REPORT OF THE CHIEF OF THE BUREAU OF AGRICULTURAL ECONOMICS, 1933

United States Department of Agriculture,
Bureau of Agricultural Economics,
Washington, D.C., October 5, 1933.

Sir: I transmit herewith a report of the work of the Bureau of Agricultural Economics for the fiscal year ended June 30, 1933.

Respectfully,

Nils A. Olsen,
Chief of Bureau.

Hon. Henry A. Wallace,
Secretary of Agriculture.

The Bureau of Agricultural Economics has made every effort during the last year to put into effect the rule of rigid economy and at the same time to carry on its essential services. The basic character of this Bureau's work as a fact-finding, service, and regulatory agency of the Government has been demonstrated anew by the advent of the agricultural adjustment program. It is more and more manifest that planning in agriculture, whether it be by the individual farmer or by the Nation, requires a broad groundwork of accurate information concerning the country's crop and livestock production, prices, markets, and the economic and social relationships involved. The Bureau, in addition to maintaining its established program of research and service work, has cooperated with the Agricultural Adjustment Administration to the fullest extent, in supplying both basic information and the services of its staff.

COLLECTING AND DISSEMINATING CURRENT ECONOMIC INFORMATION

CROP AND LIVESTOCK ESTIMATES

During the spring of 1933 it became necessary for the Agricultural Adjustment Administration to have county estimates of acreage, yield, and production of wheat, corn, cotton, rice, and tobacco. Such information was essential in planning its campaigns on cotton and wheat, in examining the cotton offers, and in setting the official allotments for wheat. Detailed data of such magnitude had not hitherto been available. The entire staff of the Division of Crop and Livestock Estimates in Washington and in its 40 field offices was employed over a period of several weeks in preparing these estimates. The Bureau's regularly collected data on prices at the farm were used as a basis for determining the official parity price and in determining the processing taxes.

In addition to its regular scheduled crop and livestock reports, the crop estimating unit carried out several pieces of work involving noteworthy statistical undertakings and making available important results. Estimates of milk production on farms by States for the period 1929–32 were completed and published during the year. Similar data on chicken and egg production were practically completed and have been published since the close of the fiscal year.

Beginning in April 1933 the Division of Crop and Livestock Estimates began the publication of quarterly estimates of stocks of grain. More detailed information respecting supplies of certain basic commodities has become essential as the "surplus problem" has become one of national concern.

The administration of the Agricultural Adjustment Act also led to demands for more information relative to fruit production and utilization, and at the close

of the fiscal year one special survey—that of the clingstone-peach production in California—was under way. At the same time plans for additional investigation into the production of other fruits, particularly citrus, were being made in anticipation of the need for similarly detailed information on other specialty crops.

POTATOES MOVED BY TRUCK

The regular reports on potatoes and sweetpotatoes were maintained during the year, but a number of special potato reports were discontinued for lack of funds. One interesting feature of the January analysis of the disposal of the potato crop this year indicated, in rough measure, the striking growth of the use of motor trucks in moving potatoes to market. The indications were that at least 40 percent of the marketings of intermediate and late-crop potatoes up to January 1 had moved to market by motor truck.

CROP ESTIMATES HELPED GROWERS AND CANNERS OF VEGETABLE CROPS

An example of the way in which hard times stimulate the demand for crop reports is found in the vegetable-canning industry. Because of disastrously low prices, many canners went into the hands of receivers and others temporarily closed their plants rather than operate at a loss. Large numbers of canners, facing the problem of survival, made heavy demands on the staff of the Bureau to obtain reliable information on acreage and probable production, and an analysis of these data that would assist them in conducting their individual operations and in formulating plans for group action. Special effort was made to obtain data for use in cross checking the information on yields per acre, as well as data on condition of various crops. In spite of the fact that two of the major vegetable-canning crops—sweet corn and green peas—were affected by adverse weather and growing conditions in 1932, the early forecasts of production of canning crops issued during the summer came within a few percent of foretelling the actual sizes of the packs, before the crops were harvested and from 6 weeks to 6 months before the actual pack statistics became available through other official sources.

It is the constant effort of the Bureau to present the current situation in regard to production in all lines of livestock, as well as crops. Concerning the technical method of estimating the pig crop, the knowledge gained from annual surveys of the pig crop for 10 years made it possible this last year to prepare definite estimates, fall and spring, including the number of sows farrowed and pigs saved. Although data on actual marketing are not yet complete, it is apparent that the estimates for the 1932 pig crop represent an important new step in statistical accuracy in this field.

In respect to poultry production, revised estimates were completed and published during the year covering the numbers and value of chickens on farms January 1; chickens raised, eaten on farms, and sold; hens and poultry on farms January 1; and eggs produced, eaten on farms, and sold to date; these estimates covering the entire period 1925–32. This gives the poultry industry a background of fact that has been unavailable hitherto. The current reports issued, showing numbers of hens, pullets, and young chickens in farm flocks and the number of eggs laid on the first day of the month, now give reliable information on production.

Some features of the Crop Reporting Service have been eliminated because of reduced funds. Among these are the special fruit production and utilization surveys, the annual inquiries regarding the quality of the fruit crop, potatoes, and sweetpotatoes, the report on March 1 farm stocks of potatoes, estimates of the cucumber crop grown for pickling, planting-intention reports on most of the commercial truck crops grown for shipment, and various current season reports on minor vegetables, fruits, and canning crops. In addition, it was found necessary not only to curtail the content of the reports issued but also to limit closely the number of copies for direct distribution. The monthly reports on fruit and potato prospects containing pertinent comments from the various States to amplify the regular statistical information were discontinued in the interest of economy.

WEEKLY ESTIMATES OF COTTON GRADE AND STAPLE

In response to rather insistent demands from the producers and the trade for more timely information on the quality of cotton during the ginning period, a series of weekly reports was inaugurated. These reports, summarizing the various grades and staples week by week for each of the cotton-producing States and their major subdivisions, were released for the first time this season.

Data on the quality of cotton ginned at individual gins that furnished samples for classification, showing the number of bales of each grade and staple ginned during the season, have been furnished the ginners for the last 5 years. In addition, in response to their requests for more detailed information, copies of the classification sheets, without numbers identifying individual bales, were supplied each ginner during the 1932–33 season as soon as his samples were classed.

This service met with a hearty reception and has occasioned much favorable publicity in the country press. Ginners and cotton growers freely expressed the opinion that this service was very valuable this season, for it not only acquainted producers with the quality of cotton grown in the various localities, but it was a direct aid to them in properly marketing their crop. It is believed that this type of direct, prompt service will have a decided effect in that it will enable growers to decide on the kind of cotton that will return to them individually the largest net profit.

CROP AND LIVESTOCK INFORMATION FROM FOREIGN COUNTRIES

It has been the objective of the Bureau to build up gradually a clearing house of information which should keep the American farmer and public apprised currently of agricultural production and trade over all the world. This information service has been fairly well perfected within the United States and is likewise within range of accomplishment in regard to the principal competing countries. Progress in this field, however, has been somewhat retarded by lack of funds to develop the Foreign Agricultural Service of the Bureau, authorized by the act of June 5, 1930.

During the last year the procuring of information on production in foreign countries and competitive supplies has involved personal investigations of crop conditions and yields of wheat, corn, cotton, and other staple crops; and for some countries, in the absence of Government forecasts, Bureau representatives have made tentative forecasts of these crops in order to supply American interests with advance information. Independent estimates of fruit and nut crops have constituted practically the only information available to American interests on these crops in many competing areas.

For the leading crops that compete with American products, an analysis has been made in each case of crop information respecting size of crop, grade or quality, domestic utilization, exportable surpluses, or import requirements. Similar information is procured and corresponding analyses have been made on wool, pork, lard, and butter. On the demand side, the Foreign Agricultural Service has gathered and disseminated information on economic conditions and purchasing power in foreign markets, trade barriers, and other factors affecting world consumption of American farm products. This last year one could scarcely pick up a trade paper or listen to a radio market report in this country without learning facts on the foreign agricultural situation gathered originally by the Bureau's staff.

England represents the leading export market for American apples and fresh fruit, and the reports by the fruit specialist stationed in London on the prevailing prices for different varieties, current and prospective arrivals, and condition of the market, have proved especially useful to apple, citrus, and other fruit exporters. The Bureau's fruit specialist at London has been able to advise many individual growers and shippers in the United States as to the condition of their packs and the reputation of their brands, and to make suggestions designed to increase the volume of American fruit exports to the English and European markets and the price. During the year the imposition of sanitary restrictions in France and governmental regulations in other markets created new market problems for American shippers and led to intergovernmental negotiations, in which the Bureau's fruit specialist in his capacity as a representative of the American Government was able to be of substantial assistance.

The livestock and meat specialist in London has furnished monthly reports on the wool and pork markets of England. The reports on pork have had particular significance in view of changing price and supply conditions in the English bacon and ham markets, brought about by the quota restrictions. During June 1933, for the special use of the Agricultural Adjustment Administration, a study was made, by London and Berlin representatives, of the Netherlands plan to control hog production and raise prices to producers.

Prices of hogs advanced substantially under the Netherlands plan partly because of a liquidation of heavy supplies and partly because of price-fixing policies. Unprofitable hog prices had so curtailed breeding operations that production-control measures had not been subjected to a real test.

Reports from the Berlin staff continue to be the leading source of our information on foreign competition and demand in northern, central, and western Europe for American wheat, cotton, lard, and fruit. Development of the German and French wheat industries to an export basis, a substantial recovery in the continental textile industry, and, in spite of severe competition, gains in consumption of American fruit on the Continent, were some of the features of reports during last year from the Berlin office. The Berlin office is likewise a source of some information on the wheat situation in Russia. Developments in Germany in respect to the situation in regard to animal fats have been given particular attention, in view of the adverse effects which the extremely high German import duties and monopoly control of fats are having on the exports of American lard.

USE OF AMERICAN TOBACCO IN EUROPE

A study has been made by a tobacco specialist in the Foreign Agricultural Service for each of the European countries of the quantity and quality of tobacco production and manufactured tobacco products and of consuming habits, and the influence of these factors on the demand for American tobacco. The report classifies the types of tobacco being grown at present in the European countries, estimates production, and indicates a tendency toward increased production in several countries. An examination of the tobacco products of each country discloses the extent of utilization of American leaf in these products. It is pointed out that changes are taking place in the kinds and sources of the leaf entering into these tobacco mixtures, and changes in this respect are curtailing the demand and consumption of American leaf. Slight changes are taking place in consumption habits and in consumer demands, but to a considerable extent changes in consumption of American leaf are being influenced by monopoly policies and discriminatory tariffs. Preferential tariff rates for colonial-grown tobacco and low purchasing power are other factors curtailing the use of American leaf.

WATCHING THE ORIENTAL MARKET

The restrictions in the European markets have given oriental outlets for American farm products added significance. Indications are that China and Japan are coming to be regarded as increasingly important markets for American wheat, cotton, and tobacco. In most of these lines, however, American farmers must meet severe competition from wheat from other exporting countries, from foreign cotton, and from flue-cured tobacco grown in China. In view of the almost complete lack of reliable current information in China, great dependence is placed upon the reports from our Shanghai office.

DEMAND FOR AMERICAN COTTON IN JAPAN

Japan has attained a position of leading importance as an importer of American cotton. In 1932–33 Japan imported more cotton from the United States than from any other country. As the consumption of American cotton is variable, a study has recently been completed by a cotton specialist of the Foreign Agricultural Service, of the factors determining the consumption of American cotton in the Japanese industry. The study reveals the significance to the consumption of American cotton of the increasing exports of fine piece goods from Japan requiring the use of medium- and high-count yarns and accordingly larger percentages of American cotton in the mixtures entering into these yarns. The use of American cotton is more or less indispensable in the medium- and high-count yarns, but in yarns of 20 count the price of American cotton in relation to the price of Indian cotton determines to a considerable degree the percentage of American cotton. In the low-count yarns, the use of Indian cotton predominates and except in years when the price of American cotton in relation to Indian cotton is extremely favorable, as in 1926–27 and 1931–32, it is difficult for American cotton to displace Indian cotton in these yarns. In years when American prices are low, however, American cotton displaces Indian cotton and the aggregate consumption of American cotton is greatly enlarged.

AGRICULTURAL OUTPOSTS IN THE SOUTHERN HEMISPHERE

In the Southern Hemisphere, the offices of the Foreign Agricultural Service in Argentina, Australia, and the Union of South Africa were called upon last year to provide detailed information respecting wheat, wool, flaxseed, dairy products, tobacco, fruit, and beef. The studies made by the staff in Buenos Aires have assumed special significance in view of the current interest in plans for reciprocal

trade agreements with Latin American countries. The situation respecting wheat production in Argentina and Australia has been fully reported to our market currently. The predominance of Australia in the world's wool trade has made the reports from the representative at Sydney of value to American producers. In South Africa, where fruit and tobacco production is gaining in importance, reliance is placed upon the studies of our representative to provide the fact background concerning the actual and potential replacement of American fruits and tobacco in the British markets by South African products. Deciduous-fruit exports from South Africa, which in 1932 were 40,000 shipping tons, will probably reach 80,000 tons within 5 years. Citrus-fruit exports, which in 1932 were 2,000,000 boxes, will probably reach 3,000,000 boxes in 5 years. The trend of tobacco production is upward.

COMMERCIAL POLICIES OF FOREIGN COUNTRIES AND TRADE BARRIERS

An important function of the Foreign Agricultural Service is to supply current information and to conduct research on the commercial and economic policies of foreign nations as they affect competing supplies and agricultural exports from the United States. During the last few years tariffs, quota restrictions, and other trade barriers in foreign countries affecting American agricultural exports have increased enormously both in number and in severity. These measures have greatly reduced the outlet for some of our products in important foreign markets and have been a contributing cause of the decline of farm prices generally in the United States.

WHAT TRADE BARRIERS HAVE DONE TO OUR EXPORTS

During the year a report entitled "World Trade Barriers in Relation to American Agriculture" was prepared in response to Senate Resolution No. 280, 72d Congress. This report, printed as Senate Document No. 70, 73d Congress, contains a description of the various types of measures affecting agriculture which are in operation in foreign countries at the present time and indicates the nature of the conditions which have given rise to them. It also contains an appraisal of the effects of these measures on several major agricultural commodities and groups of commodities.

It is significant that in the case of wheat, it is estimated that the direct effect of trade barriers alone in 1932 was to make wheat prices about 25 cents a bushel less than they would otherwise have been.

WHAT OUR COMPETITORS ARE DOING IN COTTON

Egypt begins to loom up in the cotton trade. Here is an example of long-range appraisal so important to our Cotton Belt. Egyptian cotton is second only to Indian cotton as a competitor with the American staple in world markets. A field study of the factors determining cotton production in Egypt was completed in June 1933 by a cotton specialist in the Foreign Agricultural Service.

The increase in acreage and higher yields resulting from shifts in varieties of cotton are the chief factors in appraising future Egyptian production. The expansion of the cotton area from the present 2,000,000 acres to 2,750,000 or 3,000,000 acres depends upon the completion of a land-reclamation program costing almost $100,000,000. It is estimated that this development will require 25 years.

There has been a downward trend during the last 20 years in the yields of Egyptian cotton, owing in part to an expansion of the acreage of long-staple but low-yielding varieties. This trend has recently changed, and the present tendency is toward shorter staple but higher yielding varieties of cotton.

If a part of the reclamation program is completed and the trend toward a higher yielding but shorter staple cotton continues, Egypt, in the next 5 to 20 years, may produce between 1,800,000 and 2,400,000 bales of cotton. Not only will an increase of cotton supplies have an influence on the world prices for American cotton but the shift in staple length will likewise be significant.

CURTAILMENT OF THE FOREIGN AGRICULTURAL SERVICE

All of the field offices and the personnel as constituted a year ago functioned during the year 1932–33. At the end of the fiscal year, however, economy measures necessitated closing the offices in Australia and the Union of South Africa and recalling the Bureau's representatives there. One man each was recalled from the offices in Buenos Aires, Belgrade, and Marseilles.

STANDARDIZATION AND GRADING OF FARM PRODUCTS

The events of the last year served to emphasize the value of the standardization and grading of farm products by a governmental agency. It cannot be too often reiterated that orderly, efficient distribution of farm products must rest upon a system of standardized grades which is universally recognized and respected by buyers and sellers. The Bureau's work in this field has now progressed so far that the results seem to justify the conclusion that this is a governmental function which should be broadened into a more complete and Nation-wide service. There can be little question that the standardization and grading of important agricultural products is a service which the Government can and should render, not only in the interests of producers but also of the whole public.

GRADING CANNED FRUITS AND VEGETABLES

The development of grades as a basis for the grading and certification of canned fruits and vegetables, authorized 2 years ago, has been pushed as vigorously as possible during the year. Grades have been promulgated by the Secretary of Agriculture for canned corn, both cream and whole-grain style, tomatoes, peas, and snap beans, and tentative grades have been formulated and are now being used for 22 additional canned fruit and vegetable products.

There is constantly increasing evidence of the interest of canners, distributors, and consumers in uniform quality grades for these products. The Bureau, when requested, inspects and certifies the quality of such canned goods on the basis of its grades, charging a small fee for the service. This is done for the information of canners or distributors in advance of labeling. Inspections may also be made of samples drawn from specific commercial lots in transit or in storage; in such cases the certificates are used to establish the quality of the merchandise in a particular transaction, and sales may be negotiated on the basis of the certificate rather than by the shipment and examination of actual samples. The method of sale by sample imposes a considerable burden on the industry as it often involves the shipment of many samples to many prospective buyers before a sale is made. During the year at least one large regional canners' association began to report the sales of its members in the terms "Grade A", "Grade B", or "Grade C." This is a significant development as it has heretofore been regarded as impracticable to establish a market-reporting system for canned fruits and vegetables, as has been done for numerous other farm products, because there was no recognized grade foundation on which to base sales reports.

One of the most significant developments during the year has been the rapidly growing interest on the part of consumers in the labeling of canned fruits and vegetables by grade. The consumer is now almost entirely dependent upon a general knowledge of the quality of certain advertised brands or upon the statements of the retailer. There is such a wide range of commercial value above the substandard line established under the McNary-Mapes amendment to the Food and Drugs Act that consumers should be provided with reliable information as to quality variations as a guide to their purchases of these products. There is such a multiplicity of brands, both advertised and unadvertised, that no consumer can hope to learn the merits of all the brands likely to be found in retail stores in any one town. Moreover, many labels carry not only meaningless but also misleading statements with respect to quality.

One of the interesting developments this year has been the disposition of some canners to label sizable quantities of their packs in the terms of the grades formulated by the Bureau, such as grade A or grade B. Interest on the part of public purchasing institutions in the advantage of uniform grades is also increasing. During the year the city of Boston and the Cook County Emergency Relief Committee of Chicago, one of the largest of its kind in the United States, incorporated the grades recommended by the Bureau in their specifications for the purchase of canned fruits and vegetables. Substantial quantities of these products also were graded by the Bureau for Federal purchasing institutions.

INSPECTION OF FRESH FRUITS AND VEGETABLES

The value of uniform grades and official inspection is well recognized in the fresh fruit and vegetable industry. During the year the Bureau inspected 43,985 carloads in the city markets, and 216,792 carloads at shipping points in cooperation with the States. This was a decrease of 74,871 cars from the previous year, the decrease being largely due to a decrease of about 181,000 carloads

moved to market by rail last year. There are now only three States with which the Bureau does not have cooperative agreements for inspection at shipping points.

An interesting development in the shipping-point inspection service in Puerto Rico, conducted in cooperation with a growers' organization, was the willingness of European receivers to make direct purchases of citrus fruits f.o.b. shipping point on the basis of Federal grade certification. In previous years most of the Puerto Rican fruit exported to Great Britain moved through New York, but last year direct shipments were made from San Juan to Liverpool. Growers were not slow to realize the benefits to be derived from standardization and official certification, and the percentage of fruits shipped under Federal grades increased rapidly.

An important development of unusual interest to exporters of apples and pears was the passage by Congress on June 10, 1933, of the so-called "Export Apple and Pear Act". In general terms this act makes it unlawful to export apples or pears unless they are accompanied by a certificate issued under authority of the Secretary of Agriculture showing that such fruit meets the Federal or State grade recognized by the Secretary as the minimum of quality for shipment in export. In effect, this legislation makes mandatory the cooperative arrangement previously in operation between the fruit interests and steamship lines under which export shipments of apples and pears would not be accepted for shipment by the steamship lines unless accompanied by the export form certificate issued by the Bureau.

RICE-INSPECTION SERVICE

Rice grading, especially in the States of Louisiana, Texas, and California, is becoming an important factor in the marketing of rough rice. It provides a basis for a definite market-news service and for the establishment of equitable premiums and discounts. The demand for rice grading under the supervision of the Bureau is steadily increasing, and a large number of rice producers, millers, and exporters believe that compulsory grading of rice would be of distinct advantage in the marketing of this crop.

Federal-State grade certificates covering 9,385 commercial lots of rice were issued during the year. These inspections represent an increase of 579 inspections over the inspections made during the previous fiscal year.

Not only do rice producers use this service to a large extent in marketing their rough rice but each year the rice exporters are using the grading service to a greater extent in connection with the export sales of milled, brown, and rough rice. Government agencies that loan money to rice farmers for production and marketing purposes are demanding Federal-State rice-grade certificates to an increasing extent. Also the grade certificates are being used to a greater extent each year in connection with the issuance of insurance policies covering rice and the settlement of insurance claims.

CERTIFYING OTHER PRODUCTS

Certification work based on Federal standards was continued throughout the year for dairy and poultry products, this work being extended in Washington, New Jersey, Pennsylvania, and Massachusetts under new cooperative agreements with these States. Shipping-point grading service at several points in Missouri and Kansas was resumed after a lapse of several months. Certification work was carried on in regard to hay, beans, soybeans, and rice, and in the verification of the origin of alfalfa and red-clover seed.

An important outcome of the use of Federal standards in the marketing of beans in Michigan was the interest shown by distributors in consuming territories in the use of branded bags showing the U.S. grade. This practice has been satisfactory to distributors and carries the benefits of Federal standards and inspection closer to the consumer.

The continued movement of soybeans for export, which began during the fall of 1931, resulted in an increased number of inspections. The total quantity inspected for export last year was 2,760,000 bushels, as compared with 1,850,000 bushels during the previous year. The satisfaction with which these soybeans were received at German and English mills indicates that the quality represented by the grade U.S. No. 2, on which they were sold, is satisfactory for the purpose and reflects an accuracy and consistency in the application of Federal standards to export shipments.

TWENTY THOUSAND RANCHERS COME TO SCHOOL

A striking and effective educational activity was the livestock-grading demonstrations conducted in cooperation with the Extension Service in various parts of the country. As has been the case for several years, one man devoted practically his entire time to such work, largely in the intermountain and far-western sheep- and cattle-producing areas. Another spent considerable time in similar work in the Middle West and in the eastern and southeastern lamb-producing areas. In the case of the specialist first mentioned, the demands for his services always far exceed the time available and his itinerary is usually made up from a year to 18 months in advance.

Some of these grading demonstrations were held at agricultural colleges, but most of them were held on individual ranches. In all instances, live animals were used. On the ranches cattle were rounded up on the range and brought in, in whatever numbers the grader required for his purpose. Many people drove from 50 to 100 miles to attend. Demonstrations have been held on some of the same ranches for 4 years. At all such gatherings the grader not only actually sorts the animals on the basis of the Bureau's standards, always giving reasons for his action, but he also gives his listeners pertinent information regarding central livestock-market practices and consumer preferences for meat. In other words, he emphasizes the economic basis for the standardized grading.

More than 20,000 persons attended these livestock grading meeetings. It was necessary during the year to decline 15 requests from States for these demonstrations because of the lack of personnel.

WOOL-GRADING SCHOOLS

Twenty-four wool-grading schools were held during the year in North Dakota, South Dakota, and Nebraska. They were held under the auspices of the Extension Service and colleges, with the wool growers' associations cooperating. Records indicate that these schools reached a large part of the agricultural population engaged in wool growing.

MEAT GRADING

The demand for officially graded and stamped meats has continued to expand in proportion as the consuming public has become acquainted with the grade names and their relation to quality. The total of all meats graded during the year was 231,098,192 pounds. The beef-grading branch of the service showed an increase of 29,695,069 pounds, or 16.2 percent, over the previous year. Approximately 18,000,000 pounds of beef alone were graded every month, but the beef-grading service is at present very limited in scope.

At present there are many standards for meats as set up by different packers, and a general lack of uniformity of such standards from season to season exists among packing concerns who do their own branding. Neither the producers nor the consumers of meat animals will receive maximum benefits from grading until a single set of uniform standards is in effect the country over.

TOBACCO GRADING

Two State legislatures enacted legislation during the year for the compulsory grading of tobacco. The first was Maryland. To meet the terms of this law, our Tobacco Section is now perfecting standards and grades for the Maryland types, and negotiations for a cooperative agreement with the Maryland authorities are under way. More recently the Virginia General Assembly in special session enacted into law a bill providing for the compulsory grading of tobacco produced in the Virginia fire-cured district. This is one of the four types of tobacco produced in the State, and the measure was sponsored by growers in the district affected.

The establishment of standard grades for the various types of tobacco is fundamental and must precede changes and improvements in tobacco-marketing methods, some of which are antiquated and grossly unfair to the grower.

GRADING MADE MONEY FOR GROWERS

An incident may be cited in the Virginia fire-cured district the past year in which an association of growers, without resorting to pooling operations, made intelligent use of the tobacco-grading service, to their financial advantage. Stop prices were placed on each grade so that no tobacco within the grade sold at less than a certain minimum price, determined by current market conditions. This,

in turn, brought about an average increase of 20 percent in the selling price per grade as compared with the average selling price for the same grade under open-market conditions. The most glaring weakness of the auction-marketing system is the lack of stability of prices according to grade.

During the year the tobacco-grading service was utilized by the Virginia Dark Fired Tobacco Growers' Association, the Stemming District Tobacco Growers' Association, the western and the eastern Dark Fired Tobacco Growers' Marketing Associations, and the Northern Wisconsin Tobacco Growers' Cooperative Association. The Stemming, eastern, and western associations are located in Kentucky and Tennessee. Grading service was supplied on independent floors in markets of Virginia, North Carolina, South Carolina, Kentucky, and Tennessee, and a similar service was supplied to the Florida Shade Tobacco Credit Corporation, which is an association of growers, dealers, and packers of shade-grown tobacco produced for cigar wrappers.

REGULATORY SERVICES

PERISHABLE AGRICULTURAL COMMODITIES ACT AND PRODUCE AGENCY ACT

The Perishable Agricultural Commodities Act of 1930 requires that any individual, partnership, corporation, or association carrying on the business of a commission merchant, dealer, or broker in the handling of fresh fruits or fresh vegetables in interstate or foreign commerce shall be licensed by the Secretary of Agriculture, and it makes certain practices in the handling of such products unlawful.

The Produce Agency Act is a criminal statute providing fine or imprisonment for the fraudulent or dishonest handling of produce by a commission agency. Violations of this act, therefore, are reported to the Department of Justice, and convictions are secured only after trial in Federal district courts. Convictions or pleas of guilty were obtained in Federal district courts in 12 cases during the year comprising 20 separate complaints. In 3 cases the court imposed sentences of 3 months' imprisonment, in 2 cases the minimum fine of $100 was imposed, and in other cases fines of $200 or $250 were imposed.

Work done in enforcing these two acts shows little change during the year in the number of complaints handled but does show considerable increase in the number of hearings held and the number of orders issued by the Secretary under the Perishable Agricultural Commodities Act and in the number of cases transmitted for prosecution under the Produce Agency Act. Under the Perishable Agricultural Commodities Act, at the close of the fiscal year, 14,347 licenses were in effect as compared with 15,327 in effect at the beginning of the fiscal year; 2,535 complaints of violations of the act were filed during the fiscal year as compared with 2,482 filed during the preceding year; 205 formal hearings were held, as compared with 172 held during the previous year; and 371 cases were disposed of by decisions of the Secretary as compared with 80 cases covered by decisions during the previous fiscal year.

Since the shortened procedure, after waiver of hearing, was provided to expedite disposing of complaints under the act, the instances in which the parties to complaints have availed themselves of this privilege have been increasing constantly. During last year, about 37 percent of the cases disposed of were decided under a shortened procedure which involves the submission of the facts by both parties to the Department of Agriculture for decision without a formal hearing in which oral testimony is taken. This procedure reduces the expense to all parties concerned and expedites action.

THE UNITED STATES COTTON FUTURES ACT

The administrative duties of the Bureau in the enforcement of the United States Cotton Futures Act are essentially of a service character. The principal duties at this time are: (1) The certification of the grade and staple of cotton delivered in settlement of futures contracts; (2) the supervision of difference quotations on grades above and below Middling in 10 spot cotton markets designated as bona fide spot markets, the averages of which are used in calculating the prices at which such grades as are tenderable may be invoiced when delivered; and (3) an information service on cotton price quotations. The act does not undertake to deal with such matters as the conduct of trading upon the exchanges, the truth of gossip or rumors circulated about the market, or the extent of allowable price fluctuations which in recent years have been the subject of public concern; nor does it provide authority to obtain information concerning these mat-

ters. In recent years and particularly last year when speculative short selling of cotton was popularly believed to be contributing to the demoralization of prices, the lack of comprehensive information of this kind has proved a handicap not only to corrective action but also to the formulation of an intelligent policy with respect to speculation, and to the control of manipulative trading practices that might exist.

The various lines of work authorized by the Cotton Futures Act were continued by the projects already established, and there was a notable increase in the classification and certification of cotton for future contract delivery—224,987 bales as compared with only 42,148 in the preceding fiscal year.

THE UNITED STATES COTTON STANDARDS ACT

The more important features of the United States Cotton Standards Act, passed in 1923, are to establish the official cotton standards of the United States as the legal basis of spot cotton transactions in interstate and foreign commerce, to provide for the classification of any cotton or samples submitted for the purpose to officials of the Department, to extend existing authority for the standardization of cotton, and to authorize the licensing of cotton classifiers upon presentation of evidence of competency. The only mandatory provision of the statute is that which requires that the official standards shall be used in all transactions in interstate or foreign commerce in which any standards or systems of classification are used.

Shortly after the enactment of this legislation the way was cleared by a series of agreements with nine of the principal cotton trade organizations of Europe for use of the official grade standards in international trade. These agreements originally obligated the Department for 2 years. They have now been in effect for 10 years, the fifth biennial Universal Cotton Standards Conference having been held in Washington last year. These biennial conferences are for the purpose of approving copies of the universal standards for American cotton for use by the Department of Agriculture and by the European organizations during a 2-year period. At the 1933 conference 65 full sets of copies of the universal standards totaling 1,300 boxes and an additional 170 boxes were approved.

Copies of the universal standards, and of the other official cotton standards of the United States, continue in general use throughout the world wherever American cotton is sold. A total of 3,614 boxes of the standards for grade and color were distributed during the year as compared with 2,847 boxes in the previous year. Staple types distributed totaled 5,484 as compared with 6,829 during the preceding year. Numerous orders for copies of the standards were in process of handling at the close of the fiscal year.

Revised standards for Extra White cotton were promulgated during the year. The Extra White standards apply in the grade classification of upland cotton wherever grown, which includes all of the American commercial production except the American Egyptian and sea-island types. As repromulgated the Extra White standards conform with the White grades of the universal standards in leaf and preparation and simplify primarily the color differences. In preparing the new Extra White standards, bales were selected from each major section of the Cotton Belt, and as a substantial part of the crop in some seasons is of the Extra White color, it is expected that the new standards which became effective August 10, 1933, will contribute to the convenience and accuracy of classification of cotton by its color description.

The work of supervising cotton classifiers licensed under the act has continued to grow in importance. Of the 260 licenses issued during the year, 202 represented renewals and 58 were new licenses. The use of licensed cotton classifiers by several of the leading cotton cooperative associations continued. Reports from licensees indicated that during the last cotton season they determined the grade and staple of more than 3,700,000 bales. The more general recognition of the value of the service given by licensed classifiers under supervision of this Bureau and the widespread use of the service in a number of the cotton States have been helpful in carrying back to individual growers information that has enabled them to obtain premiums for better qualities corresponding to premiums applying in the larger markets. At the same time there is reason to believe that the service has been helpful in retarding or preventing the gradual lowering of the quality of production which in the past has resulted from inadequate knowledge among farmers as to the grade and staple of cotton produced by them.

Several of the Bureau's specialists in cotton classing were designated to assist the American Red Cross in connection with claims involving large quantities of cotton issued to that organization for the relief of distress pursuant to a joint

resolution of the Seventy-second Congress. Representatives of the Bureau had had reclassified for the American Red Cross approximately 80,000 bales by the close of the fiscal year.

The Cotton Standards Act was amended by a joint resolution of Congress approved March 4, 1933. In substance this amendment provides for the extension to cotton growers of additional facilities for the classification of cotton as authorized in the Cotton Standards Act, and authority, not heretofore available, is given the Secretary of Agriculture to license samplers. No additional funds have yet been made available for these purposes.

UNITED STATES WAREHOUSE ACT

The United States Warehouse Act is a semiregulatory activity. Its licensing provisions are not mandatory, but when a warehouseman elects to be licensed he is subject to all the requirements and penalties of the act. Separate regulations apply to each of the commodities eligible for storage under the act. During last year the following commodities were eligible: Cotton, grain, wool, tobacco, nuts, potatoes, sirup, dry beans, dried fruit, broomcorn, seeds, canned foods, cold-packed fruit, cottonseed, and cherries in sulphur dioxide brine.

The primary purpose of the Warehouse Act is to convert agricultural products into sound collateral in the form of warehouse receipts. With the closing of many banks in production areas and in financial centers, the difficulties in financing products that were waiting to be marketed were more acute last year than ever. In whole counties in many production areas no banks were open. Producers in those counties had either to sell their products as harvested or to turn to governmental financing agencies or to large city banks for credit. The same was true of many dealers and shippers of these products, not only in production areas but also in many trade centers. New financial and credit contacts had to be made. Many of these applicants for credit were strangers to these financing institutions. Naturally they had to present collateral that appealed to the lending agencies. The Federal warehouse receipt served as an acceptable medium. The Farm Credit Administration and the Reconstruction Finance Corporation have sought such receipts, and banks in every section, whether in agricultural production areas or in money centers, found in this receipt a form of collateral that enabled them to make an intelligent loan even though the commodity was at a distant point in a warehouse of which they had never heard before. Thus even in this trying year it was possible to obtain credit and in many instances at unheard-of low interest rates.

Difficulties in commodity financing during the year have not been without compensating benefits. On every hand is accumulating evidence that indicates that bankers are giving closer attention to this field and particularly to the character of collateral offered. More attention is being given to the laws under which receipts are issued and to the administration of such laws. There is need for greater supervision to protect warehousemen, depositors, and lending agencies from avoidable losses and unsound practices.

Regulations for field warehousemen were issued this year. For more than 6 years consideration had been given to this field. Wide variations in practice were found. The legal status of many field warehousing operations was questionable. Most bankers are unfamiliar with field warehousing, and many refused to accept field warehouse receipts. The regulations issued by the Department of Agriculture aim to place field warehouse receipts on a sound basis; they have been approved by leading bankers and various governmental financing agencies, including the Federal Reserve Board. They are the first really definite set of regulations in this field. Even though the warehouse operation is not licensed under the Federal Warehouse Act, many bankers are insisting upon a compliance with the principles and safeguards set forth in these regulations.

UNITED STATES GRAIN STANDARDS ACT

The United States Grain Standards Act was passed in 1916 and has been in force without amendments since that time. Its primary purposes are to establish uniform standards of quality and condition for grain for use throughout the United States and in foreign commerce; and to license grain inspectors to apply these standards, and to entertain Federal appeals from inspections performed by licensees, upon request of any interested party. Although the law is primarily service in character, it contains regulatory provisions designed to prevent fraud and misrepresentation in grain transactions and to promote fair dealing in the

industry. The official grain standards established under this act form an integral part of the marketing system in the movement of grain crops from producer to consumer through the various channels of transportation, warehousing, financing, future trading, milling, and exporting. The standards provide a common language for these operations supplemented by official unbiased inspection and grading.

At the close of the fiscal year there were 416 licensed grain inspectors in the United States, stationed at 169 inspection points in 33 States. The total volume of grain of all kinds inspected by these licensed inspectors under the act during the year was 1,160,435 car lots, or 1,537,478,000 bushels. Appeals were entertained and appeal inspections were made by Federal grain supervisors on approximately 7½ percent of the total volume of grain inspected. Appeal grades are used particularly in the grain movements via the Great Lakes and the rivers and canals, as well as in the coastwise movements, including those through the Panama Canal.

During the winter of 1932–33 a special and unofficial appeal grading service was conducted for the benefit of the American Red Cross on all wheat delivered to it by the Grain Stabilization Corporation for the purposes of unemployment relief. The inspection of all such wheat was supervised at the time of delivery, and the entire grain movement for this purpose was concluded in a most satisfactory manner. The Federal appeal service also established the grades on the major portion of approximately 9,000,000 bushels of Government-owned wheat delivered to the Brazilian Government in exchange for coffee.

In cooperation with the Food and Drug Administration, the Federal grain supervisors in the important grain markets assemble samples of damaged grain as well as evidences of adulterative practices. During the year 216 car lots and 6 barge lots of damaged grain were analyzed, and warnings were issued to the owners that such grain should not be mixed with sound grain. The prevention of grain adulteration by these methods is done in cooperation with organized grain exchanges to obviate violations of the Food and Drugs Act.

The official grain standards in effect during the year were those for shelled corn, wheat, oats, rye, grain sorghums, feed oats, mixed feed oats, and barley. The only change in these standards that was officially promulgated by the Secretary of Agriculture during the year was an amendment to the barley standards which established special grades for blight-damaged barley. A 4-year study of the grain standards, conducted for the purpose of bringing them into conformity with modern merchandising and processing practices, was completed. The resulting report in the form of Miscellaneous Publication No. 173, Proposed Revised Federal Grain Standards, has been issued.

Although the administrative procedure is somewhat settled as the result of 17 years' experience, new inspection problems continue to arise in connection with the changes in harvesting and merchandising methods. The grain trade is highly competitive in character, merchandising methods are complex, and notwithstanding the fact that the commercial inspection and grading of grain is not a precise science, producers and merchants demand and expect from a Government agency a degree of service of higher accuracy and efficiency than is attained by most commercial services. The task is a difficult one.

It has become apparent that the national grain-inspection program circumscribed by the provisions of the Grain Standards Act is inadequate in some respects to meet the modern and ever-changing conditions in the marketing and processing of grain. The demand for accurate inspection and for particularized information about grain quality increases each year, and it is increasingly difficult to meet these demands through an inspection system whereunder inspection is conducted by licensees of the Department, who are employed by States, grain exchanges, and boards of trade. Under the act there now prevails in numerous terminal markets what, in effect, amounts to a dual inspection service—a primary and required inspection by a licensed inspector, and a subsequent inspection made by the Federal Government as an appeal inspection by request of the shipper or receiver of grain. Under these conditions the repeated inspections and fees applied in many cases to car lots of grain moving to the ultimate consumer through several inspection points, and subject to numerous State laws, increase the costs of grain merchandising. Such repeated inspections also are a fertile source of intermarket grade variations under the national system of grain inspection governed by the Grain Standards Act.

MARKET-NEWS SERVICE

It is not too much to say that the Federal market-news service on farm products is unique. There is nothing quite comparable with it in any other country of the world. It supplies the producers, the distributors, and the public of the United States, daily, with the spot news of agricultural prices and markets; it functions with speed and precision roughly comparable to that supplied by the ticker service in the financial world; and it is relied upon by all parties as an unbiased, impartial, accurate source of information. In maintaining its market-news service, the Bureau last year operated about 10,000 miles of leased wire and maintained branch offices in most of the principal markets of the country.

THE EYES AND EARS OF THE AGRICULTURAL MARKETS

Last year was the eighteenth consecutive year of operation of the market-news service on fruits and vegetables. From Washington, and from the 22 market stations and 41 field offices which were operated last year, a steady stream of market news and other special reports was sent to all parts of the country. Something over 15,000,000 copies of such reports were issued, but this was a decrease of nearly 2,000,000 under those of the preceding year. The total number of names on all mailing lists was 81,704. Car-lot shipments of about 42 products were reported telegraphically by the carriers, and 4 additional products were reported by mail. Of these 46 products, all except 7 were covered by the daily market-news reports. Daily shipment reports were published on all of the 46 products.

The tobacco market-news service is intended primarily for the benefit of farmers. Nevertheless the reports are universally of such interest to the trade that members regularly visit the market-news offices or make sure that their names are placed on the mailing lists. Floor buyers usually obtain copies of the daily reports in the morning before the sale opens. The weekly reports are widely published in the tobacco trade journals. The tobacco market-news service was furnished this year in Virginia, North Carolina, South Carolina, Kentucky, and Tennessee.

In the case of cotton, daily telegraphic reports were received and disseminated from the important cotton centers in this country and weekly reports were sent in from the large cotton centers in France, Germany, England, and Italy. These reports contained current information on the state of demand for various grades and staples of cotton, premiums and discounts for grades and staples, quality sought and in supply, basic prices, fixations, and other pertinent factors regarding cotton marketing information required by producers, merchants, and others. The assembled data at Washington were reviewed and the more vital factors were embodied in a terse weekly market review which was transmitted by leased wire or commercial wire to the field offices by Saturday morning of each week.

FACTS IN A WORLD OF RUMOR

An interesting incident occurred during the national bank holiday (Mar. 6 to 16) which brought about a situation in the cotton markets probably without precedent in more than 60 years. The organized cotton markets in the United States found it necessary to close. The Liverpool and other foreign markets, however, continued business, and buying orders from foreign countries were reported to be plentiful in this country throughout the period. Business in American markets, therefore, although greatly restricted by the circumstances, continued in appreciable volume. A great demand arose for authentic market reports. The Division of Cotton Marketing immediately developed an emergency news service for the period of the banking holiday. Temporarily every field office was called upon to canvass its markets and to report by telegraph the qualities, prices, and number of bales sold each day. This telegraphic information was concentrated at Washington and was relayed by leased wire to points from which it was disseminated by telegraph and radio throughout the Cotton Belt. The Bureau files hold a large number of comments to the effect that these reports from a responsible Government agency, coming at a time when the markets were filled with rumors, were awaited in somewhat the same way as were various war-time communiqués.

Records show a steadily increasing use of the market reports covering dairy and poultry products. Not only market dealers and producers, but also officials, creameries, retail distributors, and other agencies are constantly requesting more information. New agencies, such as the State milk-control boards, are requiring more and more reports. Certain chain-store organizations state that they are

using these reports on trade output as one means of checking their own operations, and large buyers and processors of dairy products are using the reports in connection with the determination of price lists and in marketing operations. Certain newer items of the service, such as the weekly butter-production reports, weekly reports on receipts of eggs and poultry at midwestern packing plants, and shipments and receipts of eggs at Pacific coast points, have been particularly useful to concerns interested in those products.

The market-news service on livestock and meats, as the one on crops, came into being in response to the urgent needs of the industry itself. Prior to its inception a condition had developed in the livestock industry under which serious difficulties existed between stockmen and the market agencies that handled their stock. One of the chief complaints voiced by the stockmen was their inability to obtain prompt, accurate, and unbiased information regarding actual market conditions and prices on livestock and livestock products.

Although the market-news service varies according to the various commodity requirements, as will be apparent from the foregoing examples, the underlying purpose of the service is the same in all cases. It places the spot facts on supply, movement, prices, and related information almost instantly within reach of the persons who must have such facts. It functions from coast to coast and from border to border, with 10,000 miles of leased wire, branch offices in principal cities, and a staff of experienced observers and reporters.

The range and the capacity of the market-news service are greatly enhanced by the excellent cooperation received from the railroads, from distributors, warehousemen, and practically all those engaged in the agricultural trade. The almost universal attitude is that here is a business asset which both producers and public recognize and are willing to help make as complete as possible. It may be added that the expanding activities of the Agricultural Adjustment Administration cause the market-news service to be increasingly essential. It would seem scarcely possible to guide or influence the orderly distribution of farm products, according to any comprehensive plan, without having this daily spot news of shipments, movement, arrival, storage, prices, and related facts on a Nation-wide basis.

GENERAL ECONOMIC RESEARCH

Ecomomic research is the foundation on which is built practically all of our services in collecting and disseminating information respecting crops, livestock, and more general problems. Without adequate research it would be impossible to carry on the major lines for which this Bureau was established. Indeed, it would be impossible to meet the hundreds of problems that arise in the economic aspects of our agriculture. Research, in the sense that the word is here used, involves the study of specific commodity relationships—the investigation of production and marketing questions—and ranges to studies involving broad problems associated with the land and the farm population.

RESEARCH IN THE FIELD OF PRICE ANALYSIS

In all considerations affecting the income of agriculture and its relations with other economic groups the problem of price is of paramount importance. The Bureau has maintained a line of research in this field ever since its formation, but the work on these studies recently has been intensified in response to the urgent needs brought about by the depression.

Manifestly, the first requirement in such a research program is a background of statistical fact covering the developments of which the present situation is an outgrowth. Accordingly, during last year special effort has been made to bring this background material into such shape as would make it most valuable to governmental and other agencies charged with various responsibilities for an agricultural program. Crop-production statistics have been revised back to the date of the beginning of these estimates, this in itself representing a major piece of work. This revision will greatly improve the basis for analyzing the influence of prices upon acreage, yield, and production and the effect of variations in production upon prices of farm products in the United States. Data on world production are also being compiled and analyzed to show the effects of shifts and changes in world production on the prices of agricultural products, and the relation of the changes in production and prices to the kind and quantity the United States should produce.

The estimates of income from agriculture have been revised and improved during the year. This information likewise is basic to all measurement of the

economic position of farmers as a producing group. Gross farm income, which in 1919 amounted to nearly 17 billion dollars, fell to 9 billion in 1921, rose again to 12 billion in 1925, and then dropped to 5 billion last year. This strikingly outlines the course of the agricultural depression. Preliminary estimates indicate that the income will run to 6 billion for 1933. It is now possible to make a beginning toward estimating the monthly cash income from the sales of farm products for the country as a whole, and plans are being developed for such estimates by States and regions.

The effects upon agriculture of programs for the relief of other groups are important considerations. It is necessary to have an adequate current measure of farmers' expenses both of living and of production. Accordingly a revision was undertaken, this year, of the index number of prices that farmers pay for the principal articles they buy. This index has been made a better basis for determining price parities and changes in farm expenses. Incidentally, this revision has involved reorganizing the whole collection and compilation of data on prices paid by farmers.

The depression has intensified interest in the transportation service for agriculture and the rates or charges imposed upon farm products. As prices fall to depression levels, the maintenance of fixed transportation charges greatly disturbs the production and marketing of farm products. This fact has stimulated agricultural leaders to ask for readjustment in rates. The Bureau has contributed extensively to the preparation of data for use in rate hearings before the Interstate Commerce Commission. Upon request of the Commission an analysis of the general agricultural situation, showing the extent of the depression in the farm business, was presented in open hearings before it. Research in the relation of transportation services and rates to the production and marketing of farm products can be of great value in the reorganization of the Nation's transportation services and in developing policies respecting their relationship to agriculture.

Research is likewise contributing to an understanding of the significance of tariff rates upon products imported into this country and the possible effects of changing duties on imports. The relations between supplies produced in this country and prices, together with supplies and prices in foreign countries, have been analyzed to indicate the effectiveness of specific duties. Attempts have been made, furthermore, to determine the probable effect of reducing tariff duties in specific cases on production and consumption of a given farm product in this country; also the possible effect of changing a duty upon the production in specified foreign countries, and the imports from those countries into the United States. Conclusions based on such research have been utilized by those who are concerned with legislation and with negotiating treaties between the United States and foreign countries.

Special research services for specific agricultural industries have been maintained and developed insofar as possible. Important work has been done during the year in reorganizing and developing statistical services for the dairy industry. This has included new estimates of income for the dairy industry, and an analysis of factors affecting the prices, production, and consumption of dairy products. The results have been conveyed to representative groups in the dairy industry. Further research has been done in analyzing the competitive relations between the dairy industry in the United States and in important foreign producing countries. A study of international trade in butter and cheese has just been completed.

In regard to the particularly difficult situation in the canning industry, mentioned elsewhere in this report, it may be here noted that the Bureau collected and analyzed data on production, stocks, and prices of canned fruits and vegetables. The results of the analysis were taken directly to the industry and were utilized in developing its program for the present season.

Special research service was given to associations producing and marketing early potatoes. This showed the relation of local production to prices, the probable effect of prices upon production in the future, and the effect of the rate of movement to market upon prices. The experience in this case suggests the development of a similar service for other commodities, especially the perishable fruits and vegetables produced under highly specialized conditions and concentrated in a comparatively few local centers.

There is great need for the development of research data in the field of consumption and the effect of prices upon consumption. In administering the National Recovery Act and the Agricultural Adjustment Act, for example, it is necessary to consider the probable effects of the processing taxes and of any measures undertaken under the National Recovery Act that may affect prices,

upon the consumption of commodities and the distribution of income as between farm producers and other groups of producers. The Bureau is now assembling data on consumption, prices received by producers, wholesale prices, retail prices, wages and cost of services, with a view to determining what changes are taking place in the margins between producer and consumer and the causes of these changes, as well as their effects upon distribution and consumption.

FARM-CREDIT STUDIES

The Bureau conducts studies in the fields both of short-term and of long-term farm-mortgage credit. In some cases, the operating problems of the institutions that finance farmers are studied. The more important findings of studies completed during the year are as follows:

Since 1928 the farm-mortgage debt has decreased from about $9,468,000,000 to about $8,500,000,000. To a considerable extent, the reduction has resulted from an increasingly large number of foreclosures, but it is also due to the fact that new farm-mortgage loans have been made in smaller volume than formerly. Advances by 25 leading life-insurance companies averaged approximately $600,000 per week during the first 8 months of 1933 as compared with weekly averages of $3,000,000 from 1928 and 1930, inclusive; $2,000,000 in 1931; and $900,000 in 1932.

The total farm debt—mortgage and other—is estimated to be $12,000,000,000 or more. Annual interest charges on this debt are believed to fall between $800,000,000 and $900,000,000. In 1932 such charges absorbed approximately 16 percent of the total gross farm income.

Bankruptcies among farmers increased from 4,023 in the year ended June 30, 1931, to 4,849 in the year ended June 30, 1932. All sections participated in the increase except the East South Central States, the largest increase being in the East North Central States where the number of farm bankruptcies last year was 1,580 as compared with 1,025 in 1931.

A more complete statement on the farm-debt situation is available in House Document No. 9, 73d Congress, a special report prepared by the Bureau in response to a resolution of the House of Representatives. In addition, this report reviews plans adopted in other countries for relieving the mortgage situation and makes recommendations for readjusting the mortgage debt in this country.

Under the auspices of the National Land Use Planning Committee, an analysis was made of Federal seed-loan policies. The first Federal advances of this character were made in 1918, and since then advances have been made in 9 different years. Such advances amounted to approximately $64,000,000 in 1932, and $54,000,000 in 1933.

Advances for seed, feed, and similar items have been most numerous in the spring-wheat area of Montana and North Dakota, and in the cotton- and tobacco-producing sections of the Southeastern States. These sections were particularly in need of Federal assistance, owing mainly to unfavorable climatic conditions. Seed loans were used to finance, wholly or in part, the production of approximately 40 percent of the spring-wheat crop of the Northwest and 11 percent of the cotton and tobacco produced in the country in 1932.

Technical Bulletin 322, Agricultural Credit Corporations Affiliated with Cotton Cooperative Marketing Associations, was published in September 1932. Seventeen agricultural credit corporations have been organized since 1924 to act as financing affiliates for cotton-marketing associations. Only 5 of the 17 are now active; the rest were either forced to close or voluntarily ceased operations. As a general rule, such corporations were unable to escape large losses and their operating expenses consumed virtually all of their incomes. Moreover, they did not finance a large part of the cotton that was marketed through cooperative associations. Their new loans in 1930 amounted to about $7,000,000, but reached approximately $11,000,000 in 1931.

Such corporations did supply a needed financial service to farmers, however, and under better devised loan policies could serve a very useful purpose. Their adverse experience appears to have resulted from operating over too wide a territory to permit close supervision of loans, and from lending an amount which tended to reflect the gross return expected from a crop rather than the smaller amount actually needed by the borrower to produce his crop. More recent studies of small corporations in the St. Louis district indicate that cotton production can be financed with very small loss, even in a period of rapidly declining prices, if loans are made conservatively and are carefully supervised.

Several other studies are in progress, but results have not yet been published. One deals with agricultural credit corporations and livestock loan companies in

the St. Louis district. Another deals with country-bank policy in Arkansas A third is concerned with the financing of early potato production on the Eastern Shore of Virginia. A fourth reviews the history of farm bankruptcies under the National Bankruptcy Act of 1898 and deals especially with the recent amendment to this act.

RESEARCH IN FARM TAXATION

Two lines of action are essential to a fundamental improvement in the farm-tax situation. The first necessitates some redistribution of the tax burden. The second involves the selective reorganization of local governments and a realignment of local government functions to secure more economical use of funds.

In its research work respecting the first phase, the Bureau has completed a collection of annual data and computations of State and regional averages for farm real-estate taxes per acre covering the entire period since 1913. This collection gives a more adequate picture than has previously been available of the farm-tax situation during the last 20 years. The central fact is a rise of 141 percent in taxes per acre from 1913 to 1929. Although the acute distress among farm taxpayers has since forced substantial reductions, farm real-estate taxes in 1932 were still 89 percent higher than in 1913. The reduction has been very unevenly distributed among taxpayers and great numbers of individuals have obtained no reduction from the 1929 level. In three States even the State averages have not decreased. The ratio of property taxes to value of farm real estate in 1932 was nearly three times as great as in 1913. Since 1929, when farm taxes began to decline, the ratio of taxes to value increased 26 percent because the fall was more rapid in land values than in taxes.

With respect to the second phase mentioned above, local government and farm-tax studies have been carried on in cooperation with Minnesota, Kentucky, Louisiana, Montana, and Wisconsin. Reports have been published for the last three. The Wisconsin study estimated a possible 10 percent saving in government costs for a northern county and a farm-tax reduction possibly as great as 20 percent. The saving would result from substituting a county-unit school system for a district system, transferring all local road work to the county, and consolidating townships.

Both of the outlined fields of work require futher study, but investigations already made or under way have yielded important results. Farm taxpayers are struggling under an oppressive and unfair tax burden. Tax delinquency and tax sales are evidence of this distress. Two complementary means of relieving them are clearly indicated. One is a partial substitution of other taxes, principally the income tax, for the discriminatory general property tax (virtually a real-estate tax). The other is a selective reorganization of local government.

It is generally recognized that greater reliance on income taxation as a means of raising revenue to replace a part of the property tax is desirable. The Federal Government could aid in achieving this purpose by providing, in the Federal income tax, for offsets against State income taxes, analogous to the present offset in the Federal estate tax. Moreover, this should be conducive to greater uniformity in State income taxation. Since the Federal estate-tax offset was provided for, in 1926, 34 States have passed legislation to take full advantage of the offset allowed by the Federal Government. Should a similar provision be adopted with respect to the income tax, certain questions would arise as to Federal taxes and their coordination with State taxes—questions now of special importance, but beyond the scope of this report.

The Bureau's studies indicate that the more promising approach to local government reorganization in the interest of economy lies principally through educational work and sympathetic counsel in individual situations. Local governments cannot well be reorganized by broad groups, because many of them present special problems. The need in this field is for State and Federal assistance in the form of guidance and encouragement in studying possible increases in efficiency of local government in specific instances, and it is apparent that in order to effect real improvement in this field it is necessary to develop an informed public opinion along with fact finding and analysis.

SERVICES TO AGRICULTURAL INSURANCE COMPANIES

Work in agricultural insurance this year has consisted largely of meeting requests for advice on various problems that have confronted farmers' mutual insurance companies.

These companies have survived the economic depression in a gratifying manner. A few dissolutions have occurred, but in many States in which farmers' insurance

on a cooperative plan is well developed, not a single failure has occurred. Dissolutions of individual companies have taken the form of consolidations with stronger companies of the same class. Only in the one group of farmers' companies that specializes in the insurance of livestock against disease or accident, have the failures been relatively numerous.

The insurance work of the year has included further summaries of loss and expense statistics for farmers' mutual fire-insurance companies, and of data bearing on fire losses on farms, and the gathering of information on past and current activities of other classes of agricultural insurance companies, more especially of livestock-insurance companies at home and abroad. The annual fire losses on farm property has shown a distressing increase in the last few years, owing in part to physical deterioration of farm buildings and in part to economic stress affecting the usual hazard.

FARM-MANAGEMENT STUDIES TO INCREASE INCOMES

Continued low prices of agricultural commodities have increased the importance of studies on the business side of farming. Farm-management research is conducted to determine and evaluate the various types of farming in the country, and the farming systems and farm practices that will increase the farmers' incomes.

FARMERS' INCOMES

A survey of about 6,400 owner-operated farms shows that during 1932, after paying for current farm business expenses other than interest on debts and small amounts for improvements, an average cash balance of only $257 per farm was available for living expenses, payments on improvements, and indebtedness. But in addition these farmers had houses to live in and home-grown food for their families. In 1932 the cash balance was by far the lowest reported since 1929, when the average for 11,800 farms was $1,097. The decrease in cash balance during the 4 years, 1929–32, amounted to an average of $840 per farm studied, or 77 percent. During the same period, gross cash receipts decreased $1,655 per farm and cash outlay decreased $815 per farm.

The farmers' financial situation is not always clear to the city man, and in years of low industrial activity thousands of people with little or no farming experience seek advice from the Department concerning the possibilities of various agricultural ventures. To meet this situation, studies were made on the economic possibilities of small farms, to afford guidance to the prospective farm purchaser who wants a small farm for the support of his family, or for commercial purposes. It was found that one half acre of good land will produce the small vegetables, and that 1½ acres will grow all the vegetables and fruits needed by the average sized family. The advisability of keeping a small poultry flock, a few pigs, and a cow, as well as the maintenance needs of such livestock, and the amount of cash needed for operating the small subsistence farm were determined.

TYPE OF FARMING

Type-of-farming studies designed to determine the physical and economic factors that have shaped farming in each locality, and the trends of its development were pursued in nine States, each in cooperation with the respective State agricultural experiment station. Such studies are especially useful in programs of long-time agricultural readjustment. In Illinois, for example, agriculture is classified into distinctly different areas, or regions, traceable in part to market and transportation influences, for example, dairying near Chicago and St. Louis, and the truck crops near Chicago. Soil and topography account for the cash-grain areas and for the emphasis on livestock in other areas.

Some types of farming are particularly well adapted to the use of large-scale methods of operation. In a study of large-scale farming in the United States carried on jointly with the Bureau of the Census, it was found that of 7,875 farms classified as large scale, about 25 percent were fruit farms, and about 23 percent stock ranches. Five types—fruit, stock ranch, dairy, truck, and crop specialty—made up 78 percent of the total number of large-scale farms. Large-scale cash-grain, and cotton farms were relatively unimportant.

In periods when the farmers' purchasing power is low, it is of particular significance to consider the internal organization and operation of farms in terms of the crops and livestock produced, methods and practices employed, costs of production, and need for reorganization and improvement. Studies of this character were pursued in cooperation with State agricultural experiment stations in several

important areas devoted primarily to the production of cotton, early potatoes, grapes, apples, dairy products, corn and livestock, and honey.

In the Cumberland-Shenandoah section, for example, one apple producer received, over a 3-year period, 78 cents per barrel more for apples than was received as an average by a group of about 20 producers. A large part of this increase is attributed to better quality fruit obtained by more scientific practices in fertilizing, tilling, spraying, and grading and packing. The studies indicate that in the long run the extra expense was more than offset by the increase in yield and better average price received.

An example of the influence of marketing methods on farmers' returns is brought out in a study of the eastern grape situation. In 1928 growers who sold most of their grapes for truck shipment received 29 cents per hour for all labor spent on grapes as compared with 8 cents per hour received by growers who sold a large part of their crop to juice factories.

Choice of enterprises for cropping systems is illustrated by a study in farm practice with lespedeza. This crop fits readily into most of the well-established cropping systems of the area where it is commonly grown and can usually be included with little or no rearrangement of the other crops. Seeded early in the spring it will produce a crop of hay or seed the same year, and usually the shattered seed will come up and produce a crop the following year. Its use on run-down soils is highly recommended, since in many cases yields of corn, cotton, and small grains have been more than doubled at very little expense after lespedeza has occupied the land for from 1 to 3 years. In practically all farm-organization studies, high production per animal or per acre of land, and good management of the farm are associated with high net returns.

Studies of the relation of types of power to the amount of work to be done and the cost of performing different operations with different units of power and equipment were continued, in cooperation with State agricultural experiment stations and the Bureaus of Agricultural Engineering and Animal Industry. It was found, for example, that Montana farmers reduced their cost of fallowing $0.34 per acre by using the rod weeder in place of the duck-foot. This study and similar studies elsewhere indicate that substantial savings can be effected through proper adaptation of animal and mechanical power and equipment to the economic needs of the farm.

COST OF PRODUCTION

The data obtained on cost of producing cotton, corn, wheat, and oats were worked up in more detail than in previous years. The average cost of producing the 1932 corn crop, including land rent, was 49 cents per bushel. Wheat cost an average of 75 cents per bushel; oats, 36 cents per bushel; and cotton 9 cents per pound of lint. Excluding land rent, the costs were: Corn, 35 cents per bushel; wheat, 55 cents; oats, 24 cents; and cotton, 7.3 cents per pound. Acre costs were materially reduced below the costs of 1931, but because of lowered wheat yields, the bushel cost of wheat was only slightly lower in 1932 than in 1931. Bushel costs of corn and oats were substantially lower in 1932 than in 1931. The cost of producing a pound of cotton was about the same in both years.

ACTIVITIES IN THE FIELD OF LAND ECONOMICS

This Bureau has long urged the necessary of adopting a vigorous, consistent, and unified land policy that will give us a planned utilization of our land resources according to the uses for which our various types and grades of land are best fitted and with due regard to considerations of long-run public welfare. A land-use program for the Nation which involves a steady retirement of our poorest lands from agricultural production is now more imperative than ever. This is true because of our shrunken export market for certain farm products and because of the drastic slowing up in growth of population, not only here but in all the leading countries of the western world. Should the early and rapid decline of population in our large urban centers eventuate as now forecasted, this will have an important bearing upon the future of our domestic market for farm products and upon the use of the land.

During the last year the Bureau has actively aided the two Nation-wide committees (National Land-Use Planning Committee and the National Advisory and Legislative Committee on Land Use) devoted to promoting the adoption of a comprehensive program of land utilization. Such aid from the Bureau has taken the form of direct advisory work on the part of our staff and special studies regarding various aspects of land economics.

The ultimate application of an effective land-use program must be largely in terms of specific areas. This requires special study of the conditions, problems, and prospects of particular regions. Such a study was completed last year of land utilization in 13 hill towns of Vermont characterized by extensive farm abandonment. This study revealed clearly the waste and misery that attend the slow "natural adjustment" of an old settled area to the forces of decline and showed forcefully the need for a prompt and energetic program of reorganization with the help of the State.

An economic and social study of the southern Appalachian Mountain region was brought to completion during the year. This study, shortly to be published, has special value in connection with the Tennessee River development project since part of the area included covers roughly the upper half of the Tennessee River drainage basin. The fundamental problem for the 5 million people in the southern Appalachians is a problem of an overbalance of population in relation to the meager natural resources and opportunities.

Closely associated with studies like the foregoing are the land-settlement investigations. These are of particular importance now that continued unemployment and the growing drain on relief funds have turned the attention of governments, as well as individuals, back to the land. During the year a report entitled "State Land Settlement Problems and Policies" was completed which made available, for the first time, a summary and critical analysis of the experience of the various States in that field. This experience has not been a happy one and clearly suggests that land-settlement ventures must be selected and managed with unusual care if failure is to be avoided.

It may be said that the Bureau's work in this general field looks toward the ultimate retirement of submarginal land from agriculture. The presumption is that wise national policy will embrace the re-acquisition of much of this type of land either by the National Government or by local units. A definite beginning has been made during the year toward the delineation of various typical land areas within the country. A map was published showing the natural land-use areas of the United States with brief description of the characteristics of each. Estimation was made of the originally forested eastern half of the country, of the probable acreage of former farm land now available and to be available in the near future for forestry. A program has been inaugurated cooperatively with the Bureau of Chemistry and Soils and the various States for the complete classification and rating of the lands of the United States on the basis of their natural productiveness. Such tentative classification has been completed in 18 States and partially completed in 7 others.

FARM POPULATION MOVEMENT ANALYZED.

Our population is highly mobile. There is constant interchange between farm and city. This Bureau attempts to determine as accurately as possible the changes in the number of persons living on farms year by year. It may be remarked, incidentally, that such information also furnishes a valuable basis for studies along collateral lines, such as the trend of consumption of crops and livestock products on farms, changes in the relative efficiency of human labor on farms, and changes in the demand for certain commodities and services by farm people.

Last year information for this study was obtained on more than 80,000 farms. It revealed that our farm population on January 1, 1933, was estimated at 32,242,000. This is the largest in the history of the country. During 1932 there was a net gain in the number of persons living on farms of slightly over 1,000,000. This, too, is the largest gain in a single year ever recorded by our annual estimates. In fact, substantial losses in farm population occurred practically every year from 1910 to 1930, but in the 3 years since the beginning of 1930 all of these previous decreases in farm population have been more than made up. These studies on farm population give a striking reflection of general economic condition since the World War. They reflect the agricultural depression and, more recently, the industrial depression with its unemployment and repercussions on agriculture.

A study was completed last year of the effect of typical rural industries upon the farmer's standard of living. Some 123 rural industries in 15 States were investigated to this end, including textiles, forest products, food and kindred products, stone, clay and glass products, machinery, chemicals, paper, etc. The number of persons living on farms and working in these industries, whole or part time, were 482 operators of farms and 3,692 members of the families of farmers. The average wages for the year earned in the rural industries by each

person to aid in the family living was $647 for males and $487 for females. In brief, this study indicated that the standards of living of farm people, both financial and nonfinancial, were very much increased by the employment of members of farm families in the industries.

RESEARCH IN THE FIELD OF MARKETING

There are many problems in the field of marketing farm products upon which research is essential. For example, the Federal standards for agricultural commodities require modification from time to time to meet the ever-changing practices in production, merchandising, storage, and processing. Standardization research, therefore, is one of the Bureau's important activities.

This year a long series of studies was brought to completion having the objective of improving the Federal standards for wheat, rye, corn, oats, feed oats, mixed feed oats, barley, and grain sorghums. Since grain standards were first promulgated in 1916 under the provisions of the Grain Standards Act, changes and additions have been made from time to time to keep pace with changing conditions in grain production, processing, and marketing. It is now proposed to make further improvement in correlating the standards with the increasingly complex methods of grain marketing, warehousing, and processing.

The Bureau has proceeded with great care in leading up to these proposals. For 2 years it has been making an experimental application of the proposed revised standards in the field offices of Federal grain supervision in order to check the inspection practicability of the proposed standards and to observe their effect on the grading of market receipts of grain. That the interests of various groups in the trade will not be affected adversely, the Bureau has printed these proposals in detail (Miscellaneous Publication 173) and has submitted them for a period of several months of public consideration. Opportunity is thus being given to producer organizations, the grain trade, grain processors, inspectors, and the State departments of agriculture and agricultural colleges to give thorough consideration to these proposals and to make constructive suggestions to the Bureau.

Research was undertaken during the year to provide official standards for malting barley. The demand for barley is increasing rapidly, with the result that material premiums are being paid for barley of malting quality. Incident to these barley investigations it was found necessary to develop some rather ingenious new equipment for the use of inspectors in the application of sizing specifications. A motor-driven continuous-flow sizing device was developed that will permit the inspectors to make the sizing determination in a very rapid and accurate manner. In these investigations it is hoped that sufficient data will be obtained from the 1933 crop to permit the formulation of standards for malting barley for use in the 1934 crop.

Research work has been inaugurated to develop a rapid method for the determination of oil content of flaxseed and soybeans. This test is important in the merchandising of these commodities for the reason that oil is the principal product from them. Oil testing of this sort has never been used in connection with the grading and merchandising of flaxseed and soybeans because no rapid, accurate test has been available.

The moisture content of grain is highly important in that it has a direct relation to the intrinsic value of any given lot of grain, and because it governs the keeping quality of grain in storage and during transportation. The Bureau has carried out extensive research work in an effort to perfect tests, using electric moisture testers, whereby the moisture in grain can be determined in half a minute, instead of half an hour, as now required with the Brown-Duvel moisture tester. The adoption of this new and rapid method, when completed, not only will effect great savings in the cost of grain inspection but also will vastly extend the use of moisture testing in inspection departments, country elevators, terminal elevators, and mills, as a measure of the grade and keeping qualitites of all kinds of grain.

STUDIES OF WEIGHT LOSSES IN TOBACCO

Research studies were inaugurated during the year to determine the character and extent of losses in weight sustained by leaf tobacco from the time it leaves the farmer's hands until manufacture. Losses in weight occur as a result of stemming operations and from cleaning, redrying, sweating, and long storage. They vary for the different types of tobacco and for specific types according to whether the tobacco is being prepared for domestic storage or export. The Bureau of Internal Revenue is looking to the results of these studies for basic information upon which

to modify, if necessary, certain of its regulations by which allowances are made to dealers and manufacturers for losses in weight of the tobacco for which they are held accountable. The information is also to be applied in assessing the processing taxes necessary under the Agricultural Adjustment Administration.

COTTON RESEARCH

The accumulation of great surpluses of cotton in the world has emphasized the importance of quality, as well as of price, in the competition of American cotton with that grown elsewhere. It is now clearly apparent that if our cotton is to retain its former prestige in the markets of the world, it must be bred and grown with the quality needs of consumers more definitely in view.

The Bureau has undertaken a series of researches designed to isolate and measure some of the more important factors of quality in terms of physical units and to evaluate their importance. This work is being carried on in the fiber laboratories at Washington, which are equipped with instruments for the precise measurement of such factors as length, length distribution, strength, fineness, color, and fiber structure. Through cooperative arrangements, intensive studies of fiber structure are being carried on in the laboratories of the Boyce Thompson Institute, while spinning investigations are being performed under a cooperative arrangement with Clemson College.

Because of the nature of the problem, many of these studies are necessarily of a continuing nature. They are constantly yielding, nevertheless, results of immediate application and value. For example, it has been known as a general rule that fineness in cotton fibers is associated with length of staple. Studies in our own laboratories within the year have gone further in showing the relationship of fiber fineness to the strength of yarns, strength being the principal criterion of yarn quality thus far developed.. In these studies long-staple sea-island cotton, which possesses the greatest degree of fineness of any cotton, was cut into lengths to simulate $^{15}/_{16}$- and 1-inch cotton of natural growth which are normally much less fine. The 22s yarn spun from 1-inch staple cut from sea-island cotton showed an average skein strength of 146 pounds, which is 51 percent higher than the average of a large number of American upland cottons naturally of this staple length and 27 percent higher than the strongest yarn ever manufactured from this staple length group at our spinning laboratory.

Another remarkable fact disclosed concerns the count to which cottons having the fineness of fiber of sea-island cotton can be spun. For instance, the four lots of $^{15}/_{16}$-inch cut fiber were all satisfactorily spun into 60s yarn of very good strength, an achievement not recorded, so far as is known, with natural cottons of this staple length. It is possible that, with special care or technic, the mixtures could have been spun into even higher counts. The importance of these results is emphasized by the fact that natural cottons $1^1/_8$ or even $1^3/_{16}$ inches in staple length and of apparently good quality are frequently found which can be spun into 60s yarn only with difficulty. The significance of this information may be appreciated when it is realized that one of the major competing countries has made it a part of its national policy to achieve in its cottons those qualities which will yield a yarn strength 30 percent greater than can be attained with American cotton of like staple. This illustrates but one of the numerous problems and findings in our cotton work.

As methods of observation and analysis were developed in the fiber and spinning laboratories, they were found to have application to the problems of ginning. The annual loss of values in cotton through faulty ginning, estimated in excess of $25,000,000 a year, has been noted in earlier reports. To lay the foundation of knowledge for a program of action to reduce these losses is the purpose of the national ginning laboratory at Stoneville, Miss., in which this Bureau cooperates with the Bureau of Agricultural Engineering. Although the program of the ginning investigations is only well begun, the data so far obtained are leading to important improvements in gin design and operation. The process of drying seed cotton before ginning, developed in cooperation with the Bureau of Agricultural Engineering, was used on approximately 25,000 bales of the 1931 crop and 45,000 bales of the 1932 crop. The substantial increase in the number of bales ginned with this process indicates the favor with which it is being received. As a result of the use of this process upon wet cotton, it is conservatively estimated that the value of the cotton is increased from 60 cents to $5 a bale above the cost of drying. It is estimated, moreover, on a basis of the new drying installations that several hundred thousand bales will be artificially dried during the present season.

A factor of cotton quality of great importance is that of neps—small knotted masses of fiber found in badly ginned cotton. Heretofore little has been known of their origin or of the means of obviating their formation in ginning. A technic has been developed within the year for the classification of neps, naps, and seed-coat fragments. This is described in Technical Bulletin 396, Neps and Similar Imperfections in Cotton.

Studies of Cotton Prices in Local Markets

Studies of farm prices for cotton have definitely established the fact that prices received by growers do not reflect accurately differences in spinning value of different grades and staple lengths. During the 1932–33 season data on more than 30,000 individual bales and more than 50 local markets distributed throughout the Cotton Belt were collected and analyzed. It was found that prices paid to growers varied so irregularly on the basis of grade and staple length that it was not unusual for farmers to receive considerably higher prices for some grades and staples than other farmers received for higher grades and staples in the same markets on the same day. Average prices paid to growers were somewhat higher for the higher grades and longer staples than for the lower grades and shorter staples, but the average premiums and discounts for growers were considerably lower than those quoted in central markets. Thus the results of similar investigations during preceding years were confirmed. These variations are largely accounted for by a lack of knowledge of correct classification and commercial value among farmers and local cotton buyers and further point to the need of improved classification and market-news facilities in local markets.

Supplementing further the information secured in local markets, data were also collected at a number of points in west Texas and southwestern Oklahoma as a basis for determining the effects of methods of harvesting on the quality and price of cotton.

In addition, information was secured on cotton sold in the seed, during the season, in 13 local markets in Oklahoma, Missouri, Tennessee, and Arkansas as a basis for comparing prices received by growers for cotton sold in the seed with those for cotton sold as lint. The practice of selling cotton in the seed affects not only the ginner and grower but also the whole cotton industry, and a policy in respect to this practice should be determined in the light of the best interests of the public. Taking all factors into account, the conclusion was reached that from the standpoint of the public interest the disadvantages of the practice definitely outweigh its advantages.

Adaptation of Cotton to New and Extended Uses

Studies continued during the year, looking toward increased use of cotton in the form of consumer-sized bags for packaging fruits and vegetables, have resulted in considerable gains in the quantity of cotton used in this field. Trade estimates place the shipments of Florida oranges in 5-, 8-, and 10-pound cotton bags at more than 2,700 carloads, in addition to the use of approximately 2,000,000 cotton bags for packaging bulk shipments at destination. Considerable increases were also reported in the use of the duplex bag, developed by the Bureau, for the shipment of potatoes, onions, and walnuts. A cooperative association in an initial order used 400,000 of these duplex bags for the shipment of walnuts.

Cotton bagging for covering cotton bales has proved a suitable covering for transporting, for compressing, and for withstanding the strains of domestic and export shipment. For a complete appraisal of the usefulness of cotton bagging, however, it is necessary to ascertain the comparative resistance of cotton and other materials to exposure and the comparative protection to the contents of the bale. The Bureau, in cooperation with the textile school of the North Carolina State College of Agriculture and Engineering, has conducted studies and made tests to ascertain the weathering qualities of cotton bagging as compared with other types of covering materials for cotton bales. The results obtained to date are not conclusive, but the preliminary findings indicate that less fiber was damaged on bales covered with lightweight coverings than with the heavier jute coverings. The lightweight cotton coverings were, however, more susceptible to attack by bacteria and fungus growths. This experience has indicated the advisability of developing a treatment to render cotton bagging less susceptible to disintegration. Work of this nature is proceeding simultaneously with the continuation of the weathering test.

A study of the use of cotton in the sugar industry was begun and while an analysis of the data has not been completed, preliminary figures indicate that the

use of cotton in the form of cotton bags for containers of refined sugar furnishes a market for approximately 100,000 bales of cotton annually. The data also indicate that there has been a substantial gain in the use of the single 100-pound cotton bags as well as the introduction of the striped-sheeting bag for use as a cover for small cotton "pockets." The potential use of cotton in the form of cotton bags and filter cloth in the sugar industry is indicated to be about 190,000 bales.

DISTRIBUTION OF ECONOMIC INFORMATION

The events of the year with their widespread economic influences have created a demand for economic facts far exceeding anything in the past experience of the Bureau. Such calls upon the Bureau became increasingly urgent in the fall of 1932, continued to grow as the new agricultural policies began to be considered by Congress and the legislatures, and took on increasing intensity with the special session of Congress last spring. Following this period the organization of the several agencies having to do with agricultural relief and the newer projects for future planning have brought the information handled by this Bureau into a position of increasing importance.

To meet this far-reaching change, the information facilities of the Bureau have been taxed to the utmost to prepare the facts in forms that make them most useful for the large number of new workers engaged in planning further changes in national economic policies. In spite of the limitation of printing funds and facilities for mimeographing, the scope of distribution of the Bureau's material has been maintained in nearly all lines and even increased in some particulars. The regular periodical reports were continued during the year with but few changes and several notable special publications were issued having permanent value. Some of these have been referred to previously in this report.

The total number of printed publications issued by the Bureau last year increased slightly over those of the previous year, notwithstanding the reduction in the printing fund. Economies were effected primarily in reducing the size and editions of the publications. About the usual number of preliminary reports were issued in mimeographed form notwithstanding a reduction of about 40 percent in the paper allotment for the Bureau. Here again it was necessary to curtail the size of editions.

A special and unusual task handled by the Bureau this year was the preparation of exhibits for the Century of Progress Exposition at Chicago. A considerable amount of planning and work upon the Department's exhibit was centered in this Bureau and was carried through practically on schedule, with the result that the Departmental exhibit was one of the few governmental displays that was ready when the exposition opened in May.

The Bureau was called upon increasingly to handle special assignments for the preparation of special articles, charts, film strips, motion pictures, exhibits, and the like.

Through cooperation with the vocational teachers, publications of the Bureau have been introduced to thousands of students in the high schools and through them to their families, thus adding rapidly to the general spread of this type of economic information.

AGRICULTURAL ECONOMICS LIBRARY

The Bureau has developed one of the most comprehensive libraries in the world covering the literature of agricultural economics. During the year the library has made several significant contributions within its field. It maintained a monthly periodical which not only listed but also abstracted or reviewed practically all the important current publications in the field of agricultural economics. It compiled and issued 11 bibliographies covering various important economic subjects for which the reference demand has been unusually widespread. It perfected a system of current indexes and catalogs making the literature of this field more readily available to legislators and others having need for a rapid reference service.

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