other transportation companies which furnish information on number of cars of products shipped, movements and destinations of products, unload reports, etc., which are necessary to a full knowledge of the distribution of farm products.

(6) Cooperation of constantly growing importance is maintained with departments of foreign governments and with organizations interested in agricultural products in many foreign countries. Cooperative arrangements have been completed this summer with the principal cotton associations of Europe for the use of universal standards for American cotton. This brings to a satisfactory conclusion negotiations which have been pending

for several years. Through cooperation with the British Wool Federation and other wool interests in Europe modifications have been made in the United States wool standards, and negotiations are now under way for a conference between representatives of American and foreign wool interests at which it is believed these standards will be adopted for general use. A representative of this bureau visited the principal seed markets of Europe last year and made arrangements for an exchange of information with regard to production and marketing of seeds. This service is proving very helpful to producers and shippers of seed in America. Much information with regard to production in competing countries and to outlets for agricultural products abroad is received from foreign governments either directly or through other Federal departments. This provides the basis for an intelligent adjustment of American agriculture to world market conditions.

The International Institute of Agriculture at Rome, technically affiliated with the Department of State, actually serves as an arm of the Bureau of Agricultural Economics. Through this institution information is collected by wire and mail from all the leading crop-producing and consuming countries of the world. In exchange the institute is furnished with data regarding the United States prepared by this bureau. Through cooperation with the Department of State the services of 400 consuls have been utilized in collecting information not covered by the International Institute. Information is secured also through the commercial attachés of the Department of Commerce and from other sources.

Cooperation with agencies in foreign fields is maintained and stimulated by the work of the foreign representatives of this bureau. At the present time six members of the staff of this bureau are stationed in Europe. These representatives travel widely, confer with agricultural interests and governmental departments, arrange for the interchange of information, and keep this bureau informed with regard to all agricultural developments in Europe. They make special studies of the particular needs of the European markets and furnish American producers and shippers with information which aids them in adjusting their production and in selecting and packing their products for the foreign markets.

The services of the bureau are represented in the three main lines of work: (1) The crop and livestock estimating and statistical services; (2) the commodity marketing divisions, including the preparation of standards, market news, and improvement of market practices; and (3) the farm organization and management divisions which provide facts upon which production plans may be based for individual farms as well as for agricultural regions.

The growing demand for facts relating to the economic situation in agriculture is shown by the steadily increasing call upon the bureau for information. The four years that have passed since the consolidation of the economic activities of the department have been marked by the constant straining of facilities to keep pace with the increase in requests for facts and services. The reception of this work is convincing evidence that the plan to correlate closely work in farm management, marketing, and crop estimates is fundamentally sound. The policy of laying before farmers, traders, merchants, manufacturers, and consumers the results of surveys, research, and general observations covering both production and distribution to enable them to make the right decisions concerning their operations is believed to be fundamental in the work of this bureau.

In the marketing work of the bureau special effort is made to determine the kinds, quality, and quantity of product which are and which should be offered for sale. In the process of distribution the questions of standardization, packing, assembling, transporting, warehousing, financing, and finally of retailing all call for special studies and services. The magnitude of the industries concerned make it impossible for any individual producer, trader, or manufacturer to keep fully informed concerning developments in all stages of production and distribution. This has resulted in a growing demand for the services of unbiased governmental agencies.

The efforts to aid farmers by improving their production methods through better culture and husbandry have been far-reaching in their results, but good farm management includes more than good culture. Without broad information in regard to general economic conditions, the farmer is not able to meet the changing conditions in domestic and world markets. Hence the need of closely co-

ordinating the facts of national and world production, movements, and prices for the purpose of providing a basis upon which farmers may plan their program of work.

During the third year of its operation the Bureau of Agricultural Economics has made special efforts to coordinate its various activities with the purpose of providing producers of farm products more adequate information for their guidance.

The outstanding example of such coordination of information is presented in the Annual Agricultural Outlook Report, the third of which was issued by the bureau in February, 1925. This report was made possible by bringing together workers in all economic fields, including farm organization, cost of production, crop estimates, world crop and market statistics, price analysis, studies of demand, standardization and inspection, warehousing, farm finance, land utilization, and the like. All available facts that would be useful in planning for efficient production on the farm were carefully considered. The Outlook Reports emphasize the principle that production and marketing are inseparable and that behind orderly marketing lies orderly production. They furnish a concrete example of how economic information may be assembled and used in formulating a national program for agriculture.

The report issued this year was widely appreciated and generally used by the extension agencies and by the agricultural press in giving to farmers the information they need in planning their farm operations for the year. The purpose of the report was better understood, and the report itself was more carefully prepared, due to the added experience which the staff has gained in this type of work. It is recognized that these reports are now an established part of the work of the bureau, and they are looked forward to by all interested groups.

An important development has been the preparation of State and regional outlook reports based on the national report. In a number of instances the bureau assisted the State colleges and other agencies in the preparation of such reports and plans are being made to cooperate with still other States during the coming year.

Since the work in crop estimating, marketing, and farm management has been brought together in the bureau, more cooperation has been secured with States. Extension directors have asked for aid in inaugurating com-

prehensive educational programs on production and marketing.

Prices that products will bring underlie all production programs. Price studies, therefore, have been an important part of the work of the bureau during the past year. The collection of statistics on prices of farm products at the farm and in the markets has been expanded. The relation of prices to varying conditions of supply and demand has been studied in detail.

Closely related to price studies are surveys of costs and of farm incomes. These studies have been continued and expanded for the purpose of measuring more carefully the factors that influence farm costs and farm incomes. The object has been not only to collect specific figures on costs and incomes and to display the methods used by farmers known to be successful at any one time, but also to determine the basic principles underlying successful production.

Crop estimating is the method of approximating changes in production by the use of sample data gathered by selected observers. It is a current service rendered at frequent intervals during the period when facts on production are of greatest value. The census taken at intervals of 5 or 10 years gives a good historical record of production, but is too expensive and slow a method to be used for shorter periods.

Outstanding improvements have been made during recent years in the methods employed in gathering data and in preparing the crop and livestock reports. The plan of utilizing rural mail carriers to distribute and collect schedules, covering acreage in crops, numbers of livestock, on specific farms, and other data, has proved to be one of the greatest forward steps in recent years. The semi-annual pig surveys, made through rural carriers, are now an established feature of the work, and the forecasts of market supply have been found to be reliable.

The intentions-to-plant reports now issued on crops other than cotton have demonstrated their value. The extension agencies have come to understand the purpose of these reports and are using them in advising farmers what to plant. Considered in connection with the outlook reports, reports on intentions to plant are of fundamental importance in outlining programs of action for farmers.

Semi-monthly cotton reports begun in 1924 by direction of Congress give

more complete information regarding the progress of the cotton crop than has ever before been available. Although there has been some objection on the part of the trade which would indicate that such frequent reports were somewhat disturbing, particularly to the speculative market, the attitude of the more thoughtful merchants who view the subject from the standpoint of the cotton industry as a whole appears to be that it is impossible to get too much good information. It is perhaps too early to appraise fully the value of these reports.

The importance of the Federal crop-reporting service is shown when a report is not quite as expected by the trade. There are a large number of private reporting agencies that seek to anticipate the Government report for the benefit of their patrons. If there were no Government report with which these private reports could be compared, the producer would not be served, since the private reports are conducted for the benefit of the trade customers.

The use of uniform and generally recognized standards is essential to orderly marketing, as it furnishes the basis for sale on description and for price reporting. Up to the present time standards have been recommended by this bureau, either in mandatory or permissive form for the following products: 32 of the most important fruits and vegetables; 8 grains; 7 varieties of hay; cotton; wool; tobacco; butter and eggs; and for a number of classes of livestock and dressed meats.

An outstanding example of the function of a standard in world-wide trade is that of the universal standards for cotton. The American standards were adopted as the basis for universal standards in 1923, and beginning August 1, 1924, became the basis for world-wide trade in American cotton. Although efforts were made in some quarters to return to the use of standards of local origin, the merit and desirability of universal standards had been demonstrated, and the leading cotton associations of the world have subscribed to agreements with the Secretary of Agriculture to buy and sell cotton on the basis of no other standards than the universal standards. This is believed to foreshadow the adoption of uniform standards and practices in world trade for many other agricultural products.

Cooperative organization among farmers has grown rapidly during

recent years, and the collection of facts concerning the growth and experiences of producers' organizations has been continued until the bureau now has the most comprehensive records of cooperative organizations in the world. These include the history and statistics of over 10,000 active organizations, as well as a large volume of facts concerning the early efforts in this form of organization, both successful and otherwise. Through close contact with active organizations information has been obtained concerning methods of operation and the results of various experiences which makes it possible for bureau workers to advise groups of farmers as to the probable difficulties to be met and what methods have been most successfully used in meeting them.

As a service agency the bureau presents to groups of producers who desire to organize the facts derived from historical studies and current conditions. The bureau is not merely presenting theoretical principles but is attacking real problems, utilizing the experience gained by others as a basis for suggesting what had best be done. The specialists of the bureau have made studies of the operation of organizations and reported personally to the directors on suggestions for improved management. Current legal decisions have been explained by legal advisers of the bureau as an aid to the directors of organizations in determining their procedure under the numerous laws which now relate to cooperative organizations.

Through the extension of the United States warehouse act each year more farmers are enabled to store their products and market them to better advantage. Two years ago only 4 products were storable under this law, while now 10 products are storable. Not only can more products be stored but farmers are beginning to rely on the information shown on the warehouse receipts regarding grade and condition of the products. A typical illustration of the value of these receipts from a marketing standpoint comes from a town in Georgia, where, prior to the operation of the licensed warehouse, the farmers knew little of the real value of their product. In the past two years the confidence manifested in the licensed-warehouse receipt showing grade and weight of the products is evidenced by the fact that all the cotton sold by farmers to buyers and mills at this point is sold on the basis of the ware-

house receipts. The wasteful practice of excessive sampling is thus eliminated, and the farmer gets the current market price for the particular grade of cotton which he produces.

From a credit standpoint the licensed-warehouse receipt attained more importance during the past year than ever before. The regard with which these receipts are viewed by bankers in all sections makes it a relatively simple problem to finance the marketing of crops handled through federally licensed warehouses. Since the Federal-warehouse receipt has attained such importance in the field of marketing finance the bureau is throwing additional safeguards around the administration of the act. Not only is it cautious in granting warehousemen licenses in the first place, but it is insisting on a strict observance of the law. In the past year a number of cases involving violations of the law were referred to the Department of Justice for prosecution, and the first conviction for a violation of the warehouse act was recently obtained.

Research in land economics has been emphasized with respect to the use value of land, classification of lands yet to be brought under cultivation, and a study of the methods of development which will result in the proper use of each class of land. The studies of the factors influencing land values will serve as a guide to investors in farm lands and in making long-time credit arrangements. All of this work is directed toward assembling facts to aid in developing Federal and State policies with regard to agriculture.

The problems of farm credit, farm insurance, and farm taxation have assumed added importance as a result of the war and the depression which followed. In the credit studies of the bureau an effort has been made to ascertain the capital, production, and marketing credit needs of farmers, the sources through which needs are supplied, and the terms and conditions under which credit to farmers is advanced. As a result of these studies it has been possible to assist both individual farmers and farm organizations in their credit problems.

Adequate insurance at reasonable cost is essential to safe farming. Greater use of insurance in its various forms will afford needed protection and help stabilize the farm income. Although insurance against fire is obtained by many farmers through joint-stock fire insurance companies,

the studies of the bureau show that farmers' mutual fire insurance companies have been very successful in meeting the fire insurance needs of farmers. The need is great also for insurance covering crop losses, over which the farmer has no control. The bureau has devoted considerable time to the difficult problems in this field.

During recent years farm taxes have increased while the funds from which they are paid have not correspondingly increased. The studies of the bureau during the past year have shown that farmers are carrying a disproportionate part of the tax burden. These studies have indicated ways and means whereby a more equitable distribution of the tax burden may be accomplished.

The livestock industry has been particularly in need of aid during the past year. The service of the bureau to the livestock industry falls into three principal classes. The first covers estimates of supply, market prices of live animals, and measures of their movement to market. Prompt service is the watchword, particularly in the market news quotation service. Though the news service is almost national in scope, there are a few important markets that should be added to the system. The second consists of the standardization of livestock, meat, and wool as a basis for price quotation and grading. The third aims to develop better practices in marketing. Particular attention is being given to the retail distribution of meats and a nation-wide survey was begun to uncover the general facts.

The standards of quality prepared by the bureau for eggs have been revised and presented to the trade during the year. A number of wholesale grades have been adopted as a basis for trading in exchanges and for inspection. To carry the standards back to the egg producers, numerous egg-candling and grading schools have been held in cooperation with extension agencies. Over 20 States are now conducting active egg-grading work for the purpose of educating producers to offer only graded eggs in the primary markets. The market news on eggs and poultry products has been extended somewhat, but the development of a nation-wide quotation service is dependent upon the adoption of more uniform grades in the several markets.

The dairy market reporting and inspection work should be further ex-



panded. Through cooperation with State agencies inspection of butter at point of production is developing. Through such a service the product of over 400 creameries in Minnesota, amounting to over 80,000,000 pounds of butter annually is being inspected and certified. The certificate issued by the inspector has been carried through to the consumer on each package and used as a basis of creating confidence in the quality of the product.

The services of the bureau to the fruit and vegetable industry have been increased mainly in the direction of shipping-point inspection. This service, which is practically self-supporting, has found wide favor, and the use of the Government certificate is steadily increasing. The advantage of careful inspection near point of production in educating producers to know market requirements has been shown definitely. The value of the certificate as a means of facilitating trade and minimizing disputes is one of the chief reasons for the growing popularity of this service.

The inspection work has been conducted primarily through cooperation with the States under nearly 30 separate agreements. The policy has been to adapt the services to the needs of those to be served. Through close cooperation with the trade the work in standardization, inspection, and in improving market practices has been effected without the recourse to mandatory law, exemplifying the advantages of working closely with all interested groups in Government work of this character.

The difficult problem of preparing standards for hay has been successfully met by the workers of this bureau. The great number of varieties and classes of this product, the wide variations in practices in different markets, and the difficulty of preparing exact measurements of quality made the problem extremely complicated. The United States hay standards now cover the principal varieties of hay. Numerous hearings were held with producers and the trade in all the important hay-producing regions in order that the standards as finally adopted might be entirely satisfactory. Hay-inspection service has been extended particularly in the Southeastern and Western States.

Agricultural economics can not give a complete answer to the problem of stabilizing American agriculture without considering the economic aspects

of the farm population. Movements of population to and from farms, standards of living, housing conditions, rural institutions, relations of town and country—all subjects of research growing out of everyday situations of farm people—have an important economic bearing on a stable agriculture.

The farmer and his family are engaged in agriculture as an occupation in order to obtain a satisfactory living. The bureau endeavors to assist farmers in every way to obtain a satisfactory return for their labor and investment through improved methods and practices. It is not enough, however, to help them obtain a satisfactory financial return. The more prosperous they become the greater the danger that they will leave the farm and seek occupations in towns and cities unless they are able to find satisfactory living conditions on the farm and in the rural community. The research in farm community conditions is designed to help keep good farmers on the farms, since it is thought that good farmers will not leave the country for the town if a satisfactory standard of living may be maintained on the farm. The economic problem of farm population, therefore, is a study of all the conditions surrounding the farmer's living in the country to see that all the facilities for a good living may be established in the farm communities.

## ORGANIZATION OF THE BUREAU OF AGRICULTURAL ECONOMICS

The principal divisions of the bureau as organized at the close of the fiscal year are as follows:

### ADMINISTRATION

HENRY C. TAYLOR, *Chief.*  
 LLOYD S. TENNY, *Assistant Chief.*  
 NILS A. OLSEN, *Assistant Chief.*  
 J. CLYDE MARQUIS, *Director of Economic Information.*  
 LOUIS G. MICHAEL, *Foreign Agricultural Economist.*  
 C. W. KITCHEN, *Business Manager.*  
 F. J. HUGHES, *Employment Manager.*  
 H. F. FITTS, *Administrative Assistant.*

### PRODUCTION DIVISIONS

*Farm Management and Costs.*—M. L. WILSON, Senior Economic Analyst, in charge.  
 Types of farming.  
 Economics of crop production.  
 Economics of livestock production.  
 Farm records and accounts.  
 Production programs.  
 Incomes from farming.  
*Crop and Livestock Estimates.*—W. F. CALLANDER, Senior Statistician, in charge.  
 Crop Reporting Board.

Crop and Livestock Estimates—Continued.  
 Research in statistical methods.  
 Livestock reports.  
 Crop reporting.  
 Price reporting.  
 Tabulating and Computing Section.

#### MARKETING DIVISIONS

Cotton.—A. W. PALMER, Chief Business Specialist, in charge.  
 Cotton standardization.  
 Classification of cotton.  
 Enforcement of cotton futures and cotton standards acts.  
 Future and spot market investigations.  
 Cotton price quotation service.  
 Cotton testing.  
 Demonstration of cotton standards.  
 Research in cotton marketing.  
 Standardization of cottonseed and products.  
 Fruits and Vegetables.—W. A. SHERMAN, Chief Marketing Specialist, in charge.  
 Market news service.  
 Inspection service.  
 Grades and standards.  
 Standard containers.  
 Research in marketing methods and costs.  
 Foreign competition and demand.  
 Livestock, Meats, and Wool.—C. V. WHALIN, Assistant Chief Business Specialist, in charge.  
 Market news service.  
 Livestock marketing investigations and market movements.  
 Livestock grade standardization and demonstration.  
 Purebred livestock marketing investigations and prices.  
 Meat marketing investigations.  
 Meat grade standardization.  
 Meat grading service.  
 Market research analysis and cost studies.  
 Wool marketing and standardization.  
 Foreign competition and demand.  
 Operation of Center Market.—C. W. KITCHEN, Superintendent.  
 Grain.—H. J. BESLEY, Grain Supervisor, in charge.  
 Grain investigations.  
 Milling and baking investigations.  
 Research laboratory.  
 Establishment of grades.  
 Rice standardization and investigations.  
 Grain sorghums investigations.  
 Grain cleaning.  
 Bulk handling.  
 Methods and costs of marketing grain.  
 Federal grain supervision.  
 Foreign competition and demand.  
 Dairy and Poultry Products.—ROY C. POTTS, Assistant Chief Marketing Specialist, in charge.  
 Market news service.  
 Dairy inspection service.  
 Dairy products investigations.  
 Poultry products investigations.  
 Research in marketing methods and costs.  
 Cold Storage Reports.—WM. BROXTON, Assistant Marketing Specialist.  
 Hay, Feed, and Seed.—W. A. WHEELER, Assistant Chief Marketing Specialist, in charge.  
 Market news service.  
 Hay marketing investigations.  
 Feed marketing investigations.  
 Seed marketing investigations.  
 Hay standardization.  
 Hay inspection service.  
 Broom corn market investigations.  
 Standardization of beans and peas.  
 Warehousing.—H. S. YOUNG, Chief Marketing Specialist.  
 Grain warehousing.  
 Wool warehousing.  
 Tobacco warehousing.

Warehousing—Continued.  
 Cotton and broom corn warehousing.  
 Fruits and vegetables warehousing.  
 Tobacco standardization.

#### GENERAL DIVISIONS

Agricultural Finance.—NILS A. OLSEN, Senior Agricultural Economist, in charge.  
 Farm credit.  
 Farm taxation.  
 Farm insurance.  
 Statistical and Historical Research.—O. C. STINE, Senior Agricultural Economist, in charge.  
 Foreign competition and demand.  
 Statistical analyses.  
 Market statistics.  
 Production statistics.  
 Transportation.  
 Agricultural history.  
 Graphics.  
 Agricultural Cooperation.—CHRIS L. CHRISTENSEN, Economic Analyst, in charge.  
 Economics of cooperation.  
 Accounts and business practices.  
 Statistics of cooperation.  
 Legal phases of cooperation.  
 Farm Population and Rural Life.—C. J. GALPIN, Senior Agriculturist Economist, in charge.  
 Farm population statistics.  
 Population aspects of rural community buildings.  
 Farmers' standard of living.  
 Economic Library.—MARY G. LACY, Librarian, in charge.  
 Land Economics.—L. C. GRAY, Senior Agricultural Economist, in charge.  
 Land resources and utilization.  
 Land reclamation.  
 Land settlement.  
 Land tenure.  
 Land values.  
 Farm labor.  
 Division of Information.—J. C. MARQUIS, Director of Economic Information, in charge.  
 Editorial.  
 Consumer demand research.  
 Periodicals.  
 Press service.  
 Radio news service.  
 Exhibits and motion pictures.

#### DIVISION OF FARM MANAGEMENT AND COSTS

M. L. WILSON, *in charge*  
 H. R. TOLLEY, *Economic Analyst*

Types of Farming, W. J. SPILLMAN; Economics of Crop Production, M. R. COOPER; Economics of Livestock Production, R. H. WILCOX; Farm Records and Accounts, J. B. HUTSON; Production in Areas Around Growing Cities, BURKE H. CRITCHFIELD; Adjustments in Production, M. J. B. EZEKIEL; Incomes from Farming, S. W. MENDUM.

At the beginning of the fiscal year the farm-management and cost-of-production work of the bureau was consolidated, thus bringing into still closer coordination the work which aims to assist farmers in modifying their programs of production in order to obtain a greater return. Profitable systems of farming, the lessons which come from the close study of costs, and the changes necessitated by shift-

ing market demand, are considered more closely in obtaining practical results.

Effort is made to assist farmers in adjusting their programs to meet the changing agricultural conditions. Studies are made of the cost of producing farm products in order to help the farmer in determining the most profitable types of livestock and crops to produce and the most efficient methods to employ in the management and production of crops and livestock.

Studies of local problems are made with a view to making recommendations which will meet peculiar local conditions. Close cooperation is maintained with other divisions which handle land-utilization problems, crop and livestock estimates, and marketing problems, with other bureaus and with State experiment stations and extension divisions.

#### AGRICULTURAL READJUSTMENTS IN AREAS SURROUNDING GROWING CITIES

Studies of areas around growing cities designed to determine the extent to which farmers are meeting the needs of the local markets and to obtain an economic basis for production and marketing programs were made at Lebanon, Pa.; Roanoke, Va.; Macon, Ga.; Atlantic City, N. J.; Keene, N. H.; and Lima, Ohio.

An economic survey was begun of agriculture in the New Orleans trade area, including Louisiana and the southern half of Mississippi. The study is being made through the cooperation of the Louisiana State University and other local agencies. Marketing and production specialists have been detailed from the extension departments and experiment stations of Louisiana and Mississippi, and a representative of this bureau has been assigned to direct the survey.

In these studies the quantities of foodstuffs consumed in the area are determined, the places where they are produced and how producers in the area are meeting the local demands as to quality, quantity, and season of production. Markets without the area to which surplus products are being shipped are studied to determine how producers within the designated area are meeting those market requirements. Competing producing districts outside of the local area are studied to determine the comparative advantages and to place before the farmer facts in reference to the entire industry to guide him in making his production plans. These several

phases are brought together and the possibility pointed out of increased profits to the farmers through increased production for the local market, through meeting the requirements of outside markets by changes in production and marketing practices and in preparation of products for market.

In the Lebanon, Pa., study, where the sale of whole milk furnishes the major cash income, it was found that producers were not meeting the quality and seasonal requirements of the Philadelphia market and that coordinated efforts by producers in general was needed to bring about readjustments that would result in more satisfactory market conditions.

In a survey covering the farm-trade territory of Roanoke, Va., farmers were advised not to increase their production of milk because the local market for whole milk was entirely supplied and the surplus might have to be sold at a much lower price on a butterfat basis. Poultry raisers were shown that an increase in the local production would probably not materially affect the prices received, because poultry products were now being sold in terminal markets, and that an increase in size of farm flock should prove profitable. Vegetable growers were advised of the quantity or truck crops that could be marketed in Roanoke.

The effect of the construction of hard-surfaced roads and the use of motor trucks in marketing farm products and in changing the producing areas of many products for the Roanoke market was pointed out. In Cheshire County, N. H., farms are being abandoned and agricultural production has been declining for the last two decades. The growing of timber on these abandoned farms and as a part of the regular farm organization was encouraged.

The market for dairy products was analyzed, and the basis for a profitable expansion was pointed out. Poultry producers were supplying only about one-half of the local demand, and an analysis of feed costs and price showed the industry to be sound, and farmers were encouraged to increase the size of their farm flocks. Improvement in roads and the use of motor trucks has extended the market area of vegetable growers to a 40-mile radius and has given commercial vegetable growers who have favorable soil and climatic conditions a greater advantage over the small vegetable grower in supplying the local markets.

## LIVESTOCK ECONOMICS

Timely economic studies have been made in regions where postwar conditions have left the livestock industry in a chaotic condition, and in sections where helpful and correct direction can be given to adjustments in livestock production that are continuously taking place, in an effort to meet the changed economic conditions.

**Studies in the Appalachian region.**—Assistance was extended to the cattlemen of southwestern Virginia who are following the practice of using their pastures for the production of grass-finished beef. Analyses were made by the bureau of the demands and requirements of the markets to which the cattle go, in order to determine just what changes in production methods would produce the kind and quality of product for which there is the greatest demand.

In the Corn Belt, field work was continued with the cattle feeder and hog producer to determine and point out those methods and practices that are most profitable under changing economic conditions. The manuscript for a bulletin entitled "The Cost of Producing Pork in Iowa and Illinois" has been submitted for publication.

**Sheep production in North Dakota and Minnesota.**—With the transition taking place in eastern North Dakota and northwestern Minnesota from grain production to a diversified system of farming, a study was made of the type of livestock that would supplement grain, bring about a better utilization of labor and feed, a better means of controlling weeds and maintaining soil fertility, as well as a better distribution of income throughout the year. With sweet clover used in the rotation to aid in maintaining fertility and keeping down the weeds, it was found that sheep fitted well into the farm organization, causing little extra cash outlay but bringing a cash income at two periods of the year.

As part of the investigation a general study was made, in cooperation with other divisions of the bureau, of the outlook for the sheep industry for the next several years. The conclusions reached were embodied in the bulletin published in cooperation with Minnesota and North Dakota dealing with the place of the sheep enterprise of the region and the extent to which it would probably pay farmers there to increase their production of sheep and wool.

**Range cattle production.**—Studies of the cost and methods of producing

range cattle in Colorado and Texas were continued, and reports were issued giving timely material on costs and methods which could be used by ranchers as the basis for future plans.

This department has initiated a study embracing the important range cattle producing areas of the United States. In addition to determining the practices and costs of beef production, the studies are designed to show the comparative advantages and disadvantages of these different types of livestock in the different areas and the probable market demand for them. The data assembled show the present organization of ranches and farms in important producing areas, and the risks resulting from climatic conditions affecting carrying capacity of ranges and yields of cash and feed crops. The study will give information on the extent to which the present system of ranch and general farm organization should be modified to meet inherent weather risks and present and prospective economic conditions.

Ranch-organization, cost-of-production, and farm-practice data were gathered from approximately 300 ranches in the area including southwestern North Dakota, southeastern Montana, northwestern South Dakota, and northeastern Wyoming. Supplementing these ranch data, additional material was obtained showing the present and potential uses of the tillable portions of the land located in areas now used principally for ranching. The influence of homesteading and absentee ownership of land upon the grazing industry was studied, as well as the influence of the taxation and credit situation upon the organization and operation of ranches in the area.

## DAIRY PRODUCTION

In cooperation with the Divisions of Statistical and Historical Research and of Dairy and Poultry Products, a general analysis of the economics of the dairy industry was begun. Farm records from Vermont were analyzed to determine under what conditions milk could be produced most economically in that region. Arrangements were completed with Wisconsin for a cooperative study of records from the butter region for the same purpose, and with Virginia for a similar cooperative study in the dairy regions of that State. Material relating to this phase of the economics of milk production is already available for Pennsylvania and New York.

The study of costs and methods in fluid milk production in New York, carried on in cooperation with the New York State College of Agriculture, was continued, and manuscripts for two bulletins were completed during the year. From farm-survey records obtained in 1922, a bulletin was completed showing the factors responsible for differences in the earnings of dairy farms in Chester County, Pa. These findings are applicable to dairy farms in the area from northern Virginia to northern New Jersey.

#### POULTRY PRODUCTION IN WESTERN WASHINGTON

The bureau cooperated with the Washington State college in a regional study of poultry farming in the Pacific Northwest. The purpose of the survey was to study the outlook for commercial poultry farming in this area in comparison with the situation in competing areas; also to determine and recommend better systems of poultry management for individual farms operating under different sets of conditions. A preliminary report of the study was published by the college in December and was used extensively during the winter and spring in extension and teaching work.

#### COST OF PRODUCING CORN, WHEAT, OATS, COTTON, AND POTATOES

Study of the cost of producing corn, wheat, oats, cotton, and potatoes was continued along lines similar to those pursued in 1922-23 and the results published in the 1925 June Supplement of Crops and Markets. In a study in 15 selected cotton areas, 777 cost-of-production records were obtained. These have been tabulated and a preliminary report prepared for publication setting forth the cost of producing cotton in widely scattered areas with different degrees of boll weevil infestation. A study of the cost of producing wheat under dry-farming conditions in the Pacific Northwest was completed and a manuscript prepared for publication. Information was obtained on various economic phases of the use of tractors and horses for motive power and on the use of combines and stationary threshing machines.

#### TOBACCO PRODUCTION IN VIRGINIA

In cooperation with the Virginia Agricultural and Mechanical College and Polytechnic Institute farm rec-

ords for the tobacco areas of Virginia were analyzed and the manuscript for a bulletin prepared showing the principal factors responsible for differences in earnings. Farm practices resulting in economical tobacco production were studied, and specific conclusions drawn as to ways of increasing returns on individual farms. These results are of general application to the tobacco producers of the South Atlantic States.

In addition, a bulletin setting forth ways of increasing profits on the tobacco farms of south central Virginia was published by the Virginia extension service, and a number of farmers agreed to put into operation on their farms the practices recommended. These farms were visited by representatives of this bureau and of the Virginia Polytechnic Institute, and definite recommendations were made for each farm. At the end of the year a statement will be obtained as to the effectiveness of the recommendations in increasing profits.

#### PEACH PRODUCTION

Near the close of the year an extensive survey of the peach industry in the United States was inaugurated. An enumeration of the number of peach trees, classified by age and variety, in all commercial peach orchards is being made in the bureau. Production costs, methods of handling and shipping, influence of varieties and grades on prices, present and possible markets, competition of peaches from different parts of the country, and other data needed by peach growers in planning their production programs are being obtained.

#### STUDIES IN SOUTHERN STATES

In cooperation with the Georgia State College of Agriculture the bureau made a study in Sumter County to determine the place of cotton and livestock on the farms of that and adjoining counties where the boll weevil has made cotton production very hazardous. Information was obtained from farmers, railroads, business men, and others, and the data are now being analyzed and will soon be available to the research and extension workers of Georgia and to the producers of the area.

In Mississippi work has been continued in a community of 25 farms in Choctaw County. Study of the combination of enterprises and the methods and practices in production has

been under way on these farms for four years. Recommendations for changes in practice and management are made each year as a result of the study. This work will be of importance not only for its immediate benefits to the farmers involved but also as an experiment and demonstration in farm management extension work.

In Arkansas the principal work has been the keeping of farm and farm household accounts with farmers and farmers' wives, approximately 200 records having been kept during the year. A preliminary report on "Standard Costs in the Production of Arkansas Crops" was distributed, and a number of newspaper articles on farm-management subjects were prepared.

In South Carolina an experiment station bulletin on farm management and cost of production in 1922 on cotton farms in Anderson County was published, and data were collected from the same farms for later years.

In cooperation with the Office of Sugar Investigations of the Bureau of Plant Industry and the Louisiana State Experiment Station a study of sugar-cane production in Louisiana was continued and arrangements made to finish the field work at the end of the present crop year. A report covering the three years of study will then be prepared.

#### PRACTICAL FARM ECONOMICS

A brief textbook, entitled "Practical Farm Economics," designed for the use of farmers, students, and extension workers, was prepared and published as Miscellaneous Circular 32. This circular states that in order to make the farm pay the farmer must decide what to produce and how to produce it, what to sell and how to sell it, his success depending upon his making the right decisions on these questions. These questions come up nearly every day in the year, and decisions must be based on a knowledge of principles and facts.

#### FARM RECORDS AND ACCOUNTS

The object of farm records and accounts work is to assist farmers to plan the organization of their farms and decide upon the methods and practices that will result in the greatest profits. Data are collected, analyzed, and presented in order to help farmers plan desirable long-time combinations

of crops and livestock for a particular area and farm. Such data are further used by farmers in reaching conclusions as to adjustments in long-time plans desirable because of changing conditions and prices. This work was continued in 13 States and new work started in 2 additional States. In all of the States in which the work was continued bulletins have been prepared or are now in the process of preparation showing the results of these studies.

An increasing number of States are using the results of this work in connection with farm management extension activities. In making detailed studies of farms in this way wide variations in requirements and returns are noted on farms with similar resources. Careful analyses reveal the organizations and practices that result in the greatest efficiency. This gives extension workers an opportunity to point out and give the details of the operations of organizations and practices that farmers are using in getting the largest profits.

#### IMPROVEMENT IN RESEARCH METHODS

Attention was given also to improving the methods and technique used in research. A definite statistical test was made of several different methods of measuring the farmer's return to determine which gave the most satisfactory index of an individual farmer's success. A technical paper was prepared for the Journal of Farm Economics presenting the results of this study and describing in detail the computation of "operator's earnings," which was found to be the most satisfactory measure. Rates to be used in cost-of-production investigations were studied with a view to evolving methods of allocating costs in such a way that the charges made against each enterprise would truly reflect the economic alternatives on the farm.

#### TYPES OF FARMING

A study of the geographical distribution of types of farming was continued, and data obtained from censuses of 1909 and 1919 for relative crop areas and number of animals per 100 acres of crops were compiled and charted by counties for all States. These data are of value in outlining agricultural programs and are in demand from National and State extension services.

### AGRICULTURAL PROGRAMS

A study was begun in cooperation with an experiment station and the extension service of New Jersey toward the development of the economic basis for an agricultural extension program for the State. All available information relating to the trends of production, both in New Jersey and other areas, of the important agricultural commodities of the State is being analyzed to determine the market competition that New Jersey products will probably meet in the coming years. The principal types of farming in the State have been determined, and farm-management studies made in former years are being reanalyzed to determine the types of organization that were giving the best returns with the prices and costs which obtained at the time the studies were made. A number of outstanding farmers in each of the principal areas are being revisited in an effort to determine the types of farming and the methods and practices in production that are giving the best returns under present conditions.

A study of the agricultural situation in the Big Bend country of western Washington was inaugurated in cooperation with the State College of Washington. The object of this study is to develop the economic basis for a program of agricultural production in the area. The experiences and methods of farmers in the area during the past 25 years are being studied and combined with results obtained by the experiment stations located in or near the area to determine the possibilities of producing wheat successfully and the possibilities of supplementing wheat production with other crops and livestock.

### FARM ORGANIZATION PLANS

Improved plans of organization were studied for farms in a number of areas where farm-organization and cost-of-production data had been collected in former years. A plan of the organization of hill-land farms in southeastern Ohio was worked out in cooperation with the Ohio State College of Agriculture and is now being published in bulletin form. Similarly an organization plan for 160-acre farms in central Indiana was prepared and is being published in a Farmers' Bulletin, entitled "Successful Farming on 160-Acre Farms in Central Indiana." A plan for a 240-

acre farm in central Indiana is in the course of preparation. As a result of data collected in the spring-wheat region in previous years, improved organization plans were developed for farms in two areas of eastern Montana, which are being widely used by county agents and other extension forces in their efforts to assist the farmers in developing a sound and profitable agriculture.

### FARM RETURNS

The collection and compilation of incomes from farms was continued. A return of \$1,205 to the owner-operator for the use of \$17,260 of capital and the labor of the farmer and his family is the average shown by a survey of 15,103 farms for 1924. This return of \$1,205 in 1924 compares with an average return of \$1,020 from 16,183 farms for 1923, and an average return of \$917 from 6,094 farms for 1922.

The return per farm in 1924 includes \$1,024 cash, the excess of cash receipts over cash outlay for operating expenses, and an increase of \$181 in the inventory of crops, livestock, machinery, and farm supplies from January 1, 1924, to January 1, 1925.

In addition, the farm family had food and fuel produced and consumed on the farm, the estimated value of which on 13,700 of the farms reporting this item was \$266, and the use of the dwelling, the rent of which was not reported.

Compared with the reports for 1922 and 1923, both receipts and expenses in 1924 were greater than in 1922 and 1923. The margin between receipts and expenses was greater in 1924. The increase in receipts was due principally to the greater value of crops sold in 1924. Receipts from livestock and livestock products were practically the same in 1924 as in 1923. The average cash outlay for interest on borrowed money and for new buildings and improvements was almost the same in 1924 as in 1923. This does not mean that all farmers were more prosperous in 1924 than in the previous years. The net result varies for different types of farming and for different sections of the country.

The total agricultural income of the United States for each year since 1919 has been computed by the division of statistical and historical research.

## DIVISION OF CROP AND LIVESTOCK ESTIMATES

W. F. CALLANDER, *in charge*

Crop Reporting Board, W. F. CALLANDER, chairman; S. A. JONES, secretary; Livestock Reports, C. L. HARLAN; Fruit Reports, J. B. SHEPARD; Research in Statistical Methods, J. A. BECKER; Field Service, C. E. GAGE; Tabulating and Computing Section, F. J. BLAIR; Price Reporting, C. F. SARLE.

The Division of Crop and Livestock Estimates is concerned almost entirely with the annual estimating and forecasting of crop production, including acreage and yield of the various crops, as well as with the estimation of the numbers and production of livestock, or, in other words, the gathering, compiling, and publishing of statistics of the annual agricultural output from year to year. Reporting of farm stocks and prices is also an important part of the work.

The research problems involved are largely of a technical nature. They have to do with the application of practically every phase of statistical science to estimating and forecasting.

The economic importance of the basic data gathered by this division to any program of agricultural adjustment is now realized. The demands for information by individual producers, State extension workers, producers' cooperative associations, and other agencies dealing with agricultural production have increased greatly during the past few years. Many of the demands can not be met, due to the inability of the division, with its limited staff of workers, to expand its activities.

Thirty-nine field offices are now maintained by the division, each in charge of an experienced statistician. In most of the cotton States, as well as in the more important Northern States, an assistant statistician has been appointed. The total personnel of the division now approximates 230 persons, of whom 100 are in Washington and the remainder in the field offices.

### VOLUME OF REPORTS

More than 400 different kinds of schedules were mailed out during the past year, the total number of schedules sent out exceeding 8,000,000. The various lists of correspondents in the Washington and field offices now exceed 300,000, and these lists are being constantly augmented. A new list has been developed during the past year for the special use of other economic

divisions of the bureau in obtaining information concerning the cost of production, farm income, population movement, finance, land valuation, etc.

### COOPERATION WITH STATE AGENCIES

One of the outstanding features of the work has been the close cooperation which has been effected with many State departments of agriculture, which formerly gathered agricultural statistics independently of the Federal Government. In every State but one, where there is a State agency charged with the gathering of agricultural statistics, the work has been combined with that of the Federal Government, thus avoiding duplication and confusion and increasing the volume and accuracy of the statistics gathered. Cooperative agreements are now in effect in 29 States, three of these being with the agricultural college instead of the State department of agriculture—that is, in Alabama, Indiana, and South Dakota.

### COOPERATION WITH CENSUS BUREAU

For nearly four months practically the entire field force of the division was placed at the disposal of the Census Bureau in the taking of the quinquennial census of agriculture for 1924. Thirty-eight of the State agricultural statisticians acted as census supervisors for a large district in their respective States. Although the current work of the division suffered to some extent, the importance of obtaining an accurate census was felt to be of paramount importance. Some assistance was also rendered the census office in Washington in the editing of schedules prior to tabulation. All of the prices which will be used in estimating values for this census were furnished by this division.

### NEW METHODS OF ESTIMATING ACREAGE

The past year has witnessed the virtual abolishment of percentage or opinion method of obtaining information concerning acreage and numbers of livestock, and the substitution of estimates based on sample data. In other words, instead of asking the reporters to give their opinion as to the change in acreage from year to year, a large number of farmers in every locality are now asked from time to time to give actual facts as to the acreage in various crops and numbers of livestock on their own farms. Careful studies have been made to deter-



mine the number of farms that are necessary to give an accurate picture of each area, in order that a truly representative sample may be obtained.

In the fall of 1924, 750,000 acreage cards were distributed through the rural carriers to the farmers throughout the United States, on which they were asked to record the acres in their farms, the acres in various crops, pasture, etc. These returns were tabulated, and the ratio of the acreage in each crop to the total acres in the farm and to total acres in crops determined. A similar survey will be made each September, the results of which will be available for the December revisions.

For use in making the preliminary spring estimates of acreage planted the Washington office obtained sample data as early as 1914, and a number of the field offices have used this type of inquiry on important crops since about 1917. In 1925 this type of inquiry was made general for the first time in both the Washington and field offices, and a large number of inquiries were mailed out in the spring. The returns have been so satisfactory that this method will be used hereafter as one of the chief sources of information in estimating the acreage in spring crops.

**Field count methods.**—Increasing use is being made of mechanical means for estimating acreage, which are entirely independent of other sources of information. This method is commonly called the "field count" method. It consists of counting, from the railroad or automobile, the number of fields in each kind of crop along selected routes from year to year and comparing the number of fields so counted. This has been somewhat refined by the use of the "pole count" method, which consists of the counting of telegraph and telephone poles opposite each kind of crop along roads. This method has been found extremely useful in the prairie States, where the land is level and railroads and automobile roads run through the croppled area.

A still further refinement of the foregoing method has been developed during the past two years by the invention of a "crop meter" for attaching to an automobile. The crop meter has, in addition to the regular mileage record of the ordinary speedometer, a series of 12 dials with push buttons, one for each crop, which records the number of feet of each kind of crop growing along the roads

traveled. Roads are selected which are typical of the entire State and the measurements will be made from year to year and the change in numbers of feet in each kind of crop determined for each locality.

#### SEMI-MONTHLY COTTON REPORTS

The year just closed witnessed the inauguration of semi-monthly cotton crop reports. Considerable objection to these reports developed during the past year on the part of some members of the cotton trade on the ground that the frequent reports disturbed the market. On the other hand, representatives of producers' associations were of the opinion that the more frequent reports were valuable and useful in view of the rapid changes which frequently occur in the condition of the crop in the periods between reports when they were issued only once a month. The position taken by the crop-reporting board is that no final decision can be reached with respect to the value or lack of value of these more frequent reports until they have been given a thorough trial. As semi-monthly reports are specifically provided for by law, any change in the number or time of issuance will have to be a matter of legislation.

#### SPECIAL LIVESTOCK REPORTS

The special livestock reporting service is producing practical results. The semi-annual hog surveys, from which forecasts of probable marketings the following season, and reports on intention to breed, are made, have been the most outstanding feature of the work thus far. These reports are now looked upon as a reliable indication of the future hog supply. The forecasts of the spring and fall supplies of pigs have proved to be very accurate, and when they are more generally understood by producers should exert an important influence on the number of sows bred from year to year, and should aid in preventing unprofitable swings in hog production. The fifth semi-annual report was issued on June 25 of this year. The report issued on July 1, a year ago, which forecast a decrease in the supply of hogs in the spring and summer of 1925, is credited by some as being one of the principal causes of the rather rapid rise in hog prices last summer in the face of unusually heavy receipts.

The survey method of obtaining livestock information has proved so accurate in the forecasting of hog

production that it is now being extended to other classes of livestock, namely, sheep, dairy cattle, beef cattle, and poultry, and it is expected that these surveys will make possible accurate forecasts of the probable marketings of lambs and beef cattle, as well as the number of dairy cattle on farms for one or two years in advance. Information is also gathered, on these surveys of the supplies of livestock by age and sex classification on farms. The splendid cooperation of the Post Office Department, through its rural carrier service, has opened a source of information that it would be practically impossible to use in any other way, except at heavy expense.

#### INTENTION TO PLANT REPORTS

The intention to plant reports, which were begun in the spring of 1923, have now become a regular part of the division's work. The report for the fall-sown crops is issued about August 15 and for the spring-sown crops about March 15. They are attracting a great deal of attention, and as they become better understood should assist materially in the adjustment of acreage by preventing the overplanting or underplanting of certain crops.

#### FARM PRICES

The farm prices of crops as of December 1 each year have been collected since 1866, and livestock values as of January 1, since 1867. In January, 1908, the department began to obtain the prices of farm crops monthly, and by 1910 most of the important crops, livestock, and livestock products were included in monthly inquiries. A few additional farm products have been added from time to time until the present list contains some 65 to 70 items, depending on the season of the year.

In March, 1925, the date of the release of the farm price reports was advanced so that they are now issued on or about the 25th of the month to which they relate. This action was taken in response to the urgent demand on the part of economists and business men for the price data at the earliest possible date. Since April 1 it has been possible to publish in *The Agricultural Situation* the farm prices and farm price index numbers a month earlier than formerly.

In March, 1925, the estimated value of farm products was published for the first time on the basis of an annual or

crop year, with weighted farm price rather than the December 1 and January 1 farm values. The annual price is determined by weighting the monthly price by estimated monthly marketings. This is a marked improvement over using prices as of a certain fixed date each year.

In addition to the regular price work as outlined above the division undertook to obtain the census values of farm products for the Census Bureau to use in the quinquennial census now being tabulated. Both crops and livestock values were included on the basis of crop districts. A crop-district price makes county values of production far more reliable than would a general average State price. The prices for 53 separate items were determined. If these same values and price questions had been included on the regular census schedule, it would have increased its size by one-half and undoubtedly would have increased the cost of the census by at least \$500,000.

#### DIVISION OF COTTON MARKETING

ARTHUR W. PALMER, *in charge*

Preparation and Distribution of Official Cotton Standards, H. C. SLADE; Classification of Cotton, H. C. SLADE; Enforcement of United States Cotton Futures Act and United States Cotton Standards Act, C. L. FINCH; Future and Spot Market Quotations, A. M. AGELASTO; Cotton Testing, H. H. WILLIS, E. E. CHANDLER; Demonstration of Cotton Standards, GEORGE BUTTERWORTH, W. I. HOLT; Research in Cotton Marketing, A. B. COX, B. B. SMITH; Cotton Handling Investigations, H. T. CROSBY; Standardization of Cottonseed and Cottonseed Products, G. S. MELOY.

#### UNIVERSAL STANDARDS FOR COTTON

The establishment of cotton standards which will give the producers, trade, and spinners a common language and a basis of trading, has been one of the major undertakings of the bureau for the past decade. In recent years it has been realized that only by world-wide agreement could the full benefits of this program be realized, while without such agreement there was even little possibility of making effective progress in our own country. In order to secure the adoption of uniform standards for cotton throughout the world a series of conferences was started in Washington during the summer of 1923 between representatives of the Department of Agriculture and of the leading cotton exchanges of Europe which resulted in

the adoption for use abroad of universal standards for grades and colors of American upland cotton.

Numerous conferences have been necessary in order that the standards in force might be modified so as to meet fully the requirements of all parties interested, and that the rules and regulations adopted should be satisfactory to all parties to the agreements. These conferences covered a period of two years and culminated in a meeting held in London May 20, 1925, when a number of amendments to the agreements were adopted with the unanimous approval of the representatives of all the principal cotton associations of Europe. It is believed that all points at issue have been disposed of to the satisfaction of all parties.

In order to assist in establishing the standards in the foreign markets an expert technician familiar with the universal standards has been detailed to this work. His duties are to keep in touch with the holders of the practical forms of the standards, to demonstrate their use, and to answer inquiries concerning them. In this way it has been possible to correct misapprehensions which are detrimental to confidence in the standards. This representative has not only been able to satisfy the trade as to the correctness of the copies of the standards but has also served as a point of contact through which the trade of Europe could readily express its views to this bureau.

#### INCREASED DEMAND FOR COPIES OF STANDARDS

During the year 7,438 boxes of grades and colors and 1,907 staple types were distributed. This represents a substantial increase over the fiscal year 1924. The domestic price of the boxes of grade and color is \$5 each and that of the staple types \$1 each, both prices being f. o. b. Washington. It was decided during the year to make the prices on those sold to parties outside of the United States landed at destination in order to facilitate distribution. Under this plan the grade standards sell for \$6.25 and the staple standards for \$1.25.

Mention should be made of the issuance of practical forms of the standard of  $\frac{1}{8}$  inch staple length on September 18, 1924; the discontinuance of the standards for sea island cotton on January 22, 1925, owing to the failure of the sea island crop, and

the revision of the standards for grade and color for American Egyptian cotton on July 26, 1924.

Numerous demonstrations of the standards have been made to advantage throughout the year. Classing schools were conducted in cooperation with the Oklahoma Agricultural and Mechanical College, at Stillwater, Okla.; the North Carolina State College of Agriculture and Engineering, at Raleigh, N. C.; Clemson Agricultural College, at Clemson College, S. C.; and the American Cotton Growers' Exchange, at Memphis, Tenn.

#### CLASSIFICATION OF COTTON

In accordance with the United States cotton futures act, all cotton intended for delivery on future contracts is classified by officers of the bureau.

Records were established during the year for total number of annual classifications, classifications handled within a single month, reviews disposed of, and total transfers supervised. The total number of bales classed in the regular and preliminary work amounted to 481,132 for the fiscal year 1925, compared with 288,148 in 1924. A record for classification within one month by a single board was established by the New York board in October, 1924, the figures being 151,379 bales. The prior record was 129,815 bales handled by this same board in December, 1923. The New Orleans board showed the greatest increase in total bales handled during the year. The number of bales originally classified by the latter board during the year was 237,258. This exceeds by 15,034 bales the combined total of the three preceding years. The aggregate reviews for the year were 102,606, as compared with a total of 114,062 for the four previous years combined. The transfer from New Orleans to New York for the year amounted to 65,339 bales, as compared with 3,855 for the previous year, and a total of only 44,896 for the combined five years previous to 1924. In addition to the regular work of the division outlined above, the special committee, appointed by the Secretary to reexamine the certificated stock in New York, reclassified 80,618 bales without the request of certificate holders.

The classification work continued to be self-supporting, and it was found possible to reduce the fee charged for reviews from 30 cents to 20 cents per bale. The volume of cotton classi-

fied since the beginning of the work in 1919 reached 1,629,117 bales on June 30, 1925.

The establishment of a cotton department by the Chicago Board of Trade for trading in contracts for the future delivery of cotton, the delivery points being Houston and Galveston, necessitated the opening of offices in these cities.

#### CLASSIFICATION OF SPOT COTTON

Section 4 of the United States cotton standards act, which became effective August 1, 1923, provides that any person who has custody of or a financial interest in any cotton may submit the same to the department for classification. The board of cotton examiners at New York and New Orleans which classify cotton tendered for future delivery were designated to perform this service also, and the board previously established in Washington for the purpose continued to hear appeals. Three types of services are offered under this authority, viz, a sample classification, covered by a Form A memorandum; an arbitration classification of the samples of cotton in dispute, stipulated by the parties to be authentic samples, covered by a Form B certificate; and a classification of cotton submitted in the bale and sampled under supervision, covered by a Form C certificate for delivery on futures contracts. During the year, under this provision of the act, 4,441 samples of cotton were classified by the board of cotton examiners at New York and 2,953 samples by the board at New Orleans, all on requests for Form A memoranda. A recent development of this work is the granting of the application of the Savannah Cotton Exchange for the supervision of cotton submitted for classification on requests for Form C certificate.

#### COOPERATION IN ENFORCING LAW

In enforcing the mandatory provisions of the cotton futures act and the cotton standards act and the regulations under these two statutes every effort has been made to prevent infractions of the law through cooperation with the cotton interests.

The Chicago Board of Trade in the fall of 1924 requested that it be permitted to file with the department for criticism and suggestions a draft of proposed rules relating to cotton transactions. Accordingly a study was made of these proposed rules in view of the requirements of the cotton futures act. Such modifications as it

was found necessary to make were incorporated by the exchange in the final draft of the rules. Various organizations and individuals have repeatedly sought advice on questions involving the applications of one or the other of these acts. In every case the department's interpretation of the law on the matter presented was accepted.

#### REEXAMINATION OF CERTIFIED COTTON IN NEW YORK

Doubtless the outstanding development in this project was the decision of the Secretary to reexamine the certified cotton in the port of New York. The large stocks which had accumulated there as a result of the heavy October tenders and transfers from New Orleans were not promptly merchandised. It was variously claimed that their continuance in New York exercised a depressing effect upon quotations and that the cause of the failure of this cotton to move further in the channels of trade was due to its inferior quality. The question assumed proportions which seemed to call for extraordinary action, first because of the effect which uncertainty on the point was considered to have upon the entire price structure, and second, because the accuracy of the work of the divisions' classers was placed in doubt.

The Secretary therefore determined to exercise the right reserved to himself in section 6 of regulation 7 of his regulations under the United States cotton futures act, and to reissue any certificates for which he might find good cause. The department committee reclassified 117,373 bales with special attention to length of staple, and found but 2,620 bales, or 2.2 per cent to be less than seven-eighths inch in length of staple. From these results it is shown that the original work was performed with as great accuracy as is possible under the methods of classification in practice.

#### LICENSING OF CLASSERS

Authority for the licensing of cotton classers is contained in section 3 of the cotton standards act. Application for licenses were received from 47 persons and licenses have been issued to 11 of these at the close of the year. In order to pass the test the applicant must be a competent judge of cotton and have a thorough understanding of the universal standards.

The purpose of the licensing of classers is to make it possible for producers to obtain a fair classifica-

tion of their cotton by men of recognized competence. The employment of licensed classers by cooperative associations and the trade generally will encourage the full use of the universal standards wherever the trading in American cotton is carried on. Uniformity of classification and the use of a common language with respect to cotton grades and staples should go far toward the elimination of controversies and disputes and thus result in decided economies to all interests and in greater returns to the cotton producer for his products.

#### MARKET NEWS

Under the cotton price quotation service accurate quotations are secured on sales of spot cotton from as many as possible of the spot markets in the Cotton Belt. These quotations are given the widest possible publicity through published bulletins, by telephone, telegraph, and radio, and through cooperation with newspapers in the South having a combined circulation of over 1,750,000 copies. Branch offices are maintained at Charlotte, Atlanta, Houston, New Orleans, and Memphis, through which information is collected and its dissemination effected. A new feature of this work is the development of systematic reception and posting of radio quotations in the interior markets.

#### SPOT MARKET INVESTIGATIONS

Under section 8 of the United States cotton futures act the Secretary of Agriculture is authorized and directed to designate not less than five bona fide spot markets, the grade difference quotations of which are averaged for use in the settlement of future contracts negotiated on exchanges located at points that are not bona fide spot markets, when grades other than Middlings are delivered. Ten such markets have been designated, viz, Norfolk, Va.; Augusta, Ga.; Savannah, Ga.; Montgomery, Ala.; Memphis, Tenn.; New Orleans, La.; Little Rock, Ark.; Dallas, Tex.; Houston, Tex.; and Galveston, Tex.

Constant supervision of the different quotations of these markets is required in order that it may be assured that their quotations accurately reflect the commercial value of spot cotton of tenderable grades, since the prices at which future contracts are made are promptly affected by any disparities between actual and quoted values of spot cotton above or below Middling.

#### COTTON MARKETING STUDIED

The marketing research work has been devoted to three lines of endeavor. The first is the comprehensive study of the underlying economic laws operative in the growing of the crop and its marketing and consumption in this country and abroad. The second phase of the work is the investigation of the methods and practices in primary markets. This investigation was made in cooperation with the Texas Agricultural and Mechanical College. The third phase of the work is carried on in cooperation with the division of statistical and historical research. Analytical studies have been initiated within the past year showing the statistical relationship between the various factors controlling supply, demand, and price of cotton. Attention has been given also to evaluating the relative significance of the numerous types of statistical information utilized by those engaged in cotton production and marketing. Some of the analytical studies which are now in progress are in detail:

Relationship of price during winter to subsequent acreage.

The relation of winter weather conditions to subsequent yield.

The relation of price to (a) production, (b) carry over, (c) price level, (d) cotton movement, (e) consumption, (f) exports, (g) foreign exchange rates.

#### COTTON HANDLING INVESTIGATIONS

Improvement in the methods or practices in handling cotton between the field and the mill has been one of the major undertakings of the division since its establishment. During the past year the division has undertaken to focus the attention of the whole cotton industry on the magnitude of the annual loss due primarily to obsolete trade practices and careless handling. The assistance of the trade, the cotton producers, and the manufacturers in attacking this problem was assured in an open meeting held at Washington on February 24. Those present volunteered their full cooperation in studies to be made of tare irregularity, gin damage, and means of bale identification.

A thorough investigation of the tare situation brought out the fact that the irregularity in the weight and quality of the bagging used on the American crop causes an annual loss of over \$6,000,000 freight, insurance, overtaring, and patching costs. In addition

to the loss in dollars and cents every marketing transaction is complicated by the irregularity in the weight of tare. As a result of negotiation during the past few months the bagging manufacturers have agreed to accept 2 pounds per yard bagging and 1½-pound ties as the standard and to manufacture only standard-weight materials for stock. The use of 6 yards of 2-pound bagging and 6½-pound ties was adopted as the standard gin tare. It is hoped that with the cooperation of the American Cotton Shippers Association and the trade generally the practice may be adopted of placing a standard light-weight patch on either side of the bale at the time of compression. With the adoption of this latter practice the process of standardizing tare will be well under way.

#### SPINNING TESTS OF COTTON

Tests have been made during the year of new varieties of cotton which are developed in the Bureau of Plant Industry, of the new official grades which became effective August 1, 1924, and of cotton subjected to various treatments. Spinning tests have also been made on smooth-seeded Pima cotton; five leading varieties of cotton grown in northeastern Texas; three strains of Acala cotton grown at Shafter, Calif.; broad-leaf Acala; okra-leaf Acala; Pima grown at Shafter, Calif.; and Acala and Pima cotton grown at Sacaton, Ariz.

Laboratory tests were conducted in Washington to determine the strength of individual fibers and the percentage of moisture in cotton at various stages of manufacture in connection with the spinning tests. Other laboratory tests were made to determine the strength of the yarn spun from the different cottons. The spinning tests were conducted during the past fiscal year at the Clemson Agricultural College, Clemson College, S. C.

The 100s yard spun from smooth-seeded Pima, while slightly less strong than that from bulk Pima, equalled the new Draper standard, and in case of 120s fell but slightly below the standard. Any yarn that equals or approximates this standard is considered exceptionally strong.

The results of the spinning tests of five leading varieties of Texas cotton and a lot known as "Hoground" showed these cottons to rank as follows: (1) Acala, (2) Lone Star, (3) Mebane, (4) Kasch, (5) Rowden, (6) "Hoground."

The spinning work of the several strains of Acala and Pima from California and Arizona has been completed, and the data are being compiled for office and field station information. Several articles have been prepared for textile journals during the year on the results of the several spinning tests. Various other tests were conducted, usually in response to a need for specific information in regard to conditions in a particular locality. Numerous letters from cotton producers and spinners have been received with requests for the solution of problems which they have met, and assistance is being given wherever possible. Among the tests now under way is one of Egyptian cotton grown from Pima seed, which is being made at the request of the Department of Commerce.

Technical studies were made during the year of the character of fibers and the possibility of measuring mechanically the three qualities—length, strength, and brightness. The value of this work lies in its utility as a means for the more exact preparation of the standards which are distributed for the use of the trade. It is believed that as a result of the progress made in the photometric measurement of brightness the grades can now be given a numerical expression in terms of reproducible objects. The development of a means whereby length and strength of fibers can be measured readily will be of great importance in safeguarding the accuracy and comparability of standards of staple lengths and in establishing standards for staple character. Many of the tests were made in cooperation with the Bureau of Standards.

#### STANDARDIZATION OF COTTONSEED AND COTTONSEED PRODUCTS

In response to requests made from time to time studies were undertaken within the year to develop standard grades for linters and cottonseed. It has been found possible to divide the range of linters into seven groups or grades, each group containing the variation usually found in a bale of linters prepared under careful management and not greater than the variation acceptable to consumers. These seven grades have been exhibited and explained at numerous public hearings and have met with the approval of the trade. The Secretary's order officially promulgating the standards for linters was signed July 7, 1925, and in accordance with its terms the standards will become effective August 1, 1926.

In the sale of cottonseed, under the present rules of trade, moisture content, foreign matter content, and soundness of seed are used as a basis of grading. It has been found, however, that the consensus of opinion of the oil mills is that the oil content of the seed is the prime factor and the considerations named above of secondary consideration. Several studies have been made in an effort to discover what physical characteristics, if any, may be correlated with oil content so that grading may be done on the basis of such characteristics. Preliminary experiments indicate a possible relation between density and oil content. It is hoped that this problem can be worked out within the ensuing year.

## DIVISION OF FRUITS AND VEGETABLES

WELLS A. SHERMAN, *in charge*

Market News Service, EDWIN W. STILLWELL; Inspection Service, F. G. ROBB; Grades and Standards, H. W. SAMSON; Standard Containers, H. A. SPILMAN; Research Studies, H. W. SAMSON.

The Fruit and Vegetable Division is composed of those activities within the bureau which are designed to aid in bringing about better marketing of fruits and vegetables in the United States, chiefly by four methods:

(1) By a better system of standardization. This means the introduction of definite grades as the basis of the wholesale trade in these perishables. Standardization is accomplished by determining the dividing lines between qualities which will separate a fruit or vegetable into distinct grades. These grades should represent different market values. They must also provide for the entire crop, as ordinarily grown. As a basis of trade such grades supply a uniform language for the industry and result in better understandings and fewer disputes between shippers and receivers. They also furnish the only uniform and intelligible basis for price quotations, either at point of origin or at the markets.

(2) By gathering and distributing every kind of pertinent information to aid in the intelligent distribution and profitable disposition of our enormous carlot movement of fruits and vegetables. Market news services include complete daily records of shipments by commodities received by telegram from every originating carrier, reports of arrivals at all principal markets, cars unloaded daily in these markets,

passings at certain important gateways, and much information on diversions from strategic points. This is followed by reports of prices prevailing in typical producing centers and principal markets on most fruits and vegetables, segregated by varieties, types of packages, and States of origin. All of this information is given the widest possible publicity. Every modern means of communication and publication is used.

(3) Through an inspection service which gives effect to the standardization program and brings its meaning and benefit home to the producer by applying the standard at his shipping point. It also protects his interest in the terminal markets by putting within his reach a disinterested certificate of the facts as to the condition and quality of his shipment on arrival. Inspection is furnished on request and for a fee. The service is largely self-supporting and is a direct commercial aid in marketing a specific shipment or in consummating a specific transaction. Trained men are available to examine carefully typical samples of the goods and certify to their quality and condition, usually in terms of established grades. These certificates are the basis of a large and steadily growing volume of business. A quotation on goods "Government certificate attached" inspires confidence. An official certificate of condition may be the best basis for a loss or damage claim against a carrier. It may often be the only acceptable basis for pooling shipments, handled through a single agency.

(4) By continuous study of critical phases of the business as they develop under the changing conditions of production and demand. The relationships existing through the industry are studied with a view to suggesting aids, safeguards, and remedies.

### MARKET NEWS SERVICE ON FRUITS AND VEGETABLES (INCLUDING PEANUTS AND HONEY)

Although funds available for carrying on the market news service were the same as during the preceding fiscal year, it has been possible to increase the scope and value of the work by emphasizing certain features. The total number of mimeographed market reports distributed during the year was approximately 10,900,000, an increase of 27 per cent over last year. Much wider use of the press and radio in the dissemination of market information, increased efforts to place economic facts before growers and the

trade in popular form through reviews and summaries, and a general strengthening and tightening of all lines of work indicate definite progress in the market news service.

Local papers in three-fourths of the cities in which the market stations are located publish in full prices on the local market. In addition, in many places shipments and information from other markets are published for the benefit, primarily, of rural readers. Contacts with press associations have been developed and strengthened. For example, from Chicago a special report covering prices and market conditions on southern products is sent on Associated Press wires to 84 papers throughout the South, and a similar report on Michigan products to 28 papers in that State. Press association wires out of Denver and San Francisco carry comprehensive reports on market prices and conditions of interest and value to readers of papers throughout the West. Texas press wires carry reports from Austin and Fort Worth to State papers. The Southeast is served from Atlanta. Philadelphia serves as a distributing point for the Middle Atlantic States, and there are special services from other points.

Very comprehensive radio programs are being built up in many places. Daily reports are sent out from many points and a growing demand for the bureau material is developing. Radio telegraph is used to transmit information to field stations at Laredo, Tex., and Rochester, N. Y. Austin is the relay point for the former and Washington for the latter. Local reviews or modifications of the weekly market review issued at Washington also are broadcast from a number of large stations.

Reviews and statistical summaries of field deals, receipts at markets, price trends, etc., are bringing many commendations. Requests for these reviews and summaries are being received in increasing numbers from educational institutions, research bureaus, cooperative organizations, transportation officials, farm advisory groups, members of the trade, growers, and others. Weekly and monthly reviews seem to be especially well adapted to growers' needs.

#### PRODUCTS INCLUDED IN MARKET NEWS SERVICE

Telegraphic shipment reports from the carriers at present include 34 products, and complete market reports are

issued on 25 of these products. Daily shipment information is published on the remaining products.

#### COOPERATION OF TRANSPORTATION LINES

The volume of carload shipments reported by this bureau has increased each year as methods of handling have become improved and systematized. Arrangements for receiving the daily telegraphic reports from one general operating officer on each line, rather than from each division superintendent, are practically completed. By this arrangement approximately \$10,000 is saved each year through the reduction in tolls paid for commercial telegrams. It has been found that the reports in many instances are coming more promptly than before and are generally more accurate. The growing interest of the railroad officials and agents in these reports is evidenced by the large and increasing number of requests made by them for tabulations of shipment information.

#### MARKET STATIONS OPERATED

During the calendar year 1924, 17 branch offices or market stations were operated. The combined mailing lists at these offices and Washington totaled 41,495 names, an increase of 2,760 over the preceding year. A total of 8,130,980 reports were issued from these stations. In addition, 37 temporary field stations were operated in as many producing sections. These offices distributed more than 2,728,000 mimeographed market reports to 28,360 persons on the mailing lists. Reports on 18 crops were issued and service was given in 24 States.

#### MARKET REPORTS ON PEANUTS

The market news service on peanuts has been maintained effectively during the year. Quotations have been received covering prices paid for farmers' grade stock and selling prices for shelled and unshelled peanuts, peanut oil, and at times peanut meal or cake.

Weekly telegrams have been received from bureau representatives in 13 important markets. These reports include carlot arrivals, market conditions, and prices. Market conditions and prices of Oriental peanuts, f. o. b. Pacific coast points, and the weekly importations of peanuts and peanut oil at San Francisco and Seattle also are obtained. The entire mailing list of about 1,070 names is served with



these weekly market reports from Washington.

#### MARKET REPORTS ON HONEY AND BEESWAX

At present about 140 large beekeepers and honey shippers, scattered throughout the country, furnish reports of market prices, conditions of colonies, and honey plants, etc., that are combined for publication in the honey bulletin. Four times a year reports from thousands of beekeepers dealing with yield, condition of bees, etc., are tabulated and published.

Bureau representatives in Boston, New York, Philadelphia, Chicago, Minneapolis, Kansas City, St. Louis, Denver, and San Francisco also wire semimonthly reports of the market conditions and prices of extracted and comb honey and beeswax in their respective cities and import and export statistics are obtained. Honey market reports are issued twice a month from Washington to a mailing list of about 2,400 names.

#### UNLOAD REPORTS FROM PRINCIPAL MARKETS

Daily reports of the unloads of the following products are obtained in the leading terminal markets: Apples, cabbage, cantaloupes, celery, grapes, grapefruit, lemons, lettuce, onions, oranges, peaches, strawberries, sweet potatoes, tomatoes, watermelons, and potatoes. These reports of unloads of carlot shipments are obtained each day from the railroads and express companies in the several market centers. Similar reports are received from important boat lines. In some cases figures also are obtained regarding less-than-carlot receipts and estimates have been made of fruits and vegetables trucked into a few cities.

The data are of great value because they show the monthly and the annual receipts of various products in large consuming centers as well as the sources of supply. When compared with wholesale prices they are an index of the capacity of these cities to absorb fruits and vegetables with a return of reasonable profit to the producer. The market station representatives who originally collect these data prepare press releases or mimeographed statements for local distribution.

#### BULLETINS, REVIEWS, AND SPECIAL REPORTS

Two important bulletins on shipments were issued—Statistical Bulletin No. 8, which covers carlot ship-

ments of fruits and melons, and Statistical Bulletin No. 9, giving similar data on vegetables. The figures cover four years, 1920 to 1923, inclusive, and show the annual movement by States, counties, and leading shipping stations. Separate tabulations are included for 35 products.

Current tabulations of market prices and conditions for all the leading markets and shipping points are maintained, and special reviews based largely on these statistics are prepared for publication in Crops and Markets for use in statistical bulletins and in answering inquiries for information.

A number of special reports are prepared with a view to giving information in the most usable form to all classes of users. The Weekly Market Review of Fruits and Vegetables analyzes and compares the market movement and prices of the week. The Weekly Summary of Carlot Shipments summarizes in comparative columns the carlot shipments of principal fruits and vegetables as reported telegraphically by the carriers each day. The Monthly Market Review follows the general plan of the Weekly Market Review. The fruit and vegetable section of the weekly Marketgrams shows the latest developments of the preceding seven-day period and describes important changes in market prices and conditions. The weekly and monthly issues of the department's paper Crops and Markets contains several pages of material relating to fruits and vegetables.

#### RECEIVING-POINT INSPECTIONS

The outstanding feature in connection with receiving-point inspection work during the year was the large increase in peanut inspections, 1,629 cars having been inspected in comparison with 252 during the previous year. This increase was due to two causes: (1) A very unfavorable harvesting season caused a large amount of damage from mold and decay. Such defects are of vital importance to the receiving trade. (2) The members of the Southeastern Peanut Growers' Association have made allowances on the basis of United States grades and inspection.

Inspections of fruits and vegetables were made in 226 terminal markets. Branch offices were located in only 32 cities, inspections at the other points having been made by the inspectors nearest these points. During the year 32,334 inspections were made at terminal markets. This was an increase of

3,051 over the preceding year. In addition, 45,824,180 pounds of fruits and vegetables were inspected for the Navy and the Marine Corps; 1,174,221 pounds for the Munson Lines; 5,989,281 pounds for the United States lines, and lesser quantities for other interests. Many thousands of pounds were rejected on the basis of this inspection; and in other cases the price was adjusted, thus effecting a substantial saving for the Federal Government.

#### SHIPPING-POINT INSPECTIONS

One of the outstanding services rendered by cooperative Federal-State inspection organizations was the inspection of the citrus shipments of the Florida Citrus Exchange during the first six weeks of the shipping season for the purpose of keeping up the maturity standards and for sales purposes. During the past season the inspection service made maturity tests which enabled the exchange to prevent the shipment of immature fruit and the consequent injury to the market. A total of 6,056 cars of citrus fruit was inspected in this State during the year.

During the winter months approximately 2,500 cars of lettuce were inspected in Imperial Valley. The season was a poor one, but the continued use of the service, notwithstanding the small percentage of cars certified U. S. No. 1 is an indication of an increasing demand on the part of buyers for Government-certified cars. Many shippers are finding that they can sell cars which are slightly under grade at only a small reduction if they support their statements of the quality by the Government certificate.

Cooperative agreements were made with the following States which had not previously worked with the Federal department in shipping-point inspection service: Maryland, Michigan, and Oklahoma. Shipping-point inspection agreements with Alabama and Massachusetts were not renewed for the past year. The principal reasons for not renewing the agreements were peculiar conditions prevailing during the onion-growing season in Massachusetts and change in methods of marketing vegetables in the Mobile section of Alabama.

Of the total of 127,500 cars inspected at shipping points, there were 257 reinspections made at receiving markets, 116 of which sustained the original inspection. All of the above

inspections were made under cooperative agreements with the various States with the exception of those in Iowa and Kansas. In these States shipping-point inspections were made as straight Federal inspections.

#### INSPECTION STIMULATES USE OF STANDARDS

The third year of shipping-point inspection service has again demonstrated that more progress can be made in obtaining the adoption of recognized standards at shipping point through an efficient inspection service than by any other means available to the department. Without exception, supervising inspectors have reported better knowledge on the part of shippers of established standards and more conscientious effort on their part to comply strictly with the best grading practices. Cooperative organizations have been greatly benefited by the inspection service because of the assistance it has rendered them in dealing fairly with their members without the embarrassment usually experienced by officers of these organizations in obtaining deliveries of uniform quality from their members. Such organizations have also made the Government inspection reports the basis for various pooling systems.

#### RESEARCH AND STANDARDIZATION WORK

This project is concerned with two main lines of endeavor: (1) The promulgation and promotion of standard grades for fruits and vegetables; (2) research dealing with important problems connected with the marketing of these products.

**Standard grades.**—During the period under consideration new grades were formulated for eggplant, spinach, grapes packed in sawdust or other material, and shelled runner peanuts. Studies leading to the establishment of grades for eastern grapes, green corn, and English walnuts have been inaugurated.

Investigations made by the project have led to revisions in the grades for cabbage, carrots, celery, citrus fruit, lettuce, northern-grown onions, and fresh tomatoes.

The existing grades for barreled apples were reissued as amendment No. 1 to Service and Regulatory Announcement No. 85. Grades for shelled white Spanish peanuts have been revised and reissued as Department Cir-

ular No. 304. Revisions are contemplated in the standards for asparagus, cauliflower, table grapes (California), juice grapes (California), strawberries, and cannery tomatoes.

Close cooperation with the inspection service has been maintained, especially in the use of standards for shipping-point inspection. In this connection the use of these Federal grades has been advanced substantially by means of grading demonstrations and conferences with growers and the trade.

**Research studies.**—Particular attention has been directed to the problems connected with the efficient handling, packing, shipping, and marketing of fruits and vegetables, in an effort to reduce heavy losses from faulty methods and to encourage the shipments of only sound, uniformly graded products. The high freight rates, the congestion at terminal markets, and increased cost of handling make it necessary that steps be taken to prevent the shipment of deteriorated and unsalable products. Greater care should be given at the shipping point to such questions as the proper degree of maturity at which to ship, the proper methods of packing and handling to insure against loss, and to the sorting out and keeping at the farm the culls and other low-grade products which demoralize the market, decrease the net return for the whole shipment, and result in waste and loss.

During the year the following bulletins were issued: Department Bulletin No. 1242, Marketing Cabbage; Farmers' Bulletin No. 1423, Preparation of Cabbage for Market; and Department Bulletin No. 1325, Marketing Onions.

A bulletin, Packing Apples in Boxes, is now in press. Manuscripts are being prepared on Marketing Northwestern Boxed Apples, Marketing Barreled Apples, and Marketing Tomatoes. A manuscript on Marketing Lettuce is completed and ready for review.

Preliminary studies have been made of the handling of citrus fruits, western grapes, eastern grapes, cannery tomatoes, and miscellaneous vegetables to obtain information to be used in the preparation of bulletins dealing with the marketing of these products.

Work has been completed on a bulletin on Fruit and Vegetable Auction Companies, outlining the services performed and the methods and costs of marketing through these agencies.

Lectures have been given, articles prepared for trade journals, and mate-

rial prepared for extension activities covering marketing methods. Greater interest and cooperation in this work is being shown than ever before and marked improvements in marketing methods and practices are observed.

**Foreign market studies.**—A representative is being maintained in Europe for the purpose of studying the marketing of fruits and vegetables, peanuts, and other American farm products in European countries, with the view of improving present export methods and enlarging foreign outlets for American farm products. Investigations have been conducted and reports issued covering (1) market requirements and trade preferences for American-grown products in European markets, (2) the amount of actual and potential competition in these markets from other surplus-producing countries, (3) distribution within the importing countries, (4) relative accuracy of foreign statistics as determined by surveys of areas of production, (5) the practicability for export trade of the grades recommended by the United States Department of Agriculture as determined by studies of the grade and quality of American products arriving in foreign ports. Contacts have been developed through which governmental agencies and the foreign importing trade may be familiarized with the department's plans for the standardization and inspection of farm products.

**Miscellaneous marketing studies.**—Studies are being made of the extent and the factors involved in the development of sun-scald and slimy soft rot of potatoes in the Hastings section of Florida and in other Atlantic coast producing sections.

Analyses have been made of the distribution of various products, together with unloads of specific commodities in large receiving markets, and carlot shipments of fruits and vegetables by commodities and shipping points. Results of these analyses have been recorded in graphic form, which are very helpful to an understanding of the distribution of these products. Statistical summaries and interpretation of data gathered through the market news service have been prepared.

A study of marketing rejections of northwestern boxed apples has been continued. The data for 1922 have been compiled and reports issued to shippers contributing information to the study. Data for 1923 and 1924 seasons are being obtained and will be compiled during the next fiscal year. These studies are proving to

be helpful to producers and shippers who can not follow their shipments through to the terminal market, but must depend for their guidance upon the reports made to them of the conditions in which their products arrive, and suggestions for changes in the methods which will eliminate causes for rejection.

A study of the sizing practices of packers of barreled apples and size preferences existing among jobbers and the retail trade in several important primary markets has been completed. The results of this investigation have been embodied in a personal report to the Western New York Fruit Growers' Cooperative Packing Association.

#### ENFORCEMENT OF UNITED STATES STANDARD CONTAINER ACT

The employee in charge of this work completed a field trip to the Pacific coast in which a large number of factories and State officials were visited with regard to the enforcement of the standard container act. The October and April conventions of the National Basket and Fruit Package Manufacturers' Association were attended and discussions by the manufacturers were participated in. Conferences were held with manufacturers and with various agencies with regard to round stave baskets and other containers. A hearing before the consolidated classification committee regarding round stave baskets was attended and a trip was made to Williamson, N. Y., in order to talk with lettuce growers regarding the proposed standard lettuce crate for that State.

A trip was made to the celery sections of Michigan and New York for the purpose of obtaining information as to the sizes of crates and boxes used in shipping celery and the possibility of standardizing these containers. As a result, tentative suggestions have been put out as to standard sizes. An investigation was made also, and information collected regarding all types of crates in use in Florida, and the asparagus section of New Jersey, and the markets in Philadelphia and New York were visited in a study of the sizes of asparagus crates being used in New Jersey.

The testing work of the office has been carried forward on samples submitted by manufacturers of containers coming under the law. In addition, much work has been done on round stave baskets and other forms for

which no legal action has been taken. Manufacturers are showing an increased tendency to consult with this office in making any changes in the dimensions of baskets.

Farmers' Bulletin 1434, Standard Baskets for Fruits and Vegetables, was issued during this year. A circular entitled "Notes on Celery Containers" was prepared and sent out to interested growers. A new list of container manufacturers and jobbers was prepared and sent out in tentative form to the manufacturers for their criticism and correction. The revised list will be issued shortly.

#### COLLECTION AND DISTRIBUTION 1918 EXCESS WOOL PROFITS

WELLS A. SHERMAN, *in charge*  
W. L. EVANS, *assistant*

In the year 1918 in order to obtain the quantity of wool which was needed by the United States Government for war purposes, the handling of the domestic wool clip of that year was governed by regulations issued by the War Industries Board, which fixed the price of wool and limited the profit which might be made by dealers. The powers and functions of the wool division of the War Industries Board were transferred to this bureau by Executive order dated December 31, 1918. Since that time the domestic wool section of this bureau has obtained reports from all dealers, so far as known, comprising 178 distributing center dealers and over 5,000 country dealers.

Bureau audits show that the total excess profits made on the 1918 wool clip amounted to \$1,512,315.61. Of this amount \$754,452.97 has been collected, out of which \$449,141.56 has been placed in the hands of wool growers, \$23,312.07 having been refunded to growers during this fiscal year. Distribution to growers is suspended on \$48,887.38 because paid under protest.

The excess wool profits yet to be collected amount to \$723,418.12. Approximately 90 per cent of this amount is due from only 11 dealers, whose excess profits range from \$10,000 to \$295,000. Twenty-five of the 38 uncollected cases are pending in Federal courts. After several court decisions favorable to the Government two cases were decided against the Government. They have been appealed with a view to obtaining a Supreme Court decision as to the validity of the 1918 wool regulations.

## DIVISION OF LIVESTOCK, MEATS, AND WOOL

CHARLES V. WHALIN, *in charge*

Livestock Market News Service, E. W. BAKER; Meat and Wool Market News Service, J. A. BURGESS; Livestock Market Investigations and Market Movements, Methods, and Practices, C. A. BURMEISTER; Livestock Grade Standardization Committee, C. E. GIBBONS, D. J. SLATER, E. W. BAKER, L. B. BURK, and J. S. CAMPBELL; Purebred Livestock Market Investigations and Prices, L. B. BURK; Retail Meat Trade Investigations, Meat Grade Standardization, and Meat Grading Service, W. C. DAVIS; Market Research and Analysis, C. E. GIBBONS; Livestock Grade Demonstrations, J. K. WALLACE; Wool Market Investigations and Wool Standardization, G. T. WILKINGMYRE.

During the fiscal year 1925 the division progressed noticeably along each of its main lines of endeavor—research, demonstration, and market news. This progress consisted in strengthening, elaborating, and perfecting the service largely within the geographical limits which existed a year ago. Realizing that the first essential to either correcting bad situations or improving favorable ones is to get a clear vision of the facts involved in the case, continuous study of fundamental conditions prevailing in the livestock, meat, and wool industries has been conducted. Thirty-five market reporters were on the larger livestock, meat, and wool markets of the country throughout every trading day for the purpose of gathering current facts regarding supplies, movements, demand, and prices of these products. Special investigators have worked in local areas studying problems by gathering every available fact pertaining to them. All this information, together with related information from foreign countries, has been assembled, correlated, and analyzed, and in its entirety provides a graphic picture of the industries as a whole. From this record statisticians obtain their material for working out problems, and economists use it as the basis for their studies.

### ALL MODERN MEANS OF NEWS DISSEMINATION USED

Gathering the facts, however, is only the beginning. The next step is to make those facts available to everyone who has use for them. To accomplish this the division has used every modern means of communication. All of the leading press associations, the mails, and commercial telegraph companies daily transmit to the various

parts of the United States and to foreign countries, as well, a mass of market information. Radio has been utilized also, and practically every broadcasting station of consequence in the country broadcasts information on livestock, meat, or wool. The leased telegraph system of the bureau has been utilized to the utmost.

### DEMONSTRATION AND SERVICE WORK PROVES POPULAR

The bureau sends men into producing areas to give producers and agricultural leaders actual demonstrations of the results of its investigations and research. This applies particularly to the program of standardization of market classes and grades of livestock, meat, and wool. Intensive study has been given for several years to this subject, and the grades which have been worked out for each of these commodities are now being submitted to all branches of the industry for consideration, and it is hoped ultimate formal adoption.

Demonstrations of cattle and sheep grading have been held in practically every range State as well as at some central markets and in Virginia and West Virginia. Similar demonstrations of meat grading are conducted on a commercial scale in many large cities. Demands for meat-grading service in commercial transactions are increasing at a rapid rate. Wool-grading demonstrations are held at frequent intervals at various points in the wool-producing sections of the country. The purpose of all of these demonstrations is to carry directly to the producer and present in the most graphic way possible the essential facts gathered by extensive research and investigation.

The results of these efforts are apparent. The habit among livestock producers and shippers of shipping all their stock to one or two markets, regardless of conditions prevailing on those markets, has now virtually disappeared. The producer is kept advised regarding conditions not only at one market but at many markets. This enables him to see where his greatest opportunity for profit lies and to ship his stock to the market which offers the greatest advantage.

The dissemination of prompt and accurate market information tends to equalize prices and stabilize the market. Every market now knows what conditions prevail at every other market; consequently the price level at any given point is not likely to re-

main far out of line for any considerable time. Stocks move in response to the news of short supplies and high prices, and the high points are leveled off and the low points quickly filled in. When a surplus is threatened on the Atlantic seaboard, shipments are curtailed or stopped off at middle western points, and production and demand are brought into balance.

#### RESEARCH AND INVESTIGATIONS

Research is the foundation of service and demonstrations. It serves to bring to light the essential facts needed to solve marketing problems. Although the bureau endeavors to follow a general program which has for its object the study of national problems, it has many calls for the study of problems confined to more limited areas. The research activities include the development of grade standards with standard nomenclature for livestock, meats, and wool, the collection, compilation, and analysis of statistics relating to supplies, movements, prices, and consumption of and demand for these products, and the study of the methods and practices followed in marketing and distributing them.

#### STANDARD GRADES FOR LIVESTOCK

A standard grade classification for livestock has been used by the bureau since it started its market-reporting service in 1918. During the past seven years it has been subjected to the most complete tests for market-reporting purposes throughout the country and has been refined and modified where needed. It is believed that the classification is now complete in every respect.

At the end of the year two manuscripts have been completed. One is a department bulletin defining the classes, subclasses, and minor subdivisions of market livestock, based on age, weight, and use selections, and is to serve as an introductory bulletin or text for the more complete descriptions of the grades which are to appear in other bulletins. The other manuscript is intended as a department bulletin on the standard market classes and grades of slaughter cattle, and will contain a complete description of each grade of cattle ordinarily sold on the market for slaughter purposes.

#### CORRELATION BETWEEN LIVESTOCK AND MEAT GRADES

Grade correlation studies were carried on in a limited way in connection

with research studies of the marketing of Virginia cattle, and these were helpful in adding to the fund of information on standardization. Information on the subject also was obtained in connection with statistical studies of State origin of livestock received at Chicago. The basic principles of standardization are founded on the existence of the same qualities in identical grades of the live animal and the dressed product.

#### MEAT GRADES

In addition to being utilized in reporting meat prices the meat grades are given practical application in commercial transactions where purchases are made on the basis of specifications. Service and regulatory announcements covering the operation of the meat-grading service were prepared for publication. Department Bulletin No. 1246, Market Classes and Grades of Dressed Beef, was issued and Department Circular No. 300, Commercial Cuts of Meat, was revised and reprinted. Manuscripts for the proposed bulletins on Market Classes and Grades of Lambs, Yearlings, and Mutton and Grades of Veal Calf Carcasses have been prepared.

#### WOOL, MOHAIR, AND YARN

Research studies leading to the establishment of wool grade standards have been carried on for several years. Standards developed were promulgated by the Secretary as the official standards of the United States, effective July 1, 1923. Since that time attention has been given to the correlation of the United States grades with the grades in commercial use in the British wool trade with a view to developing standards which can be used in international trade. The work is being carried on cooperatively with the Bureau of Standards and the Associated Textile Manufacturers in this country and with a committee representing the British Wool Federation in England.

The production of mohair is an important industry in certain sections of the country, and in response to the demand on the part of producers tentative standards have been developed. Arrangements were made with the Pacific Cooperative Wool Growers' Association to grade the mohair assembled in its Portland, Oreg., warehouse according to these standards. Approximately 50,000 pounds of mohair were graded to the satisfaction of all concerned. The results have

shown that the tentative standards are practicable, and the next step will be to have them promulgated as official standards.

Preliminary work being done by the Bureau of Standards of the Department of Commerce and several of the large wool manufacturing associations in the development of standards for wool yarns and other products of wool manufacture is based largely on the standards for wool that have been developed by this bureau. During the year a number of lots of wool yarns were submitted to the bureau for examination and analysis, both for the assistance of the associations and for the Federal Specifications Board, which is drawing up specifications for the yarns used by Government departments. The analyses have involved the making of many microscopic measurements, as well as the determination of the grades by visual examination.

#### WOOL SHRINKAGE AND SCOURING INVESTIGATIONS

One of the important factors in determining the value of raw wool is the percentage of shrinkage which will result in preparing the product for the spinner. There is a wide variation in the degree of shrinkage which will result from scouring wools produced under different conditions and from different breeds of sheep. In order to have available more information on the subject, the division has installed equipment for scouring wool by the commercial soap-and-water method. Some preliminary tests have been made with excellent results. These tests were checked by one of the large scouring establishments cooperating with the bureau and found to be satisfactory.

#### STATISTICAL RESEARCH

Both the market news service and the investigational work furnish an inexhaustible supply of statistical data. These data are compiled, summarized, and analyzed for immediate publication as current information. Later they serve as a basis for long-time studies of price trends, production, consuming demand, and market movements. They have been particularly useful in preparing the annual outlook reports and the special reports released from time to time on the livestock and meat industries.

In addition to the regular market-reporting service, special statistical studies are conducted at all offices, and from Chicago, Kansas City,

Omaha, and St. Paul weekly statistical reports are issued. These reports are confined largely to movements of stocker and feeder cattle and sheep, except at Chicago, where data pertaining to comparative seasonal movements and prices of all livestock to and from leading markets, segregated in some instances by class, grade, weight, market origin, and State destination, are assembled and published. This information serves as a basis in forecasting future supplies and enables the producer to plan his operations more intelligently and market agencies to render better service.

A number of special statistical studies were made, the results of which were published as special reports and reviews and also used in Yearbook articles. Among these were the following:

- Livestock Market Review for 1924.
- Study of receipts and prices of horses and mules at central markets, incorporated in an article on "Horses and mules."
- Outlook reports on cattle, hogs, and sheep for annual agricultural outlook report for 1925.
- Special report on sheep situation incorporated in press article entitled "Should a cattleman switch to sheep?"
- Special mimeographed report entitled "The price of wool and the demand for woolen clothing."
- Economic Review of the Livestock Industry in the Western Range States with Special Reference to the Range Program.

#### MARKETING METHODS AND PRACTICES STUDIED

The study of the methods and practices of marketing livestock, meats, and wool is one of the major research activities of the bureau. There is a great demand for information on this subject, as methods and practices vary in different sections and are subject to change as producers and distributors endeavor to reduce costs and increase efficiency in marketing.

A detailed study of all the problems involved in both production and marketing of beef cattle in southwest Virginia was carried on during the current year in cooperation with the Virginia State Experiment Station. The study included the development of the cattle industry in Virginia, present methods, practices, and costs involved in production and marketing, and the extent to which the beef produced met trade and consumer demands. Complete data were obtained on 52 shipments of steers finished in southwest Virginia and followed through the market, slaughterhouse, and wholesale cooler. Data also were

obtained on 17 shipments of fed steers from northern Virginia and the Shenandoah Valley. Complete records were obtained on the methods of handling and feeding these cattle for market. After arrival at market data were obtained on methods of handling, shrinkage, fill, market and shipping costs, dressing percentage, selling price, and grade, both in the live animal and the dressed product. Special attention was given to the quality of the beef produced and its comparison with beef from other sections in meeting trade demands. In cooperation with the Bureau of Home Economics tests were made to determine the cooking and eating qualities of Virginia beef in comparison with other beef.

A survey of livestock marketing methods and problems also was made in five of the Corn Belt States. Special attention was given to cooperative livestock marketing, including local shipping associations and cooperative selling agencies at the central markets and to direct shipping of hogs to packers.

A nation-wide study of the methods and practices of retailing meats was carried on during the year as part of a general study of retail meat distribution and its problems. Field studies were made in 20 cities and towns located in all sections of the country and included 1,404 retail stores handling meats. Two preliminary reports summarizing the results of this study were released as mimeographed documents, entitled "Influences of Methods and Costs of Retailing and Consumers' Habits upon the Market for Meat." Studies in connection with requirements of English bacon trade were made at several packing centers to determine the probability of increasing demand in England for Wiltshires and other English cuts.

#### PRICES OF PUREBRED STOCK

A survey was conducted to ascertain the prices paid for purebred livestock. Schedules were sent to 15,000 breeders with the request that they report on the number of purebred animals sold at auction and private sales according to breed, sex, and age, and state the maximum, minimum, and average price received for each group. The data obtained were tabulated and summarized for publication, the final report including prices on 24 breeds with each breed segregated into six age groups. It is believed that this price summary represents a reliable

index of existing market values of purebred animals.

#### MARKET NEWS SERVICE

The number and scope of the market reports issued during the year showed a notable increase. This increased dissemination of the market information gathered was brought about largely in two ways: (1) By increasing the number of special reports put out, and (2) by utilizing to a greater extent than heretofore such primary distributing agencies as press associations, country newspapers, and banks. The regular list of daily, weekly, and monthly reports were continued, and in addition several of the offices put out a weekly statistical report devoted largely to showing movements of stocker and feeder animals segregated by species, State destinations, and weights.

In addition to the above routine practically every branch office began to supply some new and special report to certain publicity agencies. To illustrate, the Chicago office made arrangements with the Western Newspaper Union to supply that organization with a special weekly review of the Chicago livestock market. The Western Newspaper Union furnishes a plate and mat service to the great number of smaller newspapers, daily, weekly, and monthly, scattered throughout the central portion of the United States. Throughout the year an earnest effort was made to hold the number of mimeographed reports issued to a minimum consistent with maximum service and to obtain greater publicity through other means.

Several of the offices are supplying large numbers of country banks with special weekly livestock market reviews. In practically all instances the banks post the reports in prominent places, where they are consulted by great numbers of patrons of the bank and others who visit the bank for the specific purpose of reading the reports. In all such cases the object was to distribute the market information to individuals and agencies which were willing to disseminate it to still larger groups.

**Marketing of the California lamb crop.**—The production and marketing of early spring lambs in California has recently become a subject of economic importance. In response to the demand for more information, the bureau inaugurated a series of special California spring lamb reports. The Middle West and East wanted informa-



tion regarding potential supplies, loadings, and movements of California lambs. California growers, on the other hand, needed information regarding supplies, demand, and prices prevailing at Middle West and Atlantic coast markets. Hence the California offices at Los Angeles and San Francisco issued daily reports estimating the crop of lambs to be marketed and later on showing the numbers both live and dressed, loaded in California for shipment east. The meat-reporting offices at Boston, New York, and Philadelphia issued daily reports regarding receipts, demand, tone of market, and prices prevailing for California lambs at those centers and these reports in turn were transmitted to the Pacific coast for the benefit of growers and others interested in such information. During six weeks in the spring of the year approximately 300,000 spring lambs were shipped east from California.

#### DEMONSTRATION AND SERVICE

Educational work through demonstrations and extension methods, and service which has for its object the development of more efficient marketing and distribution of livestock and animal products have become important features of the general program of activity of the bureau. In certain respects the market news service constitutes a most outstanding demonstrational activity. This news service involves the use of standard forms, standard class and grade schedules, and standard terminology. These reports go out to all parts of the country and are read and heard by thousands of people. The effect has been to popularize the use of uniform standards and uniform terms.

The service work consisted largely of grading meats tendered on contracts or entering into a business deal in which a certificate of quality or grade was essential for the satisfactory settlement thereof.

**Livestock grade demonstrations.**—Educational work in livestock grade standardization through grade demonstrations became a leading feature of the work in the preceding year because of the increasing interest in standardization on the part of the livestock industry. No work ever attempted by the division was so well received or produced more gratifying results than these demonstrations.

Grade demonstrations were conducted in cooperation with the Federal

and State agricultural extension service in South Dakota, Wyoming, Colorado, New Mexico, Utah, and Nevada and with the State division of markets in Virginia. The demonstrations were held on selected ranches and farms, and at agricultural colleges, and central points where herds and flocks were available and where it was convenient for stockmen, students, and others interested to assemble and observe the actual sorting and grading of the animals.

The object of these demonstrations was to point out to producers the different classes and grades found in their herds conforming to the standard market classes and grades recognized by the department and to call to their attention the difference in quality, conformation, and finish which are the factors which determine grade and the market value of the animal.

The work in the six range States included 86 grading demonstrations with cattle and sheep and 26 addresses on livestock marketing and grading, with a total attendance of more than 3,500 interested persons. Approximately a dozen demonstrations were held in Virginia and one in Baltimore in connection with the Shenandoah Valley livestock market improvement tour. More than 500 people attended the latter alone.

Meetings were held at which special emphasis was given to more efficient marketing by utilizing available market information, discouraging bulk selling, and encouraging grading and sorting in uniform lots according to market requirements, and eliminating alternate gluts and shortages through more orderly distribution of receipts.

**Improving the quality of eastern lambs.**—The campaign inaugurated to improve and standardize the quality of eastern lambs and bring about their more orderly marketing was continued during the year. The division also prepared for the use of extension workers a mimeographed document entitled "Improving the Market for Eastern and Southern Lambs," which summarizes the results of the three years' program.

Getting the trade interests at Jersey City to give more attention to sorting and buying and selling lambs according to grade rather than in bulk, as heretofore, has been one of the most constructive achievements of this campaign.

**Demonstration and extension in wool grading.**—Extension work in wool grading was continued. Grading schools were

held at Columbus, Ohio, West Lafayette, Ind., and Salt Lake City, Utah, in cooperation with the State and Federal extension service for the benefit of livestock specialists, instructors in agriculture, extension workers, wool producers, and others. The course consisted of lectures and numerous grading tests and demonstrations with the official standards. One county agent in Utah who attended the course given at Salt Lake City held four demonstrations in his own county afterwards and reported great interest on the part of the 139 sheepmen present. Grading of wool assembled by the Virginia Co-operative Wool Growers' Association was supervised and assistance given to other States where possible.

A representative of the division delivered addresses on wool standardization and wool marketing before annual meetings of the Idaho Wool Growers' Association, Oregon Wool Growers' Association, Washington Wool Growers' Association, National Wool Growers' Association, and the National Association of Worsted and Woolen Yarns Spinners. An article on wool standardization was prepared for the *Textile World*, and a paper on the same subject was read at the Pan American Conference on Standardization held at Lima, Peru. The distribution of the practical forms of the official wool standards was continued during the preceding year.

**Meat grading service.**—The meat grading service developed in response to requests from the United States Shipping Board for assistance in solving its problems of buying satisfactory meats for the steamship lines and fleets under its control. The service was extended to the Pacific Mail Steamship Co. and laid-up fleet of the Shipping Board at San Francisco, and to Childs' restaurants in Chicago, Ill., and Baltimore, Md. Practically all important steamship lines operating out of New York are now using the service. Many commercial concerns also make use of it in their daily purchases and sales of carloads of meat.

Assistance was rendered to officials of Pennsylvania State institutions in obtaining uniformity of quality of meats and meat products purchased on the bureau's specifications by actual grading of meats shipped to the institutions on contracts. In this connection meat-grading demonstrations were given at Philadelphia for the benefit of superintendents and stewards of these institutions.

## OPERATION OF CENTER MARKET

C. W. KITCHEN, *Superintendent*

Administration, C. H. WALLEIGH; Mechanical Section, S. R. MULLEN; Cold Storage, W. J. CAPNER; Inspection, G. A. ANTHONY

Operation of Center Market, Washington, D. C., was undertaken April 1, 1922, pursuant to an act of Congress approved March 4, 1921. The entire management and operation of this market was transferred to the Department of Agriculture, and the work is being carried on as a project of the Bureau of Agricultural Economics.

In addition to large wholesale and retail markets, a refrigeration plant and a cold-storage warehouse are operated.

## GRAIN DIVISION

H. J. BESLEY, *in charge*

Grain Investigations, E. G. BOERNER; Milling and Baking Investigations, J. H. SHOLLENBERGER; Research Laboratory, D. A. COLEMAN; Establishment of Grades, J. H. COX; Grain Cleaning, R. H. BLACK; Bulk Handling, E. N. BATES; Grain Sorghums Investigations, B. E. ROTHGEB; Rice Investigations, W. D. SMITH; Federal Grain Supervision, E. J. MURPHY and G. W. MORRISON, Washington, D. C., and R. T. MILES, general field headquarters, Chicago; chairman Board of Review, O. F. PHILLIPS; Inspection Efficiency, F. G. SMITH; in charge Pacific coast headquarters, Portland, Oreg., B. W. WHITLOCK.

The work of the Grain Division consists of two main subdivisions. The first covers research work in the marketing, handling, storing, transportation, and distribution of grain, including the preparation of standards. The second includes the enforcement of the mandatory provisions of the United States grain standards act and the service work incidental to carrying out of the act.

## NEW STANDARDS PROMULGATED

Investigations of certain demands made by the grain trade resulted in the promulgation and establishment, effective September 1, 1925, of official standards for feed oats and mixed feed oats, and in the revision of the official standards for oats. Material progress was made in investigations leading up to the establishment of official standards for barley, flax, rough rice, brown rice, and milled rice. A simple test was developed for determining the oil content of flaxseed, and it is planned to demonstrate the test

to the oil trade in the near future. This test reduces the time required to determine the percentage of oil in flax from approximately 24 hours to 7 minutes.

#### PROTEIN STUDIES MADE

Owing to the fact that protein content has, during the past few years, greatly influenced the market value of wheat, a survey was made of this situation. A detailed study was made of the influence of variations in each of the factors and steps involved in protein testing. The results of this study were recorded in a professional paper entitled "A study of methods for making protein tests on wheat," which appeared in the May, 1925, issue of the Journal of Cereal Chemistry.

Studies were made relative to the proper technique for determining the ash content of flour. These results have been written up for early publication. A chemical test for color in oats was developed. This will be of practical use in the grading of oats of certain types.

Cooperation was given the office of cereal investigations by the research laboratory of this project to the extent of providing facilities for the making of 10,000 protein tests. Similar courtesies were extended to the flax section of that office in the matter of making oil tests on special flaxseed samples for the purpose of developing new and better high oil-bearing varieties.

A large number of chemical analyses were made in connection with the study of what constitutes quality in wheat gluten. Owing to the many factors which enter into the composition of gluten, this is a very difficult subject, and to date no definite explanation of gluten quality is possible. Work has been done in the study of hydrogen-ion concentration of flour, dough, and bread, for the purpose of determining if any relationship exists between this factor and the bread-making quality of flour.

#### METHODS OF BAKING HARD WHEAT FLOUR

This bureau, together with the Bureau of Chemistry and the Bureau of Home Economics, has been cooperating with a committee of the American Association of Cereal Chemists in an attempt to standardize experimental baking methods on hard wheat flour. Progress has been made in standard-

izing the equipment used in testing and in outlining the investigations needed in the methods of handling.

#### BAKING DEMONSTRATIONS

Assistance was given the Pennsylvania Bureau of Markets in conducting baking demonstrations at various public institutions throughout the State. The object of these demonstrations was to popularize the use of soft red winter wheat by teaching the proper methods for use in baking bread from soft wheat flour and soft and hard wheat flour blends. The State is primarily interested in this work because it produces soft winter wheat, and although it consumes the flour equivalent of almost twice as much wheat as it raises its wheat product is so unpopular among its own people that approximately one-half of it is sold for export.

#### BAKING, MILLING, AND CHEMICAL TESTS CONTINUED

Experiments and investigation in regard to the particular formula and method of baking best suited for each of the commercial types of flour were continued and definite progress was made. The data from milling, baking, and chemical tests performed on approximately 1,200 hard red spring wheat samples are being correlated in order to study the relationship and interrelationship of kernel texture, test weight per bushel, and protein content to milling yield, ash content of flour, volume and weight of loaf, color and texture of bread, and water absorption of flour. In making these studies both the gross and net correlation coefficients are being worked out.

A study was made of the causes of "sick wheat" and milling, baking, and chemical tests were performed on 100 or more samples of this type of damaged wheat to determine to what extent the quality of such wheats was affected.

Approximately 1,200 wheat samples were milled, baked, and analyzed for moisture and ash contents of flour and protein content of wheat, more than 1,000 flax samples were milled and tested for oil content, and numerous tests were made for estimating the number of smut spores in smutty wheat. About 400 of the wheat samples tested were furnished by the Office of Cereal Investigations in connection with its work of breeding and

developing varieties of wheat with better milling and baking qualities.

#### NEW METHODS OF GRAIN CLEANING

A study was made of the processes of removing smut from threshed wheat grown in the Pacific coast region, and a detailed report was issued covering the effect of washing on the grade, test weight per bushel, and market value of wheat, and the actual cost of the smutting operation. Illustrated talks were given and demonstrations were made at farmers', and grain and rice dealers' meetings of improved methods of cleaning and handling of grain and rice.

An improved method was developed for removing so-called "inseparable foreign seeds" from wheat and rye. A device for use in connection with the method was developed in cooperation with a manufacturing concern and is now in use by the department and grain inspection departments.

Two new and improved types of portable cleaning machines were developed for the removal of foreign material from grain either at the threshing machine or at the farm granary. Experiments with both types of cleaner in actual commercial operation demonstrated that each is entirely practical in operation. An aspirator for cleaning grain was developed for use on threshing machines and combines, and a laboratory-sized cleaner was also devised for use in cleaning and analyzing samples in the laboratory. A device for removing the hulls from rough rice, for use as a laboratory device in grading rough rice, was originated, and an improved grain sieve has been developed for removing wild oats from barley and water grass from rough rice.

#### UNITED STATES GRAIN STANDARDS ACT

Standards for shelled corn, wheat, oats, and rye were in effect during the entire fiscal year. Minor changes in the corn, oats, and rye standards became effective during the current year, as well as more important changes in the standards for wheat. Official standards for grain sorghums were promulgated to become effective December 1, 1924.

Attention has been given to the merchandising of oats, not only under the official standards but by trade name and private brand. The oats standards require that grain must contain at least 75 per cent cultivated

oats in order to be classified as oats. There are on the market, however, quantities of grain mixtures consisting principally of cultivated and wild oats with varying percentages of other grains which do not come within the minimum requirements of the present oat standards. These products have a commercial and feeding value and are in demand not only in certain parts of this country but also in foreign trade. By reason of the fact that no official standards were available for this character of feed, the merchandising has been conducted on the basis of general or indefinite terms, resulting in many instances in confusion and misunderstandings. After public hearings on the subject with members of the grain trade in several markets throughout the country it was decided to promulgate under the grain standards act standards for grain of this kind in addition to the present standards for oats. Accordingly, official grain standards for feed oats and mixed-feed oats were promulgated to become effective September 1, 1925.

#### LICENSED INSPECTORS AND INSPECTION POINTS

At the beginning of the fiscal year there were outstanding 449 active licenses and, in addition, 30 were being held in suspension. During the year 244 new licenses were issued and 46 were cancelled. Of these 244 new licenses 206 were issued to supersede licenses previously held by inspectors in order to permit them to certificate other grains. Thirty licenses were suspended temporarily and 8 were reinstated, so that at the close of the fiscal year there were outstanding 443 active licenses and 28 held in suspension. Charges were preferred by the Secretary for misgrading of grain or other violations of the law against inspectors in three cases, following which formal hearings were held and the licensees placed on probation for a period of six months in each case. There were 121 inspection points at which inspectors have their licenses regularly posted and, in addition, 24 points which have been designated as inspection points.

#### APPEALS FROM GRADES ASSIGNED BY LICENSED INSPECTORS

During the fiscal year 1925 a total of 43,800 appeals were handled by offices of Federal Grain Supervision under the United States grain standards act, and Federal appeal grade cer-

tificates issued to cover. About three-fourths of the appeals were on wheat. The majority of these appeals were on carlots, but appeals were handled on cargoes to the amount of 24,295,000 bushels. Of the total number of appeals handled, 605 were referred to the Board of Review for final grade. Approximately \$45,000 was turned into the Treasury as appeal fees during the year.

### DIVISION OF DAIRY AND POULTRY PRODUCTS

Roy C. Potts, *in charge*

Dairy Products Investigations, Roy C. Potts and D. L. James; Poultry Products Investigations, Rob R. Slocum and J. M. Borders; Market News Service, L. M. Davis; and Dairy Inspection Service, Roy C. Potts.

The work of the Division of Dairy and Poultry Products was continued along the following general lines: Research, investigation, and demonstration in the marketing of dairy and poultry products; market news service on dairy and poultry products; market news statistics on dairy and poultry products; and dairy and poultry products inspection service.

#### DAIRY MARKETING INVESTIGATIONS

The study of dairy marketing problems in New England and New York was continued and a preliminary report of the New England study was issued.

Surveys were made at Stillwater and Tulsa, Okla., of the local dairy marketing conditions, and at Stillwater assistance was given in the organization of a cooperative marketing association which will seek to improve the local marketing conditions and increase the price obtained by the milk producers for their products.

#### STUDIES OF EGG MARKETING MADE

A study of poultry and egg marketing in Europe which was begun during the previous year was completed and a bulletin prepared for publication. Surveys of poultry and egg marketing conditions were made in Georgia, North Carolina, and Illinois. The Georgia survey indicated that there were local and near-by markets in Florida for the present production of eggs and poultry and that the surplus production at present was not sufficient to warrant the producers undertaking to organize a cooperative

poultry and egg marketing organization.

The survey in North Carolina indicated need for better methods of marketing of poultry and eggs. It was, therefore, deemed advisable to cooperate with the North Carolina division of markets in employing a marketing specialist who would continue the investigation and cooperate with the extension service, county agents, and other agencies in demonstrating improved and better methods of marketing. The results already obtained clearly indicate great possibilities of improvement.

The survey in Illinois indicated that the methods of production and marketing of poultry and eggs in that State were in need of improvement. It was, therefore, proposed to form organizations of local groups of producers for the purpose of improving the quality of the poultry products marketed and of obtaining better prices by the use of bargaining methods.

#### COOPERATIVE MARKETING OF EGGS AND POULTRY

A preliminary report on the Cooperative Marketing of Eggs and Poultry was issued in June, 1925. This report covers statistical data on nearly 200 farmers' business organizations which market poultry products cooperatively. More than 2,000,000 cases of eggs were handled by 30 of the organizations and more than 15,000,000 pounds of poultry were marketed by 22 organizations in 1924. There has been a very large demand for this report, which contains a brief history of cooperative poultry and egg marketing in the United States.

#### STANDARDIZATION STUDIES CONTINUED

At a conference held in Chicago in January, 1925, under the auspices of the National Poultry, Butter, and Egg Associations the national standards of quality for eggs proposed by the bureau were adopted. A committee appointed at the conference to give consideration to the proposed national grades recommended by the bureau reported favorably on a number of the United States wholesale grades proposed which will be recommended for use as trading grades. United States retail grades were also proposed, and these are being given a thorough trial in connection with the egg-inspection service maintained by the bureau at New York and Philadelphia.

**EGG CANDLING AND GRADING SCHOOLS HELD**

A series of egg candling and grading schools was held in Minnesota, Arkansas, and Kansas in cooperation with various agencies, at which producers, local buyers, country packers, and shippers of eggs were instructed in the use of the United States standards of quality and in the candling, grading, and packing of eggs in accordance with the United States wholesale grades. Assistance was given the agricultural extension departments of the State college of agriculture in 22 States in conducting egg candling, grading, packing, and loading demonstrations. As a result of these demonstrations interest in national egg standardization was increased, and much work was actively undertaken by the State poultry extension specialists in egg standardization.

**STUDIES OF BREAKAGE OF EGGS IN TRANSIT**

A preliminary investigation was undertaken in cooperation with the Western Weighing and Inspection Bureau, Swift & Co., and other agencies to determine the efficiency of eight different methods of packing eggs in cases, and two methods of buffing or bracing the cases when loaded into cars to reduce breakage to a minimum. Twelve car lots of eggs were shipped from various points in the Middle West to various markets. A detailed report covering this investigation has been issued.

**DETERIORATION OF EGGS IN TRANSIT**

The receivers of eggs in the eastern markets have complained that eggs shipped from Duluth by boat via Great Lakes to New York arrive in very poor condition. Because of the fact that a saving of about \$100 per car lot in freight charges can be obtained by lake-route shipment, it is very advantageous to the shippers. At the request of the Minnesota State Department of Agriculture an investigation of the deterioration of eggs in transit by boat from Duluth to New York was undertaken.

**MARKET NEWS SERVICE ON DAIRY AND POULTRY PRODUCTS**

Letters of commendation and information received from many sources indicate that the statistics and market information contained in the market

news service reports are being more widely used and appreciated by the dairy and poultry industries. The statistics on production, storage movement, supply, and demand are becoming a fundamental and essential part of the basic economic information used in determining economic conditions and in making proper adjustment of prices to supply and demand conditions.

**MONTHLY REPORT ON DAIRY SITUATION INAUGURATED**

Monthly reports on the domestic and foreign dairy situations were developed during the year and are now issued monthly in mimeograph form. A great deal of interest has been manifested in these reports, and they are widely published by the daily press. A similar report on the domestic poultry and egg situation has been inaugurated.

**MARKET NEWS REPORTS ON THE PACIFIC COAST EXTENDED**

The market reports issued by the San Francisco office were extended to include additional information covering the carlot movement of eggs shipped from Oregon and Washington to points outside of these States. A daily report of receipts of dairy and poultry products at Los Angeles was undertaken in cooperation with the California State Department of Agriculture.

**MARKET NEWS STATISTICS ON DAIRY AND POULTRY PRODUCTS**

The market news statistical work consists of compiling reports on production of manufactured dairy products and certain statistical summaries which are of interest and value in obtaining a comprehensive view of the general economic trends and movements within the dairy and poultry industries.

The quarterly reports of production of manufactured dairy products are compiled from schedules received direct from over 9,000 dairy manufacturing firms in the United States and are the basis of statistical reports issued which show the monthly production of dairy products manufactured in the United States and of the annual production in each State. A cooperative arrangement was made with the New York State Department of Farms and Markets whereby the reports of factories in that State are received and edited by the New York State Department of Farms and Markets,

which forwards them to be tabulated and compiled in this bureau.

#### REPORT OF MILK CONSUMPTION IN CITIES COMPILED

A report of the annual consumption of milk in 354 cities in the United States for the year 1924 was compiled and issued. This report created a great deal of interest in the consumption of milk in different cities.

#### MONTHLY STATISTICS ON DAIRY AND POULTRY SITUATION

The monthly statistical summaries of the dairy and poultry industries which are included as a part of the monthly dairy and poultry situation show the monthly trade output of butter and eggs, and have proved to be extremely valuable as an index of consumption. It is planned to further extend this work to include other commodities and milk production as a whole.

#### INSPECTION SERVICE ON DAIRY AND POULTRY PRODUCTS

The inspection service on dairy and poultry products, which until the present year included only butter and cheese, was extended to include eggs on the New York, Chicago, and Philadelphia markets. The number of inspections has continually increased and negotiations have been made whereby all inspections of eggs for members of the Philadelphia Produce Exchange after June 30, 1925, will be made by an inspector representing this bureau on the Philadelphia market. In all the markets where the butter inspection service has been established, viz, Boston, New York, Philadelphia, Chicago, Washington, and San Francisco, the service has continued in favor and the total number of inspections increased. During the year Federal-State butter inspection service was established at St. Paul, Duluth, and Chicago in cooperation with the Minnesota State Department of Agriculture.

The inspection service on these markets was established primarily to provide an inspection service on butter for the Minnesota Cooperative Creameries Association (Inc.), a cooperative organization of more than 400 member creameries, which pools and markets more than 80,000,000 pounds of butter annually. In the inspection of butter for this association, every churning is inspected.

#### COLD-STORAGE REPORTS

WILLIAM BROXTON, *in charge*

The work of the cold-storage report section consists of compiling, editing, and preparing for publication the monthly cold-storage report, monthly fish cold-storage report, monthly report of livestock, slaughter, cost, and yields, and an annual survey of refrigerated storage space. The individual reports from which the complete figures are obtained are secured from public and private cold-storage warehouses, meat-packing establishments, public abattoirs, and fishery concerns.

#### DIVISION OF HAY, FEED, AND SEED

W. A. WHEELER, *in charge*

Hay Marketing Investigations and Market News Service on Grain and Hay, G. A. COLLIER; Feed Marketing Investigations and Market News Service, G. C. WHEELER; Seed Marketing Investigations and Market News Service, G. C. EDLER; Hay Standardization, E. C. PARKER; Hay Inspection Service, K. B. SEEDS; Broomcorn Marketing Investigations and News Service, G. B. ALGUIRE; Standardization of Beans and Peas, J. E. BARR.

#### STANDARDS FOR ALFALFA, PRAIRIE, AND JOHNSON HAY

United States standards for alfalfa and alfalfa mixed hay, prairie hay, Johnson and Johnson mixed hay have been formulated as a result of thorough and extensive investigations. The laboratory work was performed in the department's hay laboratories at Washington, D. C., and Kansas City, Mo., and in cooperative State laboratories at the University of Minnesota and the Alabama Agricultural College. Field and market studies were made under cooperative agreements with the State agricultural colleges of Kansas, Texas, Minnesota, Alabama, Arkansas, New York, Oklahoma, and Oregon, and much assistance was rendered by other State institutions and by various commercial agencies.

Twenty-three public hearings on the tentative standards were held in various States during the months of March and April, 1925. The proposed standards were very favorably received and only minor suggestions made as to their change.

United States hay standards now include timothy, clover, and grass hay, alfalfa hay, Johnson hay, prairie hay, and mixed hay. Numerical grades,

based on leafiness, color, and foreign material, are provided to cover the ordinary run of hay found in the markets, and supplementary grades to cover such special characteristics as "fine," "coarse," "soft," and "high green color." The Federal standards for hay have been adopted by the States of Alabama, Texas, Maine, New Jersey, North Carolina, Virginia, Maryland, Kansas, Oklahoma, Utah, Idaho, and Wisconsin, and adoption is now pending in 10 other States.

#### NEW METHODS OF MEASURING HAY COLOR

Green color in hay is an index to the feeding value and a very important price factor. During the past year the bureau has devoted much time and effort to the study of hay color and to the problem of measuring the amount of green color in hay, which varies according to the maturity of the hay plant, the extent of the weather damage, and the methods of curing. Through cooperative work with the Munsell Research Laboratories at Baltimore, the Munsell color indexes were adopted as the scientific standards for determining the amount of green color. A machine was devised by means of which it is possible to compare the amount of green color in a representative sample of hay extracted from a baled sample with the color of Munsell color index cards of known color value. The color measurements made by the Munsell system and the machine devised in this bureau make it possible to set up definite color standards and types for the purpose of training the eye of the hay inspector to recognize such types in ear inspection.

#### GRAIN HAY STANDARDS BEING FORMULATED

The most important kind of hay not yet included in United States standards is grain hay, which is of particular importance to the Pacific Coast States. Work has started in the investigation of grades for grain hay under a cooperative agreement with the Oregon Agricultural College.

#### HAY INSPECTION EXTENDED

The extension of the hay-inspection service into new territory has been dependent largely upon the development of United States standards to cover the kinds of hay that were produced and marketed in regions where the inspection service is not now in

operation. There has been a steady growth in the number of inspections in the timothy and clover areas east of the Mississippi River. A total of 11,237 inspections was made in this territory during the first 10 months of this year.

Special attention has been given to the development of grades for alfalfa and prairie hay for the West, and alfalfa and Johnson hay for the South. Immediately following the preparation of tentative grades and prior to the publication of the official grades the States of Alabama and Texas entered into agreements with the department to adopt all Federal grades for hay and to put into effect an inspection service. Agreements are now pending in a number of the Western States where alfalfa and prairie hay are of importance and for which no United States standards have been available in the past.

In 1923 an arrangement was made with the United States Army under which the officers in attendance at the Army Veterinary School are given the training in hay inspection. An agreement has been completed between the War Department and this department by which all officers of the Veterinary Corps who have received the necessary training are licensed as Federal hay inspectors by this department, and 15 officers have been licensed under this agreement.

The hay inspection service has rendered assistance also to the Army and to other Government agencies purchasing hay. An inspector was loaned to the Army last winter to inspect 1,135 tons of hay offered for delivery at New York, which was to be shipped to Panama. The loss to the Government would have been \$5,845 if this hay had been accepted as of contract grade. Inspections made for other Government departments in Washington, Chicago, and Kansas City have resulted in an average saving on these purchases of \$1.59 per ton.

#### STANDARDS FOR BEANS

Studies of marketing practices and conditions, with special reference to the quality of beans entering commercial channels, have been made during the year for the purpose of working out standards for dry edible beans. As a result of these studies tentative standards were proposed and hearings were held in the six principal bean-producing areas during March and April, 1925. Opportunity was given to growers, shippers, dealers, and consumers to discuss the factors entering



into the construction of the standards and their application in the marketing of beans. These standards are permissive only, and may be used as a basis for grading beans by any State agency or trade organization, and the bureau has offered to help in every possible way to facilitate the interpretation and application of such standards. Several States have indicated their intention to make these standards their State standards.

#### TENTATIVE STANDARDS FOR SOY-BEANS

Tentative standards for soybeans were issued on October 10, 1924, for the use of State and commercial agencies in grading this product. Assistance was given to organizations, groups of producers, and shippers in the interpretation of the standards. The standards are being revised and will be published as recommended standards prior to the movement of the 1925 crop.

#### TENTATIVE STANDARDS FOR BROOM-CORN

Attention has been given during the past seven years to studying practices in marketing broomcorn and in publishing market news. A laboratory was equipped and is operated in conjunction with the hay standardization laboratory at Kansas City for a study in grading broomcorn. Although there are yet some rather intricate problems to solve, standards have been prepared and have been issued in tentative form for use by State and commercial agencies.

#### SEED REPORTS SET RECORD

The value of unbiased seed reports is evidenced by the increasing number who have asked to be placed on the mailing list to receive all information on seeds issued by this bureau. Approximately 100,000 mimeographed copies in the aggregate of the 110 reports issued were mailed to seed growers, dealers, consumers, and others.

The quality of the reports was improved largely because of more complete information from Europe and because more information was obtained from growers. The contacts made by a representative of the division in Europe a year ago have made it possible to obtain 150 special reports from correspondents regarding seed crop and trade conditions there.

The seed reports issued by this bureau keep seed growers, dealers, and consumers informed relative to the

supply of and demand for and prices and quality of all important kinds of field seeds. To be of greatest value this information must reach the grower before he sells his crop and must get to the consumer before he is ready to buy seed.

Three reports were issued for each of the important kinds of seeds—outlook, movement and price, and shipment reports. In addition weekly seed reviews from January 3 to May 27; a prospective seed demand report on February 27; monthly retail seed prices for March, April, and May; and a retail seed sales summary on July 9 were issued.

#### GRAIN MARKET NEWS SERVICE STRENGTHENED

The grain market news service was developed and additional market contacts made. The market for most grains is world-wide with domestic prices influenced by supplies and consumption in foreign countries. Heretofore only fragmentary reports of these conditions have been available to most farmers. This service, presenting a weekly review of the outstanding developments during the week, together with material changes in the underlying factors in the position of the market, gives information of value to farmers in planning their production and marketing activities. This information is disseminated widely.

Realizing that farm papers offer opportunities to bring economic information before large numbers of farmers, the special service provided for monthly and semimonthly papers has been extended to cover 10 farm and trade papers, with a circulation totaling 1,250,000, in which particular attention is given to the basic factors underlying the market situation, such as production, stocks, movement, and consumption in the United States and in foreign countries.

Reports upon the foreign barley situation were added to the service at the request of California barley growers who are especially affected by the export demand for brewing barley. Weekly London quotations are cabled through the bureau's foreign service, and growers are kept informed concerning crop conditions in competing countries and market developments at home and abroad. Grain marketing conditions in the Pacific Northwest were also studied with a view to making the grain market news service of greater value to the growers of that section.

### HAY MARKET NEWS SERVICE EXTENDED

The market news service on hay was extended to cover important hay producing areas in the Southwest and in the Pacific Northwest, and the circulation of the weekly reviews was increased. This service presents each week a broad survey of the general hay market situation with a brief statement of local conditions at the more important markets.

In preparing the weekly reviews of the hay market the bureau's reports upon hay-crop conditions, production, and stocks are carefully studied together with regular market reports from picked correspondents at 20 important markets. To obtain prompt distribution the Saturday reviews are wired to Chicago, Minneapolis, and Kansas City and mailed out from these offices and Washington Saturday afternoon. These reviews are published in trade, daily, and weekly papers and are broadcast from many radio stations. A detailed report with prices of representative grades at important markets and receipts at leading markets is published in Crops and Markets, and a short account of the outstanding changes for the week is prepared for the daily marketgram.

Quarterly surveys are made of the movement of surplus hay to market and of the situation in consuming areas. This information, covering timothy, alfalfa, prairie, and clover hay, is embodied in the regular Saturday reviews, in the articles for Crops and Markets, and is given additional publicity through trade papers.

### FEED MARKET REPORTS EXTENDED

The feed market news service was begun in 1917, and since that time it has been extended as funds would permit and as State agencies were in a position to cooperate with the bureau in the dissemination of the information supplied them. The information obtained for all of the reports issued and prices used are obtained from responsible dealers, brokers, and mills in all sections of the country.

Efforts are being made to get this information to farmers as soon as possible after the close of the market, and every effort is made to expedite the publication of these reports. The cooperation of State agencies has done much to develop and improve the service and to keep farmers well informed. All of the New England States, New

Jersey, New York, Pennsylvania, and several of the North Central States are now cooperating with the bureau in this work. Urgent demand has come from other important feed-consuming States for similar assistance, and as rapidly as facilities and funds become available the service will be extended to such States.

The feed market news service has been of great benefit to dairymen and others buying a large quantity of feed. The publication of wholesale prices has made it possible for purchasers of feeds to secure better retail prices from their dealers, thus eliminating the spread between wholesale and retail prices.

### ADMINISTRATION OF THE UNITED STATES WAREHOUSE ACT

H. S. YOHE, *in charge*

Grain Warehousing, H. K. HOLMAN, Jr.; Wool Warehousing, C. NAGLE; Tobacco Warehousing, S. G. SWAIN, Jr.; Nut, Fruit, and Vegetable Warehousing, PAUL M. WILLIAMS; Cotton and Broomcorn Warehousing, under direct supervision of division leader; Tobacco Standardization, F. B. WILKINSON.

### PURPOSE OF THE LAW

When Congress passed the United States warehouse act in 1916 the chief object in mind was the creation of a warehouse receipt covering agricultural products while in storage which would be generally accepted by bankers as security for loans. Through the accomplishment of this object Congress hoped to aid orderly marketing, both through growers' cooperative marketing organizations and through individual growers. Few farmers or farmers' organizations are in a position financially to hold their crops in storage while awaiting a favorable market. Moreover, a great many farmers were averse to storing their products in public warehouses, because of lack of proper supervision. The warehouse act encourages the storage of farm products by aiming to eliminate unsound and dishonest practices and by affording a real incentive to store agricultural products. The law permits the Secretary of Agriculture to license only such public warehousemen as are considered to be honest in their business relations, financially responsible, and thoroughly competent to care for the particular product offered for storage.

### ADDITIONAL PRODUCTS STORABLE UNDER THE LAW

When the law was passed in 1916, it permitted the storage of four products only—cotton, grain, wool, and tobacco. In February, 1923, the law was amended so as to permit the Secretary to place such products on the eligible list for storage as might be considered properly storable under the law. Since then farmers' stock of peanuts, late crop of potatoes, broomcorn, dry beans, dried fruits, and sirups, both cane and maple, have been placed on the eligible list.

Before placing a commodity on the storable list extensive investigations are made to determine the best storage practices and methods of storage for the particular commodity in question. Particular attention is given to the type of storage house best adapted to the specific product under consideration. The care and thoroughness exercised in making these investigations

and in drafting regulations for the storage of new commodities is apparent from the following comment by one of the leading bankers of the country on a draft of proposed regulations for the storage of potatoes.

I have read the proposed regulation with a great deal of interest and have also requested some of my associates to go over it with a critical eye to detect, if possible, any defects that might tend to render its operation less than absolutely sound and thoroughly practicable. \* \* \*

I am glad to be able to say that my associates concur with me in the view that the regulations seem to us to be not only practicable, but also designed with great skill to insure soundness and the security which should go with the proper warehouse receipt.

### PROGRESS MADE IN LICENSING WAREHOUSES

The number of licensed warehouses and the quantities of the different commodities that could be stored in them as of June 1, 1925, are shown in the following table:

Number	Commodity	Storage capacity	Number	Commodity	Storage capacity
340	Cotton.....bales..	2,677,712	2	Broomcorn.....bales..	2,000
270	Grain.....bushels..	27,713,410	2	Beans.....hundredweight..	40,000
12	Wool.....pounds..	21,984,000	1	Potatoes.....hundredweight..	16,000
84	Tobacco.....pounds..	634,212,000	3	Sirup.....gallons..	374,268
13	Peanuts.....tons..	14,637			

In addition to the warehouses for which licenses have been granted licenses have been issued to 1,431 persons to inspect, grade, and weigh products stored in licensed warehouses.

### STANDARDIZATION WORK

Under the warehouse act authority is given to the Secretary to make investigations and to promulgate standards for agricultural products. For several years studies have been made with a view to developing standards for tobacco. During the past year a proposed system of classification by types of all the different tobaccos produced in the United States was developed. Grades for various types of tobacco developed by the bureau in tentative form have been in use for several years by various tobacco growers' cooperative associations. In April, 1925, hearings were held at three different points on proposed grades for what are known as the flue-cured types of tobacco. These grades will soon be completed and recommended tentatively by the department.

### A NEW APPLICATION OF THE WAREHOUSE ACT

A new development under the warehouse act was inaugurated in New England in the early fall of 1924. Connected with almost every large flour, cotton, or woolen mill is a first-class warehouse, usually owned by the mill itself, as it is usually necessary for a mill to carry stocks on hand. In many mill towns there are no storage facilities other than those connected with the mills, and since these mill warehouses are frequently first class and carry a low insurance rate it would be uneconomic to build others and to permit the mill facilities to stand idle.

Under the United States warehouse act a plan has been developed for leasing such warehouses to a person or corporation in no way connected with the mills. The lessee operates the warehouse, receives and delivers the product, and exercises complete control. The lessee of the warehouse, if he can meet the requirements of the warehouse act, can then be licensed and be in a position to issue licensed re-

ceipts as security to paper which becomes eligible for rediscount with the leading banks and the Federal reserve banks. This plan has been in operation and is meeting with success.

#### VIEWS OF BANKERS ON FEDERAL WAREHOUSE RECEIPT

Receipts issued under the provisions of the United States warehouse act are commanding more and more attention on the part of the leading bankers. Prominent financing institutions which lent practically nothing on agricultural products are now actually seeking loans supported by Federal warehouse receipts. The standing of this receipt is best shown by statements from various banking sources. In a public address to warehousemen, bankers, and cotton dealers the governor of the Federal Reserve Bank of Atlanta made this statement:

I know the value of securities from a banker's standpoint, and I know that the warehouse receipt issued by the warehouse licensed under the United States warehouse act is the best warehouse receipt that we have ever had in this country.

The Texas State Bankers Association at its annual meeting a year ago passed the following resolution:

Whereas the United States Government has provided the machinery through the enactment into law of the United States warehouse act whereby warehouses for the storage of certain agricultural products, including cotton, grains, and wool, may be licensed and bonded and operated under the supervision of the Federal Government, thereby creating a warehouse system issuing uniform warehouse receipts of superior value as collateral security and offering a means of improving present warehouse practice and receipts, such system being entirely permissive and optional with warehousemen whether they shall operate their warehouses under it;

Now, therefore, be it resolved that this association hereby approves the Federal warehouse system, urges warehousemen to apply for licenses under it, and member banks to encourage their local warehousemen to license and bond their warehouses in order to obtain for Texas bankers, merchants, and producers the benefits of the system.

Bankers in the Pacific Northwest who have handled grain and wool warehouse receipts issued under the United States warehouse act have a keen appreciation of the value of these receipts as contrasted with other receipts. The Washington State Bankers' Association and numerous others have heartily commended the administration of the Federal warehouse act.

#### BENEFITS TO PRODUCERS

The Federal warehouse act has repeatedly demonstrated its value to the producer, both as an individual and

as a member of a cooperative growers' marketing organization. The leading growers' cooperative associations have expressed appreciation of the services rendered through the United States warehouse act. Many of the cotton associations have stated that it was their intention to store cotton only in warehouses licensed under the United States warehouse act because receipts issued by warehouses under Federal inspection are more readily acceptable as collateral than those issued by non-members.

An instance of improper practices in warehouses not operating under the Federal law occurred a few months ago, when a farmer who had about \$30,000 worth of grain in storage sold the warehouse receipts to a dealer. When the warehouse receipts were surrendered for shipment there was no grain in the warehouse. The person responsible for the shortage was prosecuted, but the farmer lost his entire crop.

The fact that no farmer has suffered any loss in any warehouse operating under the Federal warehouse act would seem to indicate that his interests are protected by the enforcement of the act. Ordinarily warehousemen are willing to operate under the provisions of this law, but they expect the farmer and the banker to demand that they do so; and they expect that a distinction will be made between their receipts, if they operate under the law, and the receipts issued by warehousemen who do not operate under it.

Since receipts issued under this law are more generally acceptable to bankers and open up a wider field of credit at better interest rates, and since the farmers' products while in storage are protected and checked by Government examiners, the farmers should more generally insist upon warehousemen placing their warehouses under the provisions of the Federal warehouse act.

#### DIVISION OF AGRICULTURAL FINANCE

NILS A. OLSEN, *in charge*

Farm Credit, G. F. CADISCH; Farm Taxation, R. W. NEWTON, Farm Insurance

The work of the Division of Agricultural Finance centers around the problems of farm credit, farm insurance, and farm taxation. The problems in these fields have assumed added importance as a result of the depression. As the credit requirements

of farms have grown, it has become increasingly necessary that farmers be able to obtain credit in adequate amounts and on reasonable terms. The hazards in farming resulting from both crop damage and fluctuations in price are now receiving more adequate recognition. The development and use of insurance as protection against these hazards undoubtedly will help stabilize the farm industry. At a time when farm incomes were at low ebb, taxes mounted to their highest levels. This has brought a farm problem which calls for early solution.

#### CREDIT PROBLEMS OF THE FARMER

In the credit studies of the division an effort has been made to ascertain the changes in the financial condition of farmers. Surveys have been made of the amounts and kinds of credit needed by farmers, the sources through which the various kinds of credit may be obtained, as well as the terms and conditions under which the different agencies supply such credit.

During the last several years there has been a great deal of interest in the subject of farmer indebtedness. Farm debt increased to a marked degree between 1910 and 1920. A survey made in the summer of 1924 indicates that the indebtedness of owner-operator farmers has grown somewhat larger since 1920. This study shows that about 66 per cent of the total debt of owner-operators was in the form of farm-mortgage debt, 28 per cent in the form of short-term cash loan debt, 2 per cent in the form of merchant-credit debt, and about 4 per cent in all other forms of indebtedness. Farm-mortgage encumbrance appears to have increased while other forms of debt have decreased. Farmers evidently have been refunding their short-time debt into long-time mortgage loans that can be had for longer periods of time and at more reasonable cost.

Farmers obtain their mortgage credit from a number of important sources. According to the studies of the division, commercial banks have been and still are one of the most important sources of such credit. During the year 1923 the commercial banks of the country appear to have used about 4½ per cent of their total loans and discounts in making farm mortgage loans. During the last few years farm mortgage loans made by commercial banks have declined somewhat in volume. This tendency probably reflects in part the increasing competition of other farm

mortgage credit institutions. Life insurance companies have been for the last 50 years one of the most important sources of farm mortgage credit, and at the present time their loans are estimated to represent about one-fifth of the total mortgage debt. During the years of the depression the life insurance companies were especially responsive to the needs of agriculture. The farm mortgage companies have also been important agencies in mobilizing the capital of the country for the use of the farmer. The studies of the division also show that farmers obtain a great deal of their credit from other farmers and individuals. It is estimated, for example, that approximately 21 per cent of the total debt of owner-operator farmers in the summer of 1924 was held by other farmers and individuals. Perhaps, however, no credit agencies have served farmers in recent years more adequately than banks of the Federal land bank system. The extension of their activities has been especially marked since 1921.

The studies made during the past year have brought out the fact that significant changes have been taking place in the terms and conditions of farm mortgage loans made by various agencies. Since 1921 there has been a material decline in the interest rates of mortgage loans made by all credit agencies. The term of such loans also appears to have lengthened. The life insurance companies are making approximately 65 per cent of their farm mortgage loans for periods of 5 years and 14 per cent of them for 10 years. Farm mortgage companies also are making many loans for periods of reasonable length. On the other hand, only 26 per cent of the loans of State and National banks are made for a period of five years. Over 70 per cent of the farm mortgage loans of commercial banks in 1923 were made for five years or less. Since the loans of the Federal and joint-stock land banks are most commonly made for periods varying between 30 and 35 years, it is probable that their policy has influenced the term of loans made by other agencies.

A special study has been made during the past year of short-term bank credit for farmers. A large percentage of the short-time loans of farmers is obtained from commercial banks. The survey shows that the short-time loans of banks to farmers in 1923 amounted to about 9.5 per cent of the total loans and discounts of all banks. Commercial banks as a rule make per-

sonal and collateral loans to farmers for relatively short terms. Almost 75 per cent of such loans in 1923 were for periods of six months or less. Most of the loans for periods longer than six months were made in the West and South. A number of significant regional differences appear in the matter of security for such loans. Advances on notes without indorsement are most prevalent in the Middle West, on indorsed note and on stocks and bonds in New England, on livestock in the range country, and on crop liens in the South and in the Northwest.

Interest in the credit problems of agriculture is widespread. Many requests have been made for information in regard to both Federal and joint-stock land bank loans. Many inquiries also have been received in regard to the intermediate credit system established in the spring of 1923. The division has given farmers advice and assistance in utilizing the credit systems provided by the Federal Government.

A study made of the assets of farmers in 1924 shows that for the country as a whole about 79 per cent of the capital of owner-operators covered in the survey was invested in farm land, buildings, livestock, and machinery; about 21 per cent in stocks, bonds, cash, and other assets. The farm business requires a large fixed capital investment, but the difficulties experienced by many farmers during the depression point to the need of investing more of their funds in liquid reserves upon which they can readily draw.

#### FARM INSURANCE PROBLEMS

The hazards in farming are many and great. These hazards may be materially reduced through the use of insurance. Insurance does not eliminate hazards, but it distributes them from the individual to the group.

According to the best estimates the value of farm property insurable against fire in 1920 amounted to about \$26,000,000,000. A great deal of farm property in 1920 was not covered by insurance, especially in the South. Farmers obtain insurance against fire through joint-stock fire insurance companies and through farmers' mutual fire insurance companies. The studies of this division show that the farmers' mutual fire insurance companies in general have been very successful. At

the present time there are approximately 2,000 companies, carrying risks amounting to over \$8,000,000,000. Most of these companies are located in the East and Middle West. The extension of mutual companies to the South has been retarded partly because of tenure and race conditions and partly because of inadequate laws. The cost of insurance in farmers' mutuals has averaged around 26 cents per \$100 annually. The cost of fire insurance in old-line companies has ranged from \$0.35 per \$100 in some of the Northern States to \$1.50 per \$100 in some of the Southern States. The studies of the division point to the conclusion that more farmers' mutual fire insurance companies could be organized to advantage, especially in the South.

The farmer should also carry insurance against severe and unpreventable loss to his crops. This loss may result not only from hazards such as plant diseases and insect pests that reduce crop yields but also from fluctuations in price. In some measure the farmer may guard against unnecessary losses by properly diversifying his crops, testing and treating his seed, building up reserves for protection in bad years, and the like. But there are crop losses against which he can not protect himself, and such hazards should be covered by insurance. Most progress has been made to date in the insurance of specific hazards, especially hail and frost. This type of insurance, however, does not adequately meet the crop-insurance needs of the farmer. What is needed, therefore, is a form of general crop insurance that will afford the farmer protection against all hazards over which he has no control. There are many difficult problems in this field and the division has devoted some time to their solution.

#### FARM TAXATION PROBLEMS

The complaint has been general that farm taxes are relatively too high. Between 1914 and 1923 taxes on farm property of the United States are estimated to have increased about 140 per cent. During the same period the value of farm products increased but 58 per cent. While taxes thus mounted, the funds from which they were paid were not correspondingly increased. This added tax burden came at a time when the purchasing power of the farmer was at low ebb and when he was least able to bear it. The studies

of the division during the past year have shown that the tax burden on the farm industry is relatively greater than that on most other industries.

Most of the taxes paid by farmers are for State and local purposes, and these revenues are obtained largely through the general property tax. As at present administered the general property tax does not distribute the tax burden equally between farmers and other classes. Most of the property possessed by the farmer can be readily placed upon the assessment rolls, whereas a large part of urban property is in intangible form and not easily found by the assessor. Furthermore, sale value of farm land is now used as a measure of tax liability. Since, however, the turnover in lands is relatively low, farm assessments are based largely on the personal opinions of the assessors. The values placed upon farm lands for assessment purposes are therefore frequently larger than the earnings of such land warrant. Inequalities in taxation, both as between farmers and between farmers and urban people, have multiplied and need correction. It is believed that a step would be taken toward a better equalization of the tax burden if land earnings were taken more into account in the fixing of taxable values.

The bulk of the farmers' taxes are levied purely as local taxes. In 1923, for example, over 76 cents out of every dollar paid by Indiana farmers was levied for the support of schools and roads. The maintenance of schools and roads, however, should not be regarded as simply a local function. The State as a whole is vitally interested in the education of the farm boy and girl, and in a system of good roads, but at the present time many States carry a relatively small part of the burden of providing adequate rural school facilities and good roads.

Because of difficulties in interpreting State and Federal reports dealing with farm-tax problems, the division has sought to obtain greater uniformity in such reports. An effort has been made to obtain statistical reports from which may be shown the comparative school cost for urban and rural communities. It is also believed that the income records of the Internal Revenue Bureau can be made much more useful in studies of the tax problem.

## DIVISION OF STATISTICAL AND HISTORICAL RESEARCH

O. C. STINE, *in charge*

Foreign Competition and Demand, G. B. L. ARNER, E. C. SHOUP, and L. V. STERE; Statistical Analysis, B. B. SMITH; Market Statistics, LOUIS H. BEAN and LEWIS B. FLOHR; Production Statistics, E. M. DAGGIT; Transportation, J. G. CROSS; Graphics, T. D. JOHNSON.

Prices and probable future prices for farm products are questions of paramount importance. One of the objects of the work of the Division of Statistical and Historical Research is, therefore, to provide a basis for forecasting prices through the collection of data and the keeping of records of production, prices, and of all the factors that influence the demand for farm products, both in the United States and in foreign countries.

Studies are made of general economic problems that especially refer to the relation of agriculture to other industries in an effort to contribute to the development of a national agricultural policy. No intelligent study of economic problems can be made unless all the facts are available and comprehensive data have been compiled. This division acts as a clearing house, therefore, for statistical data relating to all phases of agricultural economics. These data are prepared for current publications, are compiled for publication in the Yearbook of the department, and are used as the basis for economic studies both in this and other divisions.

### FOREIGN COMPETITION AND DEMAND

With a large share of our agricultural production finding a market abroad, the farming interests of the country are vitally interested in everything influencing foreign demand for their products. The current production, market, and international trend information is designed to assist farmers and their organizations, dealers in agricultural products, and the large body of men in positions where they influence the agricultural policies of the country in deciding when and how our products should be marketed, what prices may be expected, and in otherwise developing sound production and marketing policies. Information as to methods of production, costs, potentialities, and trends of production in competing countries, together

with tendencies in market demand, furnish the basis for adjusting production to the demand for products or determining what and how much to produce.

The chief sources of foreign information are the following:

Agricultural commissioners at London, Berlin, Vienna, and Mexico City.

Special representatives of this bureau studying the production and marketing of specific commodities in the foreign field.

The International Institute of Agriculture at Rome, which secures and transmits reports from 70 countries.

The 400 consular officers of the Department of State.

The attachés and commissioners of the Department of Commerce.

Foreign agricultural and statistical departments through direct cable communication.

Foreign correspondents who report directly to this bureau.

Through the International Institute of Agriculture at Rome information is collected by wire and mail from all the leading countries of the world. Nearly one-third of the information received by this bureau comes through the institute of agriculture.

Cooperation with agencies in foreign fields is maintained and stimulated by the work of the foreign representatives of this bureau. Six members of the staff of this bureau are stationed in Europe at the present time who make arrangements for the exchange of information with foreign agencies and keep the bureau informed with regard to agricultural developments in foreign countries.

Through cooperation with the Department of State the services of 400 consuls, scattered all over the world, have been utilized in collecting information not covered by the International Institute of Agriculture. The agricultural commissioner at Berlin spent one month interviewing consuls through Italy, France, and Spain relative to reports on agricultural subjects. The effort which our foreign service has put forth in the direction of closer cooperation has had concrete results during the past year in better and more frequent reports.

Closer relations have been established with the Bureau of Foreign and Domestic Commerce with regard to the exchange of agricultural information. Copies of cabled messages received from the agencies of the Department of Agriculture and from the International Institute of Agriculture are sent to the Department of Com-

merce. In return the files of material submitted by field agents of the Department of Commerce are open to this bureau.

Direct cable exchange is maintained with the Governments of India, Norway, and Canada. Cabled information from Argentina is received through the Argentine Embassy.

In order to keep the American producer constantly informed of the latest developments in world agricultural conditions, probable production, and probable demand, world tables of production of all major crops and classes of livestock are kept up to date.

Reports received by cable or telegram are promptly prepared for release to the press and are also telegraphed to agencies and persons known to be interested. An interpretative statement for publication is prepared on the basis of the comparison of the current report with previous reports in order to indicate the significance of the information to American agriculture.

In addition to being distributed to persons interested by telegraph and mail, and given immediate publicity through the press, the data collected are published in Foreign Crops and Markets, Crops and Markets, bulletins, and the Yearbook.

#### SURVEY OF WORLD AGRICULTURE

Agricultural surveys of Italy, Germany, and Switzerland have been practically completed. Field work in Poland is in progress at the present time. These surveys provide in concise form the data which, together with current reports, serve as the basis for estimating changes in area and production of crops and numbers of livestock. It is planned to add constantly to the completeness of this world survey.

#### FOREIGN MARKET REPORTING

Special attention is being given to reporting foreign markets and market conditions and trends of prices with a view to keeping our agricultural producers informed where and how their products can be most advantageously disposed of. Cable service has been greatly expanded and methods of preparing, handling, and disseminating special cable reports have been developed.

Regular weekly and monthly cables on the foreign pork market have been received since early last August and have been given distribution through regular channels of publication and



the leased wire. Close touch is kept with the trend of the butter market in England and Denmark by cables received each Friday from the American agricultural commissioner in London. A review of the foreign situation as affecting the market for dairy products is published each month. Additional regular cable reports on imports of fruit into certain foreign markets have been inaugurated during the present year. Cables on wool prices for various grades, sales, clip, stocks, etc., are received from consuls at Melbourne, Australia, and Wellington, New Zealand. Reports have also been received from the colonial wool sales held at regular intervals in London. The consul stationed at Progreso, Yucatan, cables on the hemp situation near the first of each month. Consuls in China and Japan send reports on peanuts in January and November of each year. New codes have been prepared for reporting on both apples and citrus fruits, during the coming season which will enable the transmission of very detailed reports at no increase in cost over the present method. A series of foreign prices at various markets is being built up and wage and employment data bearing on foreign agricultural conditions are also being collected.

Studies in international trade problems and a series of records of exports and imports with source and destination provide a gauge of the ability of foreign countries to buy from us and their ability to buy from our competitors. An index of agricultural exports has been completed which gives for the first time a measure of the relative volume of the gross exports of farm products. An annual index of the surplus of foodstuffs covering the period from 1880 to 1924 has been prepared. This index number takes into account both exports and imports of foodstuffs and is a measure of the effective surplus of food products from year to year. The relation of international trade practices, tariffs, and ocean rates to international trade has also been given consideration. A study has been made of the tariff and its effects upon the production and price of a number of the most important farm products. Information regarding the foreign and domestic tariff rates on specific agricultural commodities and on commodities which the farmer buys has been compiled. The tabulation of import and export statistics for all the principal agricultural prod-

ucts of the United States and foreign countries has been continued. A very comprehensive file of statistical information embracing more than 350 tables is constantly kept up to date.

#### PRICE FORECASTING AND STATISTICAL ANALYSES

The development of bases for forecasting prices through statistical analyses is of particular significance. These analyses include the effect of both supply and demand upon price. They involve a study of the factors affecting demand and the measuring of the effect of the several factors upon price. Both general demand conditions, such as movements of the business cycle and changes in price level, which affect the price for all agricultural products, and demand factors which affect the prices of specific products, such as prices of competing products and employment and wages of consumers of the products, are being measured.

For measuring domestic demand, statistics of business activity, employment, wages, and prices of commodities other than agricultural products are being collected from the various sources from which they are available. For measuring foreign demand, figures representing exports of agricultural products and the prices at which they were taken, also employment, wages, and business conditions in foreign countries, are being compiled.

The studies begun last year on the price of oats and forecasting the price of hogs have been continued. Definite progress has been made on wheat-price studies, and a preliminary paper entitled "A Method of Estimating the May Price of Spring Wheat" has been published, which attracted wide attention.

A bulletin on agricultural prices is now in preparation which will contain a discussion of agricultural price fluctuations, methods of finding and measuring the effect of price factors, description of the new index of farm prices, and their significance in terms of agricultural purchasing power. In addition the bulletin will contain a number of historical price series which should form the basis for studies in price forecasting.

In cooperation with the Cotton Division studies are being made on forecasting cotton prices and relation of prices to subsequent acreage, consumption, movement, and exports.

**INCOME FROM AGRICULTURAL PRODUCTION**

A statement on income from agricultural production, 1919 to 1924, a preliminary estimate on income for the year 1924-25, and an analysis of the study and a description of the method used have been prepared.

**PRODUCTION AND MARKETING STATISTICS**

A very comprehensive file of statistics is compiled and kept up to date relating to the area, production, yield, value, market prices, prices to producers, and movement of the principal farm products, and tabulations are prepared for publication in Crops and Markets, in statistical bulletins, in the department Yearbook, and for use in preparing special reports. These tabulations serve also as the basis for much of the research work of the bureau, and improvements are constantly being made in the completeness and accuracy of the statistics obtained and made public. Special study is being given to the preparation of a price series which will be useful to the industry and to the trade.

**DIVISION OF AGRICULTURAL COOPERATION**

CHRIS L. CHRISTENSEN, *in charge*

Economics of Cooperation, A. W. McKAY; Accounts and Business Practices, A. V. SWARTHOUT; Statistics of Cooperation, R. H. ELSWORTH; Legal Phases of Cooperation, L. S. HULBERT.

The value of farm products sold through cooperative associations during 1924 was practically four times as great as in 1915. New problems in cooperation are arising, and questions of rural finance, insurance, production programs, transportation, and distribution are influenced by the activities of the farmers' marketing and purchasing associations. The future of the movement depends on the successful solution of economic problems rather than on the advocacy or adoption of special forms of organization, and on the education of the members in the principles and aims of cooperation.

There has been a heavy demand on the bureau for information regarding the experiences of successful organizations, for instruction in the tested principles of cooperation, and for guidance in meeting membership, business, and legal problems. The Division of Agricultural Cooperation

has the responsibility of collecting and disseminating reliable information regarding cooperation, of studying and analyzing its possibilities and limitations, and of rendering such service to associations and groups of producers as will enable them to set up and maintain sound and efficient organizations.

The research and service activities have the following objectives: (1) The development of cooperative associations based on the needs of the community or industry; (2) the adoption of more efficient operating and merchandising methods; (3) simplification of such special problems as pooling, financing, membership information, and marketing contracts; (4) to contribute to a clearer understanding by the farmers and the general public of the aims and functions of cooperation.

**HISTORY AND STATISTICS OF COOPERATION**

Reports have been received from more than 10,500 active associations in this country. For the majority, very full information is given covering the membership, volume of business, financial condition and management, and merchandising methods over a period of years. The files of the bureau thus form a source library regarding agricultural cooperation, which is already of great value, and the value of which is enhanced each year.

A statistical bulletin of 76 pages, entitled "Development and Present Status of Farmers' Cooperative Business Organizations," was issued during the year. The bulletin contains in tabulated form the essential information collected in nation-wide surveys of cooperation made during the years 1913, 1915, 1919, 1921, and 1923. The 10,160 associations considered in compiling the bulletin are classified according to commodities handled and the States in which they are located. Six preliminary reports dealing with the statistics of cooperation were prepared and issued in mimeographed form.

**STUDIES OF COOPERATIVE MARKETING**

A study of the organization of cooperative elevators in North Dakota and Minnesota was begun for the purpose of developing the factors that affect the efficient management of farmers' elevators in the spring-wheat region. The study aims to develop the factors which enable a farmers' ele-

vator to operate as a successful business institution.

A study of the management and costs of operating cooperative cotton gins was also begun. Interest has been aroused recently in the possibilities of the cotton gin as the basis of a cooperative unit whose members may affiliate with the State-wide cotton marketing associations. Very little is known of the cost of operating cotton gins, the best methods of operation and management, or the volume of business necessary. The bureau has undertaken to collect this information in Texas, and in North Carolina in cooperation with the agricultural college of that State.

A general study of cooperative marketing of cotton was made, the results of which will be presented in a bulletin. A study of the marketing of fruits and vegetables through cooperative associations was also concluded and is now in manuscript form. A bulletin treating of the operating methods and expense of local citrus associations in California appeared at the beginning of this fiscal year. A mimeographed report on the cooperative marketing of poultry and eggs has been prepared in cooperation with the Division of Dairy and Poultry Products.

#### COOPERATION WITH STATE AGENCIES

A general survey of the organization and operation of farmers' elevators in North Dakota was conducted in cooperation with the North Dakota Agricultural College. A survey of the marketing of North Carolina strawberries, with special reference to the possibilities of cooperative marketing in this region, was made in May, 1924, and a report prepared for publication.

A survey of cooperative organizations in California was carried on during the year in cooperation with the University of California. Studies of the operation and management of farmers' elevators in Minnesota and of the volume of business in relation to marketing costs of cooperative cheese factories in Wisconsin have been carried on in cooperation with the State universities.

#### ACCOUNTS AND BUSINESS PRACTICES

The development of cooperative marketing has brought forward new business problems and has also placed groups of producers in positions of business responsibility. In order to study the problems of operation, man-

agement, and merchandising and assist cooperative associations in introducing into their operations the most modern and efficient business practices, a section of accounts and business practices has been organized. The bureau furnishes the services of trained investigators who are able to analyze the methods of individual cooperative associations and to determine and isolate the management factors which need correction. The cooperative associations have been quick to appreciate the value of this service, and the demand for it now is greater than can be met in the immediate future.

A study of the Western New York Fruit Growers Packing Association, Rochester, N. Y., was completed during the latter part of the year and a comprehensive report made to the board of directors and a summary was made available to each member in the association. The board of directors of the association adopted resolutions which put into effect all the major suggestions made by the bureau. At the request of the board of directors of the Staple Cotton Cooperative Association, Greenwood, Miss., the bureau is now engaged in making a similar study of that association.

#### SERVICE ACTIVITIES

The service work includes the dissemination of general information regarding cooperation to the public, and special information to groups interested in forming cooperative associations. It includes also surveys of the production and marketing conditions under which an association must operate, and assistance in the solution of membership, legal, and business problems of existing organizations. A brief survey of the possibility of marketing Mississippi truck crops through a centralized association was made during the year and a report rendered to a committee of growers and merchants interested in forming such an organization.

Attention has been given to membership or field service problems of cooperative associations, particularly in the large cotton and tobacco associations. Representatives of the bureau have met with various groups and committees interested in developing plans for maintaining adequate and suitable contacts between the management and the members for carrying on educational work and for disseminating information. Two mo-

tion pictures have been made and released, Cooperative Marketing—Cotton and Cooperative Marketing—Tobacco.

Members of the staff have been in frequent attendance during the year at meetings of farmers and extension agents, particularly at meetings of members of cooperative associations. At such gatherings the principles and problems of cooperative marketing have been discussed and the limitations, as well as the possibilities of cooperation, have been brought out, and the responsibility of the individual grower toward his organization has been emphasized.

An important feature of the service work of the division is to bring to the attention of associations the information and services available in other divisions of the bureau. Crop and market reports, outlook reports, storage holdings, and similar information are especially valuable to associations; and it is important also that they should understand the warehousing, standardization, and inspection services offered by the bureau and the results of special studies in finance, insurance, cost of marketing, and similar fields.

Legal questions have been presented during the year, and cases and decisions bearing on such questions have been cited. A second mimeographed circular containing reports of court decisions affecting cooperative associations was issued during the year.

Agricultural Cooperation, a mimeographed publication of 20 pages, now goes to a mailing list in excess of 3,000 persons, many of whom are officials of cooperative associations. The publication contains current legal and statistical information regarding cooperation in the United States and foreign countries.

#### DIVISION OF FARM POPULATION AND RURAL LIFE

C. J. GALPIN, *in charge*

Rural Population Statistics, VEDA B. L. TURNER; Population Aspects of Rural Community Buildings, W. C. NASON; Farmers' Standard of Living, E. L. KIRKPATRICK.

In order to understand the researches of this division it must be borne in mind that in the national problems of agriculture farm population is as truly a major economic factor as land or capital. This fact furnishes a guiding principle in de-

termining the type of research to be carried on.

#### STATISTICS OF FARM POPULATION ON SCIENTIFIC BASIS

Definite information, including correct statistics of the number of persons of all ages on farms, the movement from farm to city, the reasons for such movement, the cost of living on farms, the facilities for education, recreation, and health, and the relation of the burden of taxation upon farmers to their ability to pay taxes, all have a very important bearing upon the problem of securing a stable agriculture with its accompanying influence on the national welfare.

In order to get statistics which are of the most practical value farm population should be shown by county and State. Demonstration tabulations of the farm population of several counties have been prepared and submitted to university laboratories for study and use. It is hoped that in the not distant future State and county farm population statistics will be as available for use in shaping agricultural policies as are now the facts relating to farm crops.

#### THE MOVEMENT OF POPULATION FROM FARMS

An extensive inquiry has been made over the Nation, county by county, as to the movement of population to and from farms during the calendar year 1924. An analysis of this survey shows that the net loss to the farm population for this year was 182,000, as compared with a net loss of 460,000 in 1922. The gross movement from farms to cities in 1922 was 2,000,000, compared to 2,075,000 in 1924. The gross movement back to the farms, however, in 1922 was 880,000, compared to 1,396,000 in 1924, or a very decided increase in 1924. These figures are shown by geographical divisions and serve to some extent as an index of prosperity.

#### THE FARMER'S STANDARD OF LIVING

The educational work of the bureau has pointed to the fact that if the farm community is to retain permanent prosperity it must come through the establishment of standards of living comparable to the standards of those engaged in city industries. Consequently, this division is devoting itself to the ways and means of maintaining satisfactory standards of living for farmers.

The standard of living studies have engaged about half the energies and resources of the division during the current year in an effort to complete the first stage of a national study of this subject. The results, State by State, have been put out in mimeograph preliminary reports; one bulletin manuscript, collecting the results of the first stage in all States, is in process. A second stage of study is being projected for the coming year's work, which will attempt to relate the standard of living on farms in each State with the income of the farm families in that State for the purpose of reaching national indices of both living and income.

### ECONOMIC LIBRARY

MARY G. LACY, *Librarian*

The Economic Library consists of the statistical collections of the department relating to acreage, production, prices, etc., of agricultural crops as well as the collections on economics, cooperation, marketing, rural economics, land and rent, labor and wages, finance, and commerce.

During the year the library has compiled 44 bibliographies and selected lists. The appreciation of these, as shown by the requests that have come for them and the commendatory letters received, has been very gratifying. This library is believed to comprise the strongest collection of agricultural statistics in this country and probably in the world, and for that reason work has been started on the compilation of a series of source books showing the official sources of various types of agricultural statistics, both domestic and foreign, and official publication of these books will be of great benefit.

### DIVISION OF LAND ECONOMICS

L. C. GRAY, *in charge*

Land Resources and Utilization, O. E. BAKER; Land Reclamation, R. P. TEELE; Land Settlement, B. HENDERSON; Land Tenure, O. M. JOHNSON; Land Values, E. H. WIECKING; Farm Labor, J. C. FOLSOM.

The work assigned to this division consists of research in land economics and farm-labor problems. In addition, the division is called upon for work in connection with the general activities of the department. During the past year the economist in charge served as chairman of the departmental committee appointed to cooper-

ate with the Bureau of the Census in planning and taking the agricultural census of 1925, and another member of the staff served on this committee.

### LAND UTILIZATION

Work has been continued along the lines of estimating probable future needs for land for agricultural purposes. Effort has been made also to encourage the classification of the lands now unused or little used, in order that their potentialities for meeting future needs may be determined, and policies may be formulated which will bring such lands into the uses for which they are best adapted as they are needed. Attention has been given to showing the need for this classification of our land resources and to a study of methods used in the few places where classification is being undertaken by public or private agencies.

Studies in the Great Plains area, for the purpose of developing the best system of utilizing the land of that region, have been continued. Preliminary reports of surveys made in previous years in the central Great Plains were issued during the year, and additional studies were made in the southern Great Plains, in Texas, and New Mexico.

Preliminary work has been done on a similar study to be made in the "piney woods" section of the South Atlantic and Gulf States, in cooperation with other bureaus of the department.

A study of the trend of food consumption in the United States since 1839 in relation to the utilization of land resources has been completed. Parallel with this, special studies have been made to determine the trend in yields per acre of important crops and the factors which appear to be responsible for these trends.

### LAND RECLAMATION

Land-reclamation policies of the United States and of the several States have been reviewed and a bulletin published. This bulletin gives a résumé of the experience of this country to the present time, and makes recommendations as to future policies. This has been followed by extensive field studies to determine the economic limits of the cost of water for irrigation. This work has been carried on in cooperation with the Bureau of Public Roads. Field surveys were made in the Southwest in the spring

of 1924, and much more extensive studies were undertaken in the winter of 1924-25 in connection with the taking of the agricultural census. Reports were obtained from several thousand farmers operating irrigated farms, and these are being tabulated.

#### LAND SETTLEMENT

An important phase of this work deals with methods used by States and private individuals and agencies in inducing settlement on lands that have not been used for agriculture. During the past year a bulletin entitled "Land Settlement and Colonization in the Great Lakes States" was issued. A field study of the policies of the several States with regard to aiding, supervising, or controlling land sales and settlement was made and a report prepared and submitted for publication. A study of the methods used by private land settlement agencies in classifying the land offered for sale is being made.

#### LAND TENURE

The results of several studies of land tenure, covering the relations between landlords and tenants, etc., were published during the year. A survey of the landlords reported in the census of 1920 has been made to determine whether there is a dangerous accumulation of farms in the hands of a landlord class. This study indicates that no such tendency has developed in our country as a whole. Two bulletin manuscripts on this subject have been completed during the year.

A questionnaire calling for information as to changes in land tenure has been sent out to a large number of correspondents, and the replies are being tabulated.

Two local surveys were made for the purpose of providing more detailed pictures of tenure conditions in particular regions than can be obtained from other sources of information. One of these, located in central Kentucky, will supplement other information obtained in past years and make possible the completion of a general bulletin on land tenure in that region. The other survey is located in northern Georgia, a region of extensive white tenancy.

#### LAND APPRAISAL AND LAND VALUES

Studies of the effect of various factors influencing land values have been made during the year in cooperation with the Bureau of Public Roads. The objects of these studies are to de-

velop methods of appraising land values as a guide to purchase and sale, assessment for taxation, and credit policies, and to serve as a guide in planning expenditures for improvements and the development of a sound farming policy.

Long-time records of land prices are being compiled from county records of sales and other sources, and an attempt is being made to measure the influence of various factors on sale prices and on the trend of such prices. During the year such records were obtained in Indiana, Illinois, Wisconsin, Iowa, Nebraska, Missouri, Texas, Tennessee, Kentucky, North Carolina, South Carolina, Georgia, and Alabama.

#### FARM LABOR

During the year a bulletin, "Truck Farm Labor in New Jersey, 1922," was completed and published. A reconnaissance survey was made in Virginia, Maryland, Delaware, Pennsylvania, New Jersey, New York, and the New England States covering the agencies placing farm labor, farmers' practices in handling labor, farm labor supply and demand, and general farm labor conditions. Studies have been made of the monthly variations in amounts of family labor and hired labor on farms and the demands for harvest labor and methods of meeting this demand. A further study of farm labor conditions is being made for the purpose of showing the expenditures for farm labor and the part of the production that goes to meet labor expense. It is proposed to show also the proportion of the farm population engaged as hired labor, and the relationship of the agriculturally employed population to the area of land and the value of farm property in the various local communities of the United States.

#### DIVISION OF INFORMATION

J. CLYDE MARQUIS, *in charge*

Editorial Economist-Statistician, S. W. MENDUM; Editorial, Miss C. B. SHERMAN, Mrs. A. R. DISNEY; Consumer Demand, L. A. ADAMS; Periodicals, A. B. GENUNG, C. E. TROUT, Miss C. M. VIEHMANN; Press Service, F. GEORGE, Jr.; Radio, J. C. GILBERT; Exhibits, B. L. PERKINS; Handbook, M. A. CROSBY; Photographic Laboratory, H. C. WILCOX.

The distribution of economic information involves two general groups of material: (1) Current market news or matter that must be given immediate distribution through the press, by

radio, and by wire; and (2) general economic information of less timely importance but of value to farmers and others in making plans for future operations, which is distributed in various periodicals, bulletins, reports, and special articles.

The great effort in news service work is to gather and distribute the reports promptly and to make them available for producers, traders, and others as soon as possible. The wider use of radio as a distributing agency has made it possible to speed up market news for farmers so that they are now almost as promptly served as the trade, which formerly had an outstanding advantage because of its location close to marketing centers.

The splendid cooperation of all news-distributing agencies must be acknowledged. A decided increase in the distribution of information has occurred in the form of materials prepared for extension workers. During the year a number of State extension directors have cooperated with the division in organizing almost complete programs of market-news information for their States, utilizing all the distributing agencies, the press, farmers' organizations, and radio as extensively as possible.

One of the chief objectives of the division has been to facilitate distribution by the use of mimeographed preliminary reports and through the mimeographed periodicals. The bureau is now preparing and editing five mimeographed publications, which are sent to leaders doing educational and extension work. These periodicals serve to give the workers immediate access to useful material.

An index of economic charts available in the bureau was prepared and distributed to extension workers, together with a price list at which prints and enlargements would be provided by the bureau. By this means a greatly increased use is being made of charts, many of which heretofore were not distributed in any way.

#### PRESS SERVICE

More effective distribution of the results of the bureau's work has resulted through the development of closer contacts with the newspapers, farm journals, and magazines, with an effort to adapt our material more closely to the needs of each publication, and to give articles a local and regional appeal whenever possible.

Conforming to the general department policy to reduce the number and

size of press releases and to improve their form, about 300 releases, ranging from short items to articles of 1,000 to 2,000 words, have been distributed. A large volume of material has been distributed through close contacts with the Washington correspondents of various trade journals and newspapers particularly interested in cotton, wool, and general business conditions. Close contact has been maintained with the news agencies, such as the Associated Press, with the result that their representatives have given wide distribution to numerous special articles which otherwise would not have been handled. Special effort has been made to assist feature writers for newspapers and magazines to obtain material for their articles, and press clippings indicate that material from this bureau is now receiving wide distribution. Branch-office workers have been urged to assist local correspondents in the preparation of articles with local emphasis based upon various reports issued by the bureau until we now have in our branch offices a means of contact with the press that is of great importance.

The weekly review of the grain market has continued to expand in circulation until it is now distributed throughout the country from a number of our branch offices. Late in the year a special barley review was begun for California barley producers, including attention to foreign market conditions.

The daily Marketgram has been continued during the year and is now distributed from six offices on the leased wire. This goes to about 2,000 weekly newspapers and to a number of plate-service agencies which distribute it in connection with their service. It is difficult to estimate the total circulation of this report, but it provides the only national market review that appears in many weekly newspapers.

#### RADIO NEWS SERVICE

The use of radio for farmers has increased steadily during the year. The number of radio sets owned by farmers has been estimated by various agencies. In some States from 15 to 20 per cent of all farms own sets. The bureau contacts with radio stations which are maintained primarily from branch offices have been strengthened during the year by providing more complete reports. The number of stations has not increased greatly but the scope of the programs has been steadily expanded.

An outstanding development has been the opening of broadcasting stations devoted primarily to agriculture. The station WLS of the Sears-Roebuck Agricultural Foundation at Chicago has cooperated from its beginning with the bureau by presenting one of the most complete programs of market news ever attempted. In addition to daily broadcasts, a series of special talks on marketing by bureau representatives has been used with excellent response from farmers.

There has been a decided movement for various interests to cooperate in a given region and use a single station as the center of agricultural broadcasting. In New England, station WBZ covers practically all of the New England States. In the Northwest station WCCO, sponsored by a committee including representatives of all agricultural interests, presents a strong program for the Northwestern States. In other sections a similar development is in progress.

During the year the use of market reports by State college and university radio stations has been extended. Regular reports have been transmitted by university stations in Ohio, Indiana, Texas, and Iowa and arrangements are being perfected to use the stations in Kansas and Oregon.

Summaries of the regular crop reports have been sent to branch offices for release by radio within a few minutes after they are released at Washington. Through the State crop statisticians local stories have been provided for many stations.

Late in 1924 the first agricultural radio conference was held at Chicago in response to a call issued by the department and representatives of the bureau participated in the discussions. This conference resulted in great increase of interest in radio broadcasting among extension directors and others.

A feature of radio broadcasting developed during the year is the consumer talks which are now distributed weekly in Philadelphia, New York, and Chicago. These consist of description of market conditions and information of supplies of fruits and vegetables which is of value to consumers in determining their purchases for current use and for canning.

#### ECONOMIC PERIODICALS

Crops and Markets, the principal statistical publication of the department, has been issued during the year

as a weekly, containing current market reviews, movements, and prices, with a monthly issue, the Supplement to Crops and Markets, containing monthly information, such as crop reports, monthly reviews, prices, summaries, etc. The weekly edition now goes to a list of 17,000 names, principally traders and others interested in current market reviews. The supplement is issued in edition of 125,000, and is sent to statisticians, crop reporters, and others desiring a printed record of the important statistical material issued by the bureau from month to month.

The publication of the monthly economic review, The Agricultural Situation, has been continued regularly and it is now distributed to all extension workers and a large number of individuals who are in a position to give further distribution to the information it contains.

State and Federal Marketing Activities, the weekly mimeographed periodical, has been expanded to present a record of economic work in the States, particularly by the agricultural colleges, and to serve as a record of the plans, progress, and changes in personnel throughout the country. This change was made in response to requests of groups of economic workers who have had heretofore no national medium presenting a record of the progress of work. This change has met with wide approval and hearty cooperation by all concerned. The distribution of the periodical has been limited to those doing official work in some way related to the work of the bureau. This periodical is prepared entirely in this division.

Agricultural Cooperation, the semi-monthly review of activity in the field of cooperation; Foreign Crops and Markets, the weekly periodical of foreign information; the Division Letter issued by the Division of Fruits and Vegetables; and the Omnibus for crop estimate statisticians, have been reviewed in the Division of Information for matters of bureau policy.

The B. A. E. News has been issued weekly for circulation only to those on the staff of the bureau to keep them informed of developments and changes in work, to distribute items of importance in administration, and to maintain the highest possible interest and morale throughout the staff. The monthly Library Supplement prepared by the library staff has proved to be a very important addition to this periodical.



## REGULAR PUBLICATIONS

During the past year 45 publications have been issued in the various department series after preparation and editing in the editorial section. Twenty-one other publications have been edited and submitted and are in press, and 16 other manuscripts are being edited but have not yet been submitted for publication. Of these manuscripts about 70 are of a technical nature and 12 of a general character.

The editorial standards of the bureau have been steadily improved along lines approved by department editors, and the checking of statistics for form and accuracy has been continued. The bureau editors have in some instances thoroughly revised and rewritten manuscripts and in nearly all cases have advised with authors concerning form and method of presentation.

The bureau editors and writers have given considerable time to reading manuscripts for special articles and to preparing material for addresses by the Secretary, Assistant Secretary, administrative officers of the bureau, and others. During the year 109 special articles relating to the work of the bureau have been edited and accepted for publication in outside periodicals. The bulletin editor alone has written 21 of these special articles.

The preliminary report form of publication, which involves the issuing of small mimeographed editions of material which needs prompt distribution, has continued to expand during the year. Thirty-nine such preliminary reports have been edited and issued. The same care has been used in handling these manuscripts as with those intended for printed publications, and they have served to place information in the hands of those who can use it much quicker than would be the case had the material been held for printing.

The division has supervised the distribution of bureau publications, preparing distribution schemes for 66 new publications during the year. Orders for reprints have also been handled. Miscellaneous requests for bureau publications involve the handling of a large number of letters. The distribution of publications of the International Institute of Agriculture is under the direction of the division, and 13,000 copies of the department Yearbook were also handled. All orders for mimeographing and multi-

special orders, were recorded and transmitted, and over 500 orders for job printing were approved. The mailing lists of the bureau have been checked, new lists established, and changes handled in present lists. There are now 297 special mailing lists for the bureau.

## EXHIBITS

During the year the bureau assisted in the preparation of the two principal exhibits of the department—that for the International Livestock Show and that of the National Dairy Show. Special features in each show were prepared by the bureau, such material consisting of 25 to 30 per cent of each of the displays. A number of other exhibits were prepared and material was sent to the department representative in Berlin for showing at the fair in Leipzig, Germany. Representatives of the bureau assisted in handling the cotton exhibit at Waco, Tex., and in the preparation of an exhibit train which was run through the cotton section of the Southwestern States.

When the plan for the preparation of the extension service handbook was adopted, the full time of one worker in the division was devoted to the preparation of economic material for this publication. This has been submitted to the editors of the handbook and will be revised and expanded as new material becomes available.

## MOTION PICTURES

Two motion pictures on cooperative marketing were completed during the year, one on cotton and the other on tobacco, each a two-reel film. These films have proven to be very popular with the organizations which have ordered seven duplicates of them.

Plans for several films have been worked upon during the year, but none have been completed for release, and the division has cooperated with other bureaus in completing a number of general films.

## CONSUMER DEMAND

Investigations in consumer demand have been continued through the year. Particular attention has been given to the study of consumer demand for meat as a part of the general investigation of methods and practices in retailing meat. Information has been gathered by personal canvass of over 5,000 housewives in 16 cities and preliminary reports were issued in December, 1924, and June, 1925. This

material will be prepared for publication during the ensuing year. Two special consumer-demand surveys were made in Washington, one concerning the importance of brands in marketing butter, and another on the demand for fruits and vegetables.

These consumer-demand studies have met with hearty approval by distributors of the various products, since they provide a type of information which has not heretofore been available. The purpose has been to improve the method and accuracy of the surveys and describe the significance of the results. When considered in connection with information gathered by other methods it is believed they give new light on the question of important changes in demand and how advertising and other influences may be used effectively in maintaining consumer demand.

#### PHOTOGRAPHY

The work of the photographic laboratory has continued to increase

steadily. There was a slight increase in the quantity of photostat work produced and about 100 per cent increase in general photographic work, including the making of negatives, prints, lantern slides, and enlargements. Some new equipment has been purchased, but the principal handicap has been lack of space for the laboratory. The photographic files are constantly expanding, and during the year a special file of original drawings of charts has been started in space provided by the division. During the year photographers have made several field trips to obtain photographs of crops which have resulted in considerable expansion of our collection of photographs relating to marketing. There has also been an increase in the photographic work of cotton standards, and a considerable volume of work in photographing wool standards. The inauguration of an economic chart service has added considerably to the call upon the laboratory for prints of these charts.

